DEVELOPMENT AND EVALUATION OF COMPUTER SIMULATIONS FOR TEACHING RETAIL MANAGEMENT CONCEPTS

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CHAPTER I

INTRODUCTION

Computer-assisted management is rapidly becoming accepted as a means of improving decision making in the retail industry. Progressive retailers are developing automated management systems which store large volumes of business data. These automated systems generate numerous reports which are invaluable to the retail manager. In addition to reports, managers have immediate access to stored information via in-store computer terminals. Computerized management is viewed as a key to bottom-line profit.

Mossman (1980, p. 45) noted that the computer has changed the world of work and thus places a burden on education to "teach students how to use the computer in the activities they plan to pursue after leaving school." Sisler (1977), in a survey of retailers and retail employees, reported that more than 50 percent of both employers and employees indicated that a positive attitude toward the computer and an ability to interpret a computer printout were necessary for an entry level management position in retailing. It is clear that the computer has an important role in the functioning of a retail business. Students preparing for careers in the retailing industry must be made aware of the computer's role in retailing. They should also be given the opportunity to interact with and use the computer in situations representative of those they will face on the job.

Toffler (1980) noted that all education springs from some image of the future. Rapid advances in computer capabilities and retail applications are expected throughout the 1980's. Based on this image of the future, retailing educators should seek to incorporate the computer into the educational setting whenever appropriate.

One method of incorporating the computer into the classroom is simulation. Beck and Monroe (1969, p. 45) defined simulation as "a procedure in which a model of or an analog to a real situation is created for the purpose of testing or teaching." Computer simulations can be designed to provide learning environments that represent real life situations.

It is possible to design computer simulations for teaching problem solving or decision making. In a problem solving simulation, the learner masters the process required to arrive at a specified answer. In a decision making simulation, the learner responds to a series of contingencies generated by the computer, which then evaluates and describes the consequences of the learner's responses.

Computer simulations have been used extensively in business education for teaching both problem solving and decision making. However, simulations designed to teach aspects of retail store management are few.

Purpose of the Study

The purpose of the study was to develop and evaluate computer simulations for teaching selected retail store management concepts. The simulations were designed to represent existing computer-assisted retail store management applications and to allow for student interaction

with the computer. The three specific objectives of the study were to:

1. identify uses of the computer and computer-generated information in retail store management,

2. develop computer simulations representative of existing computer-assisted retail store management applications, and

3. evaluate the computer simulations in an instructional situation.

Hypotheses

The following null hypotheses served as a basis for the study:

H_1: There is no significant difference in cognitive learning between students who completed a case study and students who completed a computer simulation on:

a. six-month planning

b. unit and dollar control

H_2: There is no significant difference in mean ratings on the attitude scale between students who completed a case study and students who completed a computer simulation on six-month planning related to:

a. motivation and interest

b. perceived learning

c. changes in the character of later course work

d. affective learning regarding the subject matter

e. affective learning in general

f. changes in classroom structure and relations

g. enjoyment

H : There is no significant difference in mean ratings on the attitude scale between students who completed the case study and students who completed the computer simulation on unit and dollar control related to:

a. motivation and interest

b. perceived learning

c. changes in the character of later course work

d. affective learning regarding the subject matter

e. affective learning in general

f. changes in classroom structure and relations

g. enjoyment

Definition of Terms

The following terms were defined for reference throughout the study:

Affective Learning - "the development of appreciations and emotional sets, or changes in interest, attitudes or values" (Bloom, 1956, p. 7).

Application Software - "programs designed for a specific system or problem to which the computer is applied" (Paulson, 1973, p. 195).

Business Simulation - "a sequential decision-making exercise structured around a model of a business operation in which participants assume the role of managing the simulated operation" (Greenlaw, Herron, and Rawdon, 1962, p. 5).

Cognitive Learning - "the recall or recognition of knowledge and the development of intellectual abilities and skills" (Bloom, 1956, p. 7). In this study cognitive learning was operationalized as the difference between the posttest score and the pretest score.

Computer-Assisted Instruction (CAI) - is "any situation in which a computer is used as a presentor of instructional material to the student" (Mosier, 1975, p. 6).

Computer-Based Instruction (CBI) - is "any situation in which the computer is used as a resource, source of material, source of data analysis, or tool for the student" (Mosier, 1975, p. 6).

Computer Simulation - "any computer model of a scientific or social event or phenomenon" (Doerr, 1979, p. 71).

Hardware - "the physical equipment comprising the computer and its associated peripheral devices" (Paulson, 1973, p. 195).

Record - "a collection of related data or words treated as a unit" (Silver and Silver, 1981, p. 605).

Simulation - "the dynamic execution or manipulation of a model of an object system for some purpose" (Barton, 1970, p. 6).

Software - "computer programs, procedures, rules, and possibly associated documentation concerned with the operation of a data processing system" (Silver and Silver, 1981, p. 606).

Utility Program - A generalized program, usually supplied by the hardware manufacturer, that speeds software development, such as a screen-aid, or performs common system functions, such as a disk-to-disk copy.

Organization of the Study

The study was organized into six chapters. The first chapter consists of an explanation of the purpose of the study, a statement of objectives and hypotheses, and a definition of terms. A review of literature pertinent to the research is discussed in Chapter II. A detailed description of the identification of uses of the computer and computer-generated information in retail store management is presented in Chapter III. Development of the computer simulations is included

in Chapter IV. The evaluation of the computer simulations is included in Chapter V. The summary and recommendations are presented in Chapter VI.

CHAPTER II

REVIEW OF LITERATURE

The study dealt with the development and evaluation of computer simulations for teaching retail store management. The topics discussed in this review were models for the development of computer-assisted instruction, computer-based college teaching, research on instructional simulation and research on business simulations. The literature in these areas provided a basis for the study.

Models for the Development of Computer-Assisted Instruction

A systematic approach to the development of computer-assisted instruction (CAI) programs is imperative. Reed, Ertel, and Collart (1974) designed a three stage model for CAI program development. The model was based on the premise that CAI program development is a cooperative effort involving the program author and a group of consultants who understand the capabilities of the computer system. The model included a preliminary stage, an authorship stage, and a course release and evaluation stage. A flowchart was used to guide the developer through the logical steps of each stage.

During the preliminary stage, the program developer identified, verified, and surveyed the learning need; selected a topic; became aware of CAI capabilities; contacted the available computer center; developed

terminal behavioral objectives; outlined the content; constructed criterion tests; and held a strategy meeting with program consultants. The second stage, or authorship stage, involved course authorship and programming, on-going review by the consultant team, "on-line" author critiquing and editing, program revision, and program field testing. The final stage, course release and evaluation, included a review by the endorsing organization and program modification. The program was then evaluated to assess its quality and usefulness (Reed, Ertel, and Collart, 1974).

Doerr (1979) also recommended a team approach for simulation development. She suggested that subject matter specialists as well as experienced instructional programmers be involved in the process. Doerr's model like the Reed, Ertel, and Collart (1974) model emphasized the development of clearly stated learning objectives and the evaluation of available resources. The model also emphasized the determination of simulation suitability for the instructional problem. Doerr pointed out that the critical step in simulation development was constructing a model of the situation to be simulated. Constructing the simulation model involved collecting and sorting information about the situation, constructing an outline of the model, and selecting the elements in the real situation to be reproduced in the simulated situation.

Twelker (1969) developed another model for designing instructional simulation systems. A flowchart consisting of 13 steps was designed to determine what to teach, determine how it might be taught best, and validate the system. Determining what to teach involved defining the instructional problems, describing the operational educational system,

relating the operational system to the instructional problem, specifying behavioral objectives, and generating criterion measures. Determining how the instructional problem might be taught best involved determining the appropriateness of simulation and the type required (i.e., computer or non-computer) and developing specifications for the simulation experience. The final phase, validating the system, involved developing, trying out, and modifying the simulation system prototype, conducting a field trial and making further modifications. This phase was an on-going process.

The Reed, Ertel, and Collart (1974), Doerr (1979), and Twelker (1969) models are similar in many ways. For example, all define the instructional problem, determine the capabilities of available resources, specify behavioral objectives, and allow for on-going field trial and modification. The basic difference in the models is the consultant strategy taken by the Doerr and Reed, Ertel, and Collart models. Twelker's model does not involve the use of a consultant team for program development. Another difference is that the Reed, Ertel, and Collart model allows for a formal survey of the learning need. A final difference is that the Twelker and Doerr models determine the appropriateness of the simulation method after the behavioral objectives have been stated.

Computer-Based College Teaching

Determining the effectiveness of computer-based college teaching has been the goal of many researchers. Kulik, Kulik, and Cohen (1980) using meta-analysis (analysis of analyses) integrated findings from 59 independent evaluations of computer-based college teaching. The studies

evaluated were conducted between 1967 and 1978. Each study took place in a college classroom and the researchers reported quantitatively measured outcomes in both computer-based and conventional classes. Tutoring, computer-managed teaching, simulation, and programming the computer to solve problems emerged as the four types of computer applications used in the classrooms. Study outcomes were of four major types and were concerned with student achievement, course completion, student attitudes, and instructional time.

The meta-analysis (Kulik, Kulik, and Cohen, 1980) indicated that computer-based instruction (CBI) made small but significant contributions to the course achievement of college students. In a typical class, student achievement was raised one quarter of a standard deviation unit. It was also found that computer-based instruction produced positive effects on student attitudes toward both instruction and the subject matter they were studying. In the studies measuring instructional time, the computer produced a substantial time savings. For example, the conventional approach required about 3.5 hours of instructional time per week while the CBI approach required only 2.25 hours.

Relationships between design features and experimental outcomes were also examined (Kulik, Kulik, and Cohen, 1980). Only one design feature, use of a control for instructor effect, had a significant effect on the experimental outcomes. For example, when different teachers taught the computer-based and conventional groups, the examination scores were significantly different in favor of the computer-based group.

Research on Instructional Simulation

Several studies have been conducted to integrate the findings from research on instructional simulation. Cherryholmes (1966) evaluated the findings from six non-computer simulation studies to assess the following hypotheses:

> Students participating in a simulation will
> 1) reveal more interest in a simulation exercise than in more conventional classroom activities.
> 2) learn more facts and principles of information than by study in a more conventional manner.
> 3) acquire more critical thinking and decision making skills than will students in more conventional classroom activities.
> 4) retain information learned longer than if they had learned it in a more conventional manner.
> 5) have their attitudes significantly altered relative to attitude change produced by conventional classroom methods (p. 4).

Only the first hypothesis was accepted (Cherryholmes, 1966). Students reported more interest in simulation activities than in more conventional classroom exercises. Cherryholmes noted that the low rate of hypothesis acceptance might be due to poorly defined instructional objectives. In many evaluative research studies researchers constructed materials without first defining instructional objectives. The tests devised to measure the value of the instructional materials were therefore unsatisfactory.

In a more recent study Pierfy (1977) evaluated 22 non-computer studies that compared learning through simulation games to learning through other educational experiences. Pierfy reported that in the majority of the studies no significant differences were found between posttest scores of the experimental and control groups.

One-half of the studies included a measure of learning retention (Pierfy, 1977). Significant findings were reported in favor of the

simulation games. Pierfy also found that simulation had a greater impact on attitude change than did the conventional methods. Student interest was also higher in the groups using the simulation.

Dekkers and Donatti (1981) used meta-analysis to integrate findings from 93 empirical research studies concerned with instructional simulation. The analysis included studies of both computer and non-computer simulations. For analysis purposes, studies were classified as to their concern with student cognitive development or retention, or attitude formation. Data from each study met the following criteria: the study compared the two groups with regard to either learning, retention, or attitudinal changes and it contained the mean and standard deviation of the two groups on at least a posttest designed to measure differences between the two groups in the simulation study.

The meta-analysis provided several findings. Simulation was more effective for attitude formation than was the lecture. When compared with other teaching strategies, there was no evidence that computer simulation usage increased cognitive development or retention. Two significant negative correlations existed in the data for the cognitive and retention studies. Simulations of long duration (one semester) might be less effective than those of short duration (Dekkers and Donatti, 1981). Another significant correlation was identified between the validity of the measuring instrument and the study results. Studies that did not report on the validity of the measuring instruments had more positive results than those studies reporting on instrument validity.

Negative correlation coefficients approached significance for the relationship between sample size and reported outcomes. Positive

results were reported more often when the sample size was small. This would suggest that simulations might be more effective with small groups (Dekkers and Donatti, 1981).

Greenblat (1973) outlined six categories of propositions concerning the pedagogical effects of simulations. These propositions were drawn from empirical research findings and from a variety of articles and books citing anecdotal claims about simulations. The propositions were categorized under the following headings: 1) motivation and interest, 2) cognitive learning, 3) changes in the character of later course work, 4) affective learning regarding subject matter, 5) affective learning in general, and 6) changes in classroom structure and relations. Each category was comprised of two or more propositions. Greenblat proposed that simulation would produce a greater or more positive result in regard to each specific proposition than would other teaching methods.

Greenblat's (1973) propositions regarding motivation and interest have some empirical support. Brenenstuhl and Catalanello (1979) found that students in a simulation group were more motivated to work in their laboratory sections than were students in an experiential group or a discussion group. Robinson, Anderson, Hermann, and Snyder (1966) found that the case method was more successful than simulation in eliciting student interest as measured by students' perceptions, but measures of student behavior indicated that simulation was more successful than case in affecting student interest and involvement.

The propositions categorized as cognitive learning also have some empirical support. Wolfe and Guth (1975) reported that a simulation game produced better results in concept mastery than did a case study method. Concept mastery was defined as the "ability to understand and

recognize the ramifications of the given principle and concept" (Wolfe and Guth, 1975, p. 357).

Support for Greenblat's (1973) propositions regarding changes in the character of later course work is limited. Sherrell and Burns (1982) operationalized the propositions and compared student attitudes toward four teaching methodologies. Sherrell and Burns found that several propositions under this category did appear to group together based on the student ratings of the exercises.

Support for Greenblat's (1973) propositions concerning changes in classroom structure and relations is limited. Sherrell and Burns (1982) used an attitude scale, which included all of Greenblat's propositions to compare student attitudes toward four teaching methodologies. Several of Greenblat's propositions regarding changes in classroom structure and relations grouped together to reflect a student/teacher relations dimension. Sherrell and Burns found that the more involving teaching methods (microsimulation and case study) produced more favorable attitudes toward the exercises.

Research on Business Simulations

Computerized simulation games have been used by business schools since the 1960's. Usage has increased substantially in recent years as evidenced by the number of simulations reviewed in periodicals such as Simulation and Games and the Proceedings of the Association of Business Simulation and Experiential Learning.

Business educators have conducted research to determine such factors as the effectiveness of simulation as a learning tool, the impact of simulation on attitude formation, and student perceptions of

learning via simulation. Many research techniques have been employed, yet few conclusive findings have been reported.

Effectiveness of Simulation as a Learning Tool

An experiment conducted by Cooke and Maronick (1977) revealed that simulation did increase learning. Students (N=140) in four introductory marketing courses participated in the experiment. The experiment followed a before and after control group design using the same test instrument at the beginning and at the end of the semester. Two instructors were used; each instructor taught one experimental group and one control group. Simulation was used to aid the experimental group in learning three concepts; breakeven analysis, mark-up, and sales analysis. The simulation was not incorporated into the class plan but was extra work for the students using it. Students in the control groups had no substitute for the simulation exercise. For both instructors, classes using the simulation showed a greater change in learning than did the classes who did not use the simulation. However, results were statistically significant for only one instructor.

Wolfe and Guth (1975) compared students in a 'case only' business policy course to students in a 'simulation only' business policy course. Students in the simulation course were expected to obtain a higher overall understanding of business policy course material. This expectation was supported by their research. Wolfe and Guth also reported that the simulation game produced better results in concept mastery than did the case study method. Concept mastery was defined as the "ability to understand and recognize the ramifications of the given principle and concept" (Wolfe and Guth, 1975, p. 357). Another expectation of the

research was that students in the 'case' course would obtain a higher degree of fact mastery. This expectation was not supported by their research. Students in the 'case' course and students in the 'simulation' course did not differ in their ability to master facts; both groups displayed a high degree of fact mastery.

Raia (1966) hypothesized that participation in a computerized management game (management simulation) would increase learning when used as a supplementary teaching aid. He also hypothesized that a simple game would provide the same benefits in terms of learning as would a more complex game. These hypotheses were tested with students (N=139) in five sections of a business policy course taught traditionally by the case analysis approach. The students were randomly assigned to one of three groups; one control group and two experimental groups. Each group participated in a case analysis. The experimental groups, however, also participated in a computerized management game. One experimental group participated in a simple game and the other experimental group in a more complex game. A written examination was given to each group both before and after the management game was introduced to the experimental groups. The examination measured knowledge of management concepts and techniques and skill in applying them to complex business situations. Raia (1966) found that the experimental groups (game-playing) scored significantly higher than the control group (non-game-playing) on all parts of the final examination.

Boseman and Schellenberger (1974) conducted an experiment similar to that of Raia's (1966) study. They hypothesized that a computerized management game would increase learning when used as a supplemental teaching aid. Students (N=74) in four sections of a business policy

course were the participants in the study. An experimental and a control group were formed by randomly assigning the students to one of the groups. All students analyzed cases during the first portion of the experiment. During the second portion of the experiment, the experimental groups participated in a management game and the control groups continued with the case studies. An interactive case study was used to measure student learning. No difference in learning was found between the experimental (gameplayers) and the control groups (non-gameplayers).

Similar results were also reported by Brenenstuhl (1975). No significant differences in cognitive learning were found between students in a management course who used a supplementary computer simulation and students who did not. The students in the management course were randomly assigned to an experimental (computer simulation) or a control group (no computer simulation). All students received equal coverage of the subject matter during class lectures. The experimental group, however, used a computer simulation as a supplementary learning aid.

Three teaching methodologies were compared by Brenenstuhl and Catalanello (1979) to determine if the different techniques would produce different levels of cognitive learning. Students in three management laboratories were taught using a computer simulation, an experiential exercise, or the discussion method. No differences in cognitive learning were found between the students based on the teaching method used.

Sherrell and Burns (1982) compared four teaching methods to determine if the different techniques would produce different levels of cognitive learning. Students in three sections of a marketing course were taught retail location strategy using either a microsimulation, a

case study, an experiential exercise or a series of discussion questions. No differences in cognitive learning were found between the microsimulation, the case study, or the experiential exercise. However, students who completed the discussion questions did have better test scores.

Impact of Simulation on Attitude Formation

Raia (1966) hypothesized that participation in a computerized management game would cause more favorable attitudes and higher levels of interest and motivation when used as a supplementary teaching aid. To test the hypothesis an experimental group participated in a computerized management game while a control group participated only in regular class sessions. Raia found that the computerized management game heightened student motivation and interest. No significant differences in attitudes were found.

In another experiment, Boseman and Schellenberger (1974) tested Raia's (1966) hypothesis that participation in a computerized management game would cause more favorable attitudes and higher levels of interest and motivation when used as a supplementary teaching aid. As in Raia's experiment, an experimental group participated in a computerized management game while a control group participated only in regular class sessions. Boseman and Schellenberger found no significant differences between the two groups. They did not find that the computerized management game heightened student motivation and interest as did Raia.

Sherrell and Burns (1982) compared four teaching methods and included an attitude measure in their experiment. They compared a microsimulation, a case study, an experiential exercise and a series of

discussion questions on retail location strategy. They hypothesized that:

1. microsimulation would yield attitude levels consistent with those affected by the case study and/or experiential exercise and
2. the conventional approach (discussion questions) would result in less positive attitudes than would the alternatives - microsimulation, case study, or experiential exercise (p. 122).

Sherrell and Burns (1982) found that the attitude scores for the microsimulation group were significantly higher than those for the other three teaching methods. They also found that the microsimulation, the case study, and the experiential exercise did produce more positive attitudes than did the conventional approach (discussion questions).

Perceptions of Learning

Waggener (1979) conducted an end-of-course survey to analyze students' perceptions of the learning techniques used in graduate and undergraduate business policy courses. Another purpose was to present the survey results in a form which would allow comparison of conceptual (text and readings) and experiential (case study and simulations) techniques as viewed by students. Surveys were completed by six undergraduate classes (N=118) and two graduate classes (N=42) taught by the same instructor. The results showed that experiential techniques were perceived to be more effective and enjoyable than conceptual techniques, except in supplying an understanding of top management problems. Simulation was preferred to case studies, except in situations involving problem solving experiences.

Brenenstuhl and Catalanello (1979) conducted an experiment to determine the influence of three different teaching methodologies upon

students' perceived learning. The students (N=500) were enrolled in an introductory management course and were randomly assigned to one of 16 laboratory sections. One of three teaching techniques (experiential, computer simulation or discussion) was used in each laboratory. Perceived learning was significantly different between the teaching methodologies. Students in the computer simulation section perceived that the laboratory exercises helped them to develop their managerial skills more than did the students in the discussion section. The students in the discussion laboratory rated the item 'the laboratory section assisted in integration of material' higher than did the students in the experiential or computer simulation laboratories. Students in the computer simulation sections perceived that they learned more in the laboratory sections than did the students in the discussion class. No significant differences were found between the teaching methods concerning the perceived learning in the course.

Sherrell and Burns (1982) also compared teaching methodologies to determine the influence of each on students' perceived learning. The researchers compared a microsimulation, a case study, an experiential exercise and a series of discussion questions on retail location strategy. Sherrell and Burns (1982) found that the students who used the microsimulation and the students who used the case study perceived that they learned more than did the students who used the other teaching methods.

Summary

Findings from the Kulik, Kulik, and Cohen (1980) meta-analysis were positive. When CAI was used, positive attitudes toward the subject

matter studied and toward instruction were produced, a savings in instructional time occurred, and student achievement was raised slightly. However, the results were not linked to the type of computer application used (i.e., tutoring, simulation). The presentation of results would lead one to assume that all methods of computer-based instruction are comparable.

Many researchers have specifically studied instructional simulation. Results have been mixed and inconclusive. For example, several researchers (Cherryholmes, 1966; Pierfy, 1977; Dekkers and Donatti, 1981) have found no evidence to support the proposition that cognitive learning is increased when simulation is used, while another research team (Cooke and Maronick, 1977) reported that simulation did increase cognitive learning. Another discrepancy appeared regarding learning retention. Two studies reported no evidence of increased learning retention (Cherryholmes, 1966; Dekkers and Donatti, 1981) while another reported that learning retention was greater in groups taught via simulation (Pierfy, 1977).

Study results have been positive and more similar when aspects of the affective domain were measured. Several studies have reported that student interest was higher in groups using simulation (Cherryholmes, 1966; Pierfy, 1977; Waggener, 1977). Simulations have also been shown to be effective for attitude change and attitude formation (Pierfy, 1977; Dekkers and Donatti, 1981).

Some researchers pointed out that the inconclusive and mixed findings reported regarding instructional simulation were partly caused by poor research methods. Weaknesses such as poorly defined instructional objectives, lack of controls for instructor effect, and the lack of

validity and reliability tests of evaluation instruments have been identified as the culprits (Cherryholmes, 1966; Kulik, Kulik, and Cohen, 1980; Dekkers and Donatti, 1981).

CHAPTER III

IDENTIFICATION OF COMPUTER USAGE IN RETAIL STORE MANAGEMENT

The purpose of the study was to develop and evaluate computer simulations for teaching selected retail store management concepts. The first objective of the study was to identify uses of the computer and computer-generated information in retail store management. Activities included selection of participants, questionnaire development, collection and analysis of data, follow-up interviewing, and selection of topics for simulation.

Selection of Participants

Retail store buyers, assistant buyers, and managers with firms that recruited clothing, textiles and merchandising majors at Oklahoma State University during the 1981-82 academic year were asked to participate in the study. A listing of 17 on-campus recruiters was obtained from the Placement Office. This listing provided the store addresses and names of the personnel directors/executive recruiters. The recruiters represented large multi-store department store chains or specialty store chains. Names of buyers, assistant buyers and managers were obtained by contacting the personnel director/executive recruiter of each retail firm. A letter was sent explaining the purpose of the study and asking for assistance in identifying personnel to complete

the survey. A postcard was enclosed to facilitate the returning of the names. Forty-eight participants were identified and used in the survey. Correspondence related to the survey appears in Appendix A, p. 132.

Development of the Questionnaire

A questionnaire was developed to identify uses of the computer and computer-generated reports in retail store management. Items on the questionnaire were formulated based on findings in trade publications; conferences with clothing, textiles and merchandising faculty; and conferences with retailers in Tulsa and Oklahoma City. The questionnaire followed a checksheet format (Appendix B, p. 136).

Section I of the questionnaire required participants to indicate their job title or position. This was the only demographic information requested of the participants.

Section II of the questionnaire presented a list of duties retailers often perform using a computer terminal. These duties were grouped into six categories: sales planning, sales analysis, markup/markdown, inventory control, vendor use management, and personnel management. Participants were instructed to check the duties they performed using a computer terminal. Participants who did not perform duties using a computer terminal were instructed to advance to Section III of the questionnaire.

Section III of the questionnaire presented a list of computer reports often used by retail buyers and managers to assist in the decision making process. The reports were grouped into eight categories: departmental sales analysis, markup/markdown, trend recognition, promotion, inventory control, vendor analysis, personnel

management, and profit and loss analysis. Participants were asked to check the reports they used.

Participants were then instructed to place a star by the duties performed most often using a computer and by the reports used most often. Participants were also asked to list and briefly describe any duties performed or reports received which were not listed on the questionnaire. The questionnaire was pre-tested with selected retailers in Tulsa, Oklahoma City, and Kansas City, and with faculty members and graduate students in the Department of Clothing, Textiles and Merchandising. As a result of the pretest, Section II of the questionnaire was expanded to include seven other duties retailers performed using a computer terminal. These duties were: retrieving sales from previous weeks/months; checking percentage of sales in markup/markdown dollars; calculating maintained markup; checking perpetual inventory records; recording customer returns; recording markups and markdowns by vendor; and scheduling personnel. Section III was expanded to include one other report, an advertising budget report. No other changes were made.

Collection and Analysis of Data

Two types of data were gathered to identify computer uses in retail store management. The data included responses to a survey questionnaire and information gained from follow-up interviews with selected retailers. The follow-up interviews were guided by the survey questionnaire results.

The questionnaires were mailed to the participants together with a cover letter (Appendix A, p. 132) and self-addressed stamped envelope. The participants were given two weeks to respond. Nineteen responses (39.58%) were received after the initial mailout. A follow-up letter,

duplicate questionnaire, and another self-addressed stamped envelope were sent to non-respondents asking them to complete and return the questionnaire. Fifteen responses (31.25%) were received after this follow-up. Forty-eight questionnaires were distributed and a total of 34 (71%) were returned and used in the study. In addition, one potential respondent returned the questionnaire indicating that his firm was not using computers.

Questionnaire Analysis and Results

Data were analyzed using frequencies and percentages. Thirty-four questionnaires were returned and analyzed. The responses represented 17 buyers/assistant buyers and 17 managers.

Frequencies and percentages for each item on the questionnaire are presented in Table XXI, Appendix C, p. 139. Questionnaire items were arranged by category in descending order by total percentage. Computer uses reported by 50 percent or more of the respondents are presented in Table XXII, Appendix D, p. 142. Respondents were allowed to check more than one item in a category, therefore percentages do not total to 100 percent.

The data indicated that the retailers used computer-generated reports more than they used a computer terminal. Reports categorized under departmental sales analysis and inventory control were checked most often by the retailers. Some of the reports categorized under trend recognition, markup/markdown and profit and loss analysis were also checked often by the retailers. No reports categorized under promotion, vendor analysis, and personnel management were checked by more than half of the total group of respondents. Use of these reports,

however, was related to job title or position. Reports categorized as promotion and vendor analysis were checked by approximately 60 percent of the buyers/assistant buyers. Personnel management reports were checked by more than half of the managers.

Although more of the respondents used computer-generated reports than computer terminals, computer terminals were used by at least half of the respondents for some tasks. Most of these tasks were in the categories of sales analysis and inventory control.

Follow-Up Interviews

Four follow-up interviews were conducted with selected retailers to gain in-depth information concerning the use of the computer in their stores. Selection was based on the extensiveness of computer usage as determined by their questionnaire responses. The selected retailers were contacted by telephone to determine their willingness to participate in the interview. A department manager, an area sales manager, a buyer and a director of management information systems were interviewed.

Each person interviewed was given a listing of the computer uses reported by 50 percent or more of the questionnaire respondents. The interviews were unstructured, but the following questions helped guide the discussion:

1. What type(s) of situation(s) prompts the use of this report?
2. Could you describe the typical process you go through when using this report?
3. What information on the report is crucial to decision making?
4. Do you plan a strategy with a combination of reports?

5. Do you have copies of old reports that we might use for reference?

6. Could you describe your on-line applications?

7. What are your on-line capabilities?

The interviews provided a variety of information concerning computer uses in retailing. The interview participants were cooperative in supplying copies of computer-generated reports and in sharing their expertise in analyzing them. Two of the interviewees explained and demonstrated the capabilities of their on-line computer systems. Copies of the screen images were made available for classroom examples. All of the interviewees expected more interactive on-line computer applications to be developed. They also pointed out that more job positions within their stores were requiring direct interaction with a computer.

Selection of Topics for Simulation

Findings from the survey questionnaire and from the in-depth interviews were used as a basis for selecting the simulation topics. Computer uses reported by 50 percent or more of the questionnaire respondents were considered as possible topics for simulation. The 15 computer uses meeting this criterion are presented in Table XXII, Appendix D, p. 142.

The follow-up interviews helped to narrow the list of possible topics. It was found that the reports appearing under the departmental sales analysis category were often used in combination with other reports. Since these reports were also used by a majority of the retailers, it was decided that a simulation be designed based on a combination of these reports. The simulation was entitled Unit and Dollar Control.

The sales projection aspects of six-month planning made it seem appropriate as a second topic for simulation. After viewing the six-month planning modules of the on-line computer systems during the interviews, it was decided that a similar application could be simulated. Further, it appeared that such a program could be developed using the resources available to the researcher.

CHAPTER IV

DEVELOPMENT OF COMPUTER SIMULATIONS

The second objective of the study was to develop two computer simulations representative of existing retail store management applications. Activities included establishing the simulation objectives, assessing the Oklahoma State University Computer Center capabilities, establishing the simulation development procedures, and developing the six-month planning and unit and dollar control simulations.

Establishment of Simulation Objectives

The questionnaire and interview data from the retail store buyers, assistant buyers and managers provided information on the uses of the computer in retail store management. This information was used in the selection of the two topics for simulation; six-month planning and unit and dollar control.

Bloom's (1956) taxonomy of educational objectives was used as a guide for developing the simulation objectives. Objectives were written at the application level of learning in the cognitive domain. The objectives for the two simulations are listed below:

Six-Month Planning Objectives

1. To identify problems within a given six-month plan and restructure it in accordance with specific control data.

2. To predict the effect of an increase or decrease in planned

sales on gross margin, BOM stock to sales ratios, EOM stock to sales ratios, and planned purchases.

3. To predict the effect of an increase or decrease in reductions on gross margin, BOM stock to sales ratios, EOM stock to sales ratios, and planned purchases.

4. To apply the principles of merchandise planning in correcting problems within a given six-month plan.

5. To apply the principles of merchandise planning in preparing a six-month plan.

Unit and Dollar Control Objectives

1. To monitor sales of a particular classification.
2. To monitor inventory levels of a particular classification.
3. To maintain stock according to a pre-set standard.
4. To identify overstocked and understocked conditions.
5. To compute a stock to sales ratio.
6. To estimate the amount of stock needed for each merchandising period based on a given set of data.
7. To recommend price changes.

Computer Center Resources

Personnel at the Oklahoma State University Computer Center were consulted to determine the capabilities and limitations of available computer hardware, software and programming languages. The available computer hardware included an IBM 3081 main-frame computer and a Digital Equipment Corporation (DEC) VAX 11/780 mini-computer. The VAX 11/780 was selected for two reasons. First, it had been recently installed and was not being heavily used. Second, it was designed for interactive instructional purposes.

After deciding to use the VAX 11/780, software options were considered. The Forms Management System (FMS), a screen aid utility, was used to speed simulation development. The FMS software package allowed the user to type forms directly on to the terminal screen. This relieved the programmer of having to code screen images in the application program. The BASIC language was chosen as the programming language for several reasons. First, it was compatible with FMS and, second, the researcher had previous programming experience with the language. BASIC is also a simple language for amateur programmers to use and computer programs written in BASIC are easy to restructure for transfer to microcomputers.

Simulation Development Procedures

Procedures were developed to help organize and structure the development of the simulations. The first step in the process was to create the simulation scenarios. Scenarios were written to be representative of situations the student might face on the job. The second step was to design the simulation output (screens). The example reports and screen images obtained during the follow-up interviews were used during the output design step. The simulation objectives served as an overall guide in determining the output appropriate for each simulation. Next, detailed outlines were written to encompass the simulation objectives. Flowcharts were then developed to serve as guides for program logic and coding, debugging and documentation (Appendix E, p. 144). The actual program coding began after the flowcharts were completed. The BASIC program listings are presented in Appendix F, p. 148.

Following the development of the program code, student guides were written to explain the simulations (Appendix G, p. 190). Finally, the programs were tested and debugged. The program debugging was done in two stages. The first stage included a researcher critique and a reviewer critique. The critiques served to identify areas that were unclear and to detect areas of questionable accuracy. The programs were modified as indicated by the reviewers. The reviewers were graduate students and faculty members in the Department of Clothing, Textiles and Merchandising. The second stage was a field-test by subjects representative of the audience for whom the programs were developed. Further refinements were made as indicated by the field-tests.

Development of the Six-Month Planning Simulation

Using the behavioral objectives as a guide, the scenario for the six-month plan simulation was written. The scenario was designed to place the student in a buyer's role in the junior sportswear department of a medium-to-large sized department store. The student was given the task of evaluating a six-month plan made by the department's previous buyer. The student was given a listing of management's expectations for the department in the form of management criteria. The student was instructed to restructure the plan in accordance with the management criteria if necessary. A complete scenario is presented in the student guide (Appendix G, p. 190).

Next, output was designed. Prototype screens were designed to represent the six-month planning screens used by retailers. These prototype screens were condensed into one screen for the purpose of the

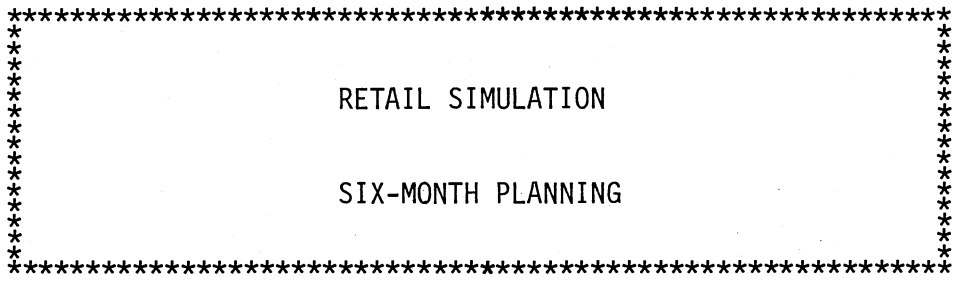
simulation. The screens were developed using the FMS software package. The text for each screen was typed directly onto the terminal. The editing features of this package allowed much flexibility in creating aesthetically pleasing screens. All numeric values on the screen were assigned field names such as A, B, C, etc. These field names were inserted in the application program code and were used to make needed calculations and to fill the screens with the appropriate numeric data.

A flowchart of the simulation was written to model the six-month planning process and to formalize the sequence of events (Figure 28, Appendix E, p. 144). The three major parts of the flowchart were the introduction, the six-month plan manipulation process, and the management approval process.

The introduction section included the procedures for logging on the computer and the title and scenario screens (Figure 1). Students using the simulation logged on to the VAX system and then keyed in a user-number and a password. A VAX utility which recognized the user-number and password was used to automatically start the simulation program. Next, the title of the simulation automatically appeared on the terminal screen. Then the scenario screen appeared that presented a shortened version of the simulation scenario.

Following the scenario screen, the six-month planning screen appeared. This began the second section of the flowchart, the six-month plan manipulation process. The six-month planning screen (Figure 2) presented projected dollar sales, end of the month inventory dollars, reduction dollars, beginning of the month inventory dollars, planned purchases, and gross margin figures for a six-month season. To add realism, the screen was designed to allow numbers to be changed by the

Title Screen



Scenario Screen

Welcome to RETAIL SIMULATION 1 - six-month planning! You will assume the role of a buyer in the junior sports-wear department of Albert J. Jolly Dry Goods. Your task is to submit a six-month plan that meets the criteria set by the store management.

G O O D L U C K !

Figure 1. Six-Month Planning Title Screen and Scenario Screen

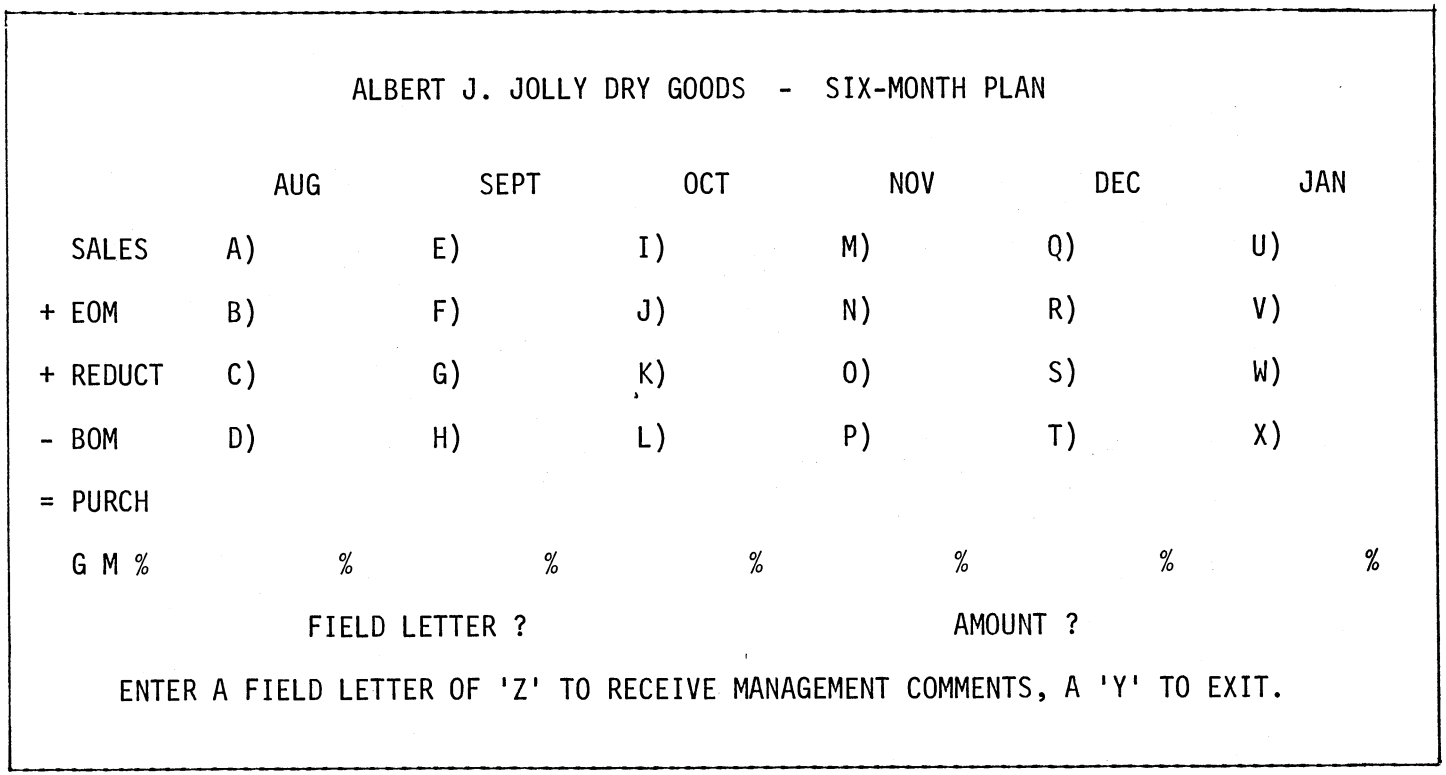


Figure 2. Six-Month Planning Screen

user. The student reviewed the calculations and made changes as needed. After the changes were made, the screen cleared and then reappeared with the updated calculations. This iterative process continued until the student was ready to submit the plan for management comments.

The final stage in the simulation development was designing the management approval process. This step was added to increase the educational effectiveness of the simulation. The management approval process allowed the student to submit the plan for management comments. The comments were presented as screen messages and appeared directly below the numeric figures. The management comments alerted the student to possible errors in the plan. The comments included the following messages:

1. Please check your monthly planned sales.
2. Are planned stock/sales ratios being met? Please review.
3. Monthly reduction figures seem unrealistic. Please check.
4. Are planned gross margin percents being met? Better double check.

If the plan was correct, the following message appeared:

> VERY GOOD! This plan meets management's criteria. The economy is uncertain. Sales and reductions may rise or fall. Make calculations to see how your plan might vary.

Next, the student was encouraged to do some sensitivity analysis. For example, they could experiment with how sensitive gross margin was to a change in sales or how increased sales would affect stock levels. The student could make various changes in the plan to determine the effects of each change. This iterative process continued until the student was comfortable in predicting the effect of a change in one

variable on another variable. Instructions for ending the simulation were presented on the terminal screen. The student could end the simulation at any point.

Development of the Unit and Dollar Control Simulation

The behavioral objectives guided the creation of the unit and dollar control scenario. The scenario was designed to place the student in the role of an assistant buyer in the junior sportswear department of a medium-to-large sized department store. The student was given the responsibility of monitoring 30 stock keeping units (SKUs) representing two classifications of merchandise. A variety of information was made available to the student. A complete scenario is found in the student guide (Appendix G, p. 190).

Next, the output was designed. Logical groupings of sales and stock information were organized. Prototype screens were designed and then condensed to final form. Three screens were designed to help the student analyze and view the sales and stock status of each merchandise classification. A main menu screen (Figure 3) was designed to list the screen choices available to the student. Another screen (Figure 4) was designed to allow the student to input reorder or price change decisions. Again, the FMS software package was used to facilitate screen development. All numeric values on the screen were assigned field names. These field names were inserted in the program code and were used to make needed calculations and to fill the screen with the appropriate numeric data.

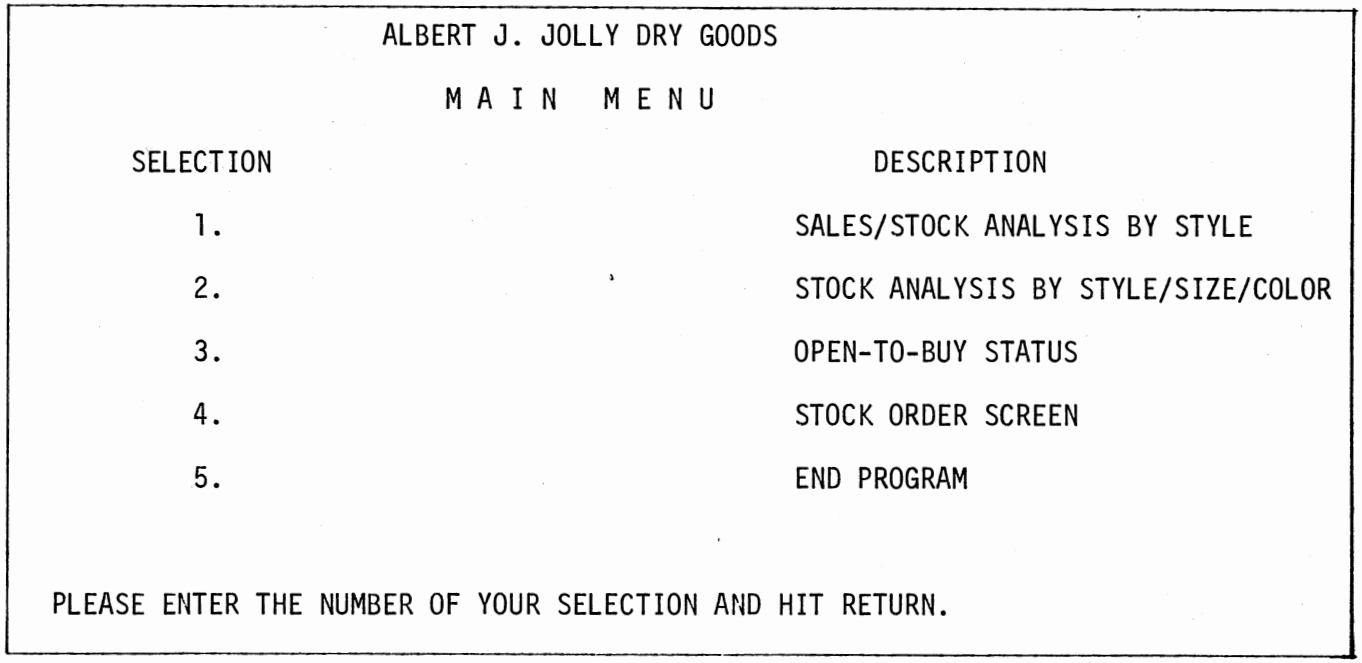


Figure 3. Main Menu Screen

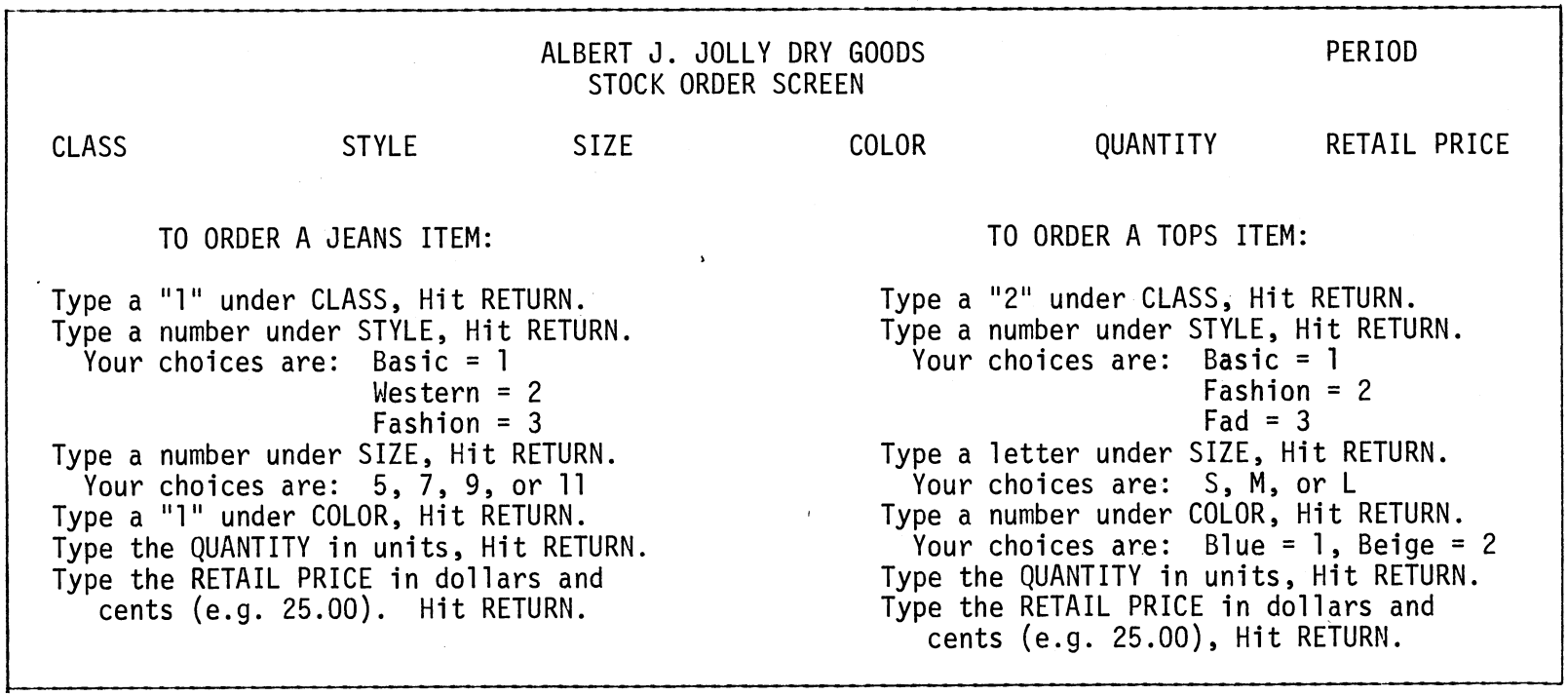


Figure 4. Stock Order Screen

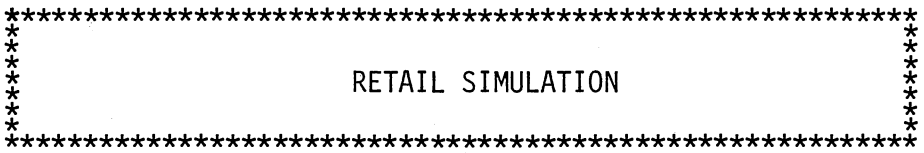
A detailed flowchart of the simulation was written (Figure 29, Appendix E, p. 144). This helped to formalize the sequence of events and to model the unit and dollar control process. The three major parts of the flowchart were the introduction, the information search process, and the market simulation.

The introduction section included the procedures for logging on the computer, and the title and scenario screens (Figure 5). Students using the simulation logged on to the VAX system and then keyed in a user-number and a password. A VAX utility which recognized the user-number and password was used to automatically start the simulation program. Next the title of the simulation automatically appeared on the terminal screen. Then, the scenario screen appeared. This screen presented a shortened version of the simulation scenario and then prompted the student to enter a student identification number. The student identification number served as a key to link the student with a group of records. These records stored data for the student during the simulation.

Since one of the goals of this simulation was to try to create a job-like environment, the simulation was entirely on-line. No printed reports were generated, although students were encouraged to take notes and write down important figures.

Three screen formats were used to allow the students to view stock and sales conditions from different perspectives. Information was available in both a summarized form and a very detailed form. The first of these three screens, the Sales and Stock Analysis by Style Screen (Figure 6), allowed the student to view the stock and sales situation of a classification. This screen presented information in a summarized form.

Title Screen



Scenario Screen

Welcome to retail simulation II, Unit and Dollar Control! You will assume the role of an assistant buyer in the Junior Sportswear Department of Albert J. Jolly's Dry Goods. You will be responsible for the jeans and tops classifications. You must use the available information to analyze the current stock and sales situation. After your analysis, you may make decisions to improve or maintain the current sales and stock situation.

G O O D L U C K !

Enter your student ID number to begin the simulation.

Figure 5. Unit and Dollar Control Title Screen and Scenario Screen

ALBERT J. JOLLY DRY GOODS
SALES AND STOCK ANALYSIS BY STYLE

CLASS	STYLE	--------SALES (000'S)-------- LY	PLAN	ACTUAL	OVER UNDER	--------STOCK (000'S)-------- EOM LY	PLAN	ACTUAL	OVER UNDER
JEANS	BASIC								
	WESTERN								
	FASHION								
TOTAL	JEANS								
TOPS	BASIC								
	FASHION								
	FAD								
TOTAL	TOPS								

TO RETURN TO THE MAIN MENU, STRIKE ANY KEY AND HIT RETURN

Figure 6. Stock Analysis by Style Screen

The second screen (Figure 7) was the Stock Analysis by Style, Size, Color Screen. In contrast to the Stock Analysis by Style screen, this screen allowed the student to analyze stock positions at the SKU level of detail. These two screens allowed the student to analyze summarized data for problem detection and then to focus attention on the particular SKUs in question.

The third screen (Figure 8), Open-to-Buy Analysis, provided the student with data indicating the funds available at retail for purchasing additional stock. This third information screen was provided to allow students to make ordering decisions within the confines of a budget. The decision was made to include each of these screens in the simulation to make the game as life-like as possible. With a near overabundance of information, the student would have to deliberately search for the information required to make reorder or price change decisions.

The final stage in the simulation development consisted of deciding how to allow the student to input decisions to alter sales and stock levels, how to derive demand, and how to simulate sales.

The stock order screen (Figure 4) was designed to allow the student to input reorder or price change decisions. This screen could be accessed from the main menu. After the student finished entering decisions, demand was calculated for each SKU and stock levels were adjusted accordingly.

The final demand figure for each SKU consisted of several factors. The demand equation is presented below:

Demand = f (Base Demand x Price Adjustor x Color Adjustor x Size Adjustor x Seasonal Trend Adjustor x A Random Factor)

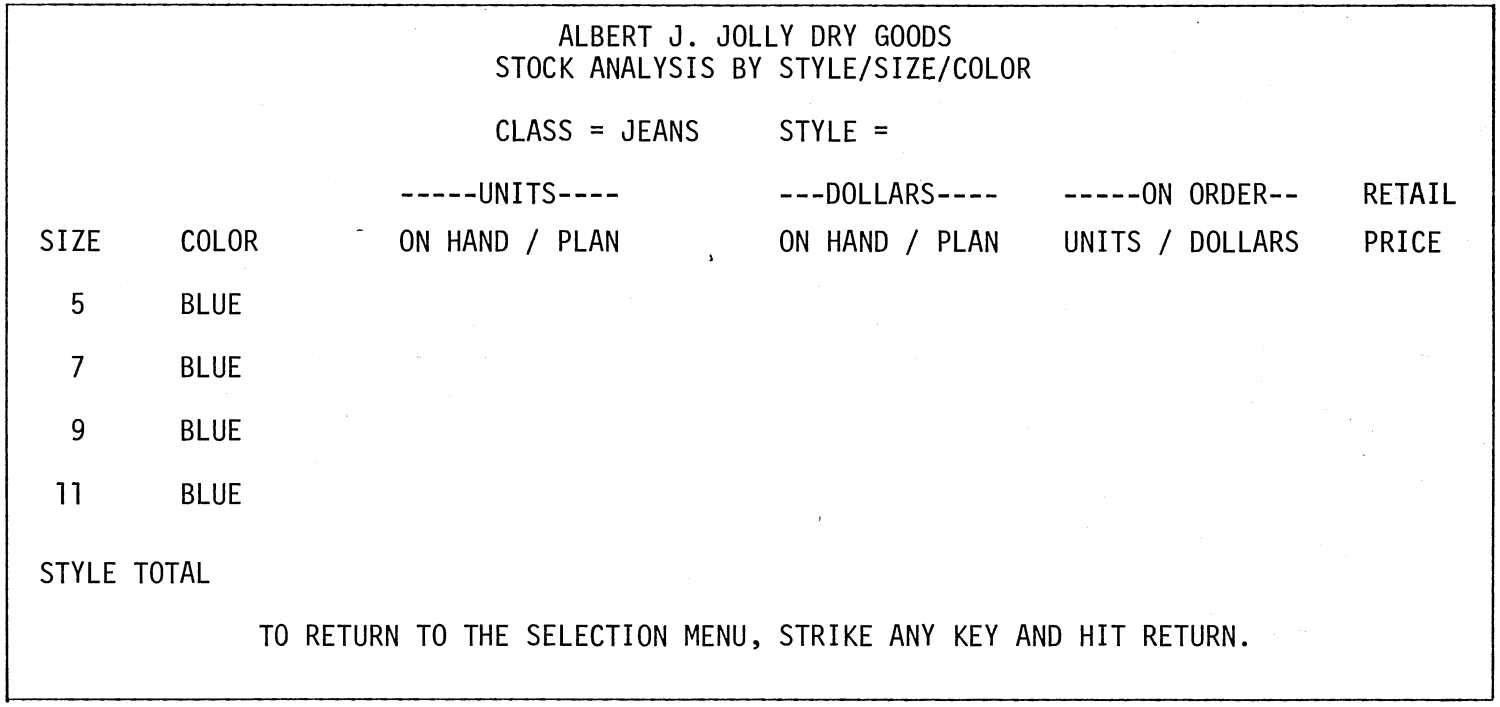


Figure 7. Stock Analysis by Style/Size/Color Screen

ALBERT J. JOLLY DRY GOODS
OPEN-TO-BUY STATUS

CLASS =

	PERIOD 1	PERIOD 2	PERIOD 3	PERIOD 4	PERIOD 5	PERIOD 6
PLANNED SALES						
+ REDUCTIONS						
+ PLANNED EOM						
----------	----	----	----	----	----	----
= MERCH NEEDED						
- PLANNED BOM	----	----	----	----	----	----
----------	----	----	----	----	----	----
=PLN PURCHASES						
- ON ORDER						
----------	----	----	----	----	----	----
= OPEN-TO-BUY						

TO RETURN TO THE SELECTION MENU, STRIKE ANY KEY AND HIT RETURN.

Figure 8. Open-to-Buy Analysis Screen

The base demand element was the average of the projected sales figures for the six-month season. The price adjustor was based on the size of the markdown. To determine the size of the markdown, a stock-keeping unit's current price was divided by the original suggested retail price, and the resultant figure was then subtracted from 1. If the size of the markdown was less than .1 (e.g., less than a 10 percent markdown), there was a 20 percent chance of getting a price adjustor that would help increase demand. Conversely, there was an 80 percent chance of getting a price adjustor that would cause average demand. If the size of the markdown was between .1 and .4, there was a 40 percent chance of getting a price adjustor that would help increase demand, and a 60 percent chance of getting a price adjustor that would cause average demand. Finally, if the size of the markdown was greater than .4 (e.g., a 40 percent or greater markdown), there was an 80 percent chance of getting a price adjustor that would help increase demand, and a 20 percent chance of getting a price adjustor that would cause average demand. The price adjustor was based on the premise that greater markdowns would cause greater unit sales.

The size adjustor figure was based on selling percentage information obtained during the follow-up interviews with retailers. A percentage was assigned to each SKU based on this data. For example, junior sportswear tops in size small accounted for 33 percent of sales in a particular style, while sizes medium and large accounted for 50 percent and 17 percent, respectively.

The color adjustors were arbitrarily chosen to create different selling ratios for the two color choices. Color 1 accounted for 40 percent of the sales of a style and color 2 accounted for 60 percent.

The seasonal trend adjustor was based on the projected sales figure for each style. The random factor was included to simulate random consumer preference. The random factor increased or decreased sales depending on the value of the generated random number.

After the demand figure was calculated, stock levels were adjusted accordingly. First, on-order units and dollars were added to on-hand units and dollars. Next, the demand figure was subtracted from the on-hand units and dollars. The on-hand figures were then updated to reflect the sales for the month. A stockout occurred if the demand figure was greater than the on-hand figure. After all the calculations were made, the program returned the user to the main menu screen.

CHAPTER V

EVALUATION OF THE COMPUTER SIMULATIONS

The third objective of the study was to evaluate the computer simulations in an instructional situation. A discussion of the development of the research design, selection of participants, development and evaluation of the experiment materials, administration of the experiment, and analysis of data for the experiment is included in this chapter.

Research Design

In order to evaluate the effectiveness of the computer simulations and to measure student attitudes toward the computer simulations, a pretest-posttest control group experimental design was used. This design was used to remove the effect of prior subject knowledge and to give the researcher greater control during the application of experimental treatments. This design also allowed the researcher to measure cognitive learning which was operationalized as the difference between the posttest score and the pretest score.

Students in the experimental groups were taught using a computer simulation and students in the control groups were taught using a case study. This alternative treatment approach was used to avoid having the results influenced by a possible Hawthorne effect. Thus, every student in each group was involved in performing a new task, and neither group received preferential instructor attention.

The two computer simulations were evaluated in separate experiments. A 2 X 2 factorial design was used for each experiment (Figure 9). The independent variable of interest was the method of teaching, either computer simulation or case study. A secondary independent variable was course; either clothing, textiles and merchandising (CTM), or marketing (MKTG). The dependent variables were scores on attitude scales and on pretests and posttests.

Selection of Participants

Participants in the evaluation phase of the study were students at Oklahoma State University enrolled in a clothing, textiles, and merchandising course, Profitable Merchandising Analysis, and students in two sections of a marketing course, Retailing Management, during the Spring 1983 semester. These courses were chosen because the topic areas covered by the computer simulations and the case studies were topics covered in the courses. A total of 92 students participated.

Attitude Scale Selection and Evaluation

The hypotheses of the study required that student attitudes toward the computer simulations and the case studies be measured. A literature search revealed a suitable attitude scale developed by Sherrell and Burns (1982). The scale was modified slightly and used in the study. The Sherrell and Burns scale was based on Greenblat's (1973) propositions of the pedagogical effects of simulations (Appendix H, p. 211). Items on the attitude scale were designed to measure attitudes related to motivation and interest, perceived learning, changes in the character of later course work, affective learning regarding the subject matter,

Course	Teaching Method	
	Case Study	Computer Simulation
CTM	N = 14	N = 14
MKTG	N = 33	N = 31

Six-Month Planning Experiment

Course	Teaching Method	
	Case Study	Computer Simulation
CTM	N = 13	N = 13
MKTG	N = 12	N = 15

Unit and Dollar Control Experiment

Figure 9. Diagrams of the Experiments

affective learning in general, changes in classroom structure and relations, and enjoyment. The attitude scales for the two experiments are presented in Appendix I, p. 215.

Development of Pretests and Posttests

A review of the literature revealed that no available tests were suitable to measure the specified behavioral objectives for each topic. Therefore, achievement pretests and posttests were designed for each topic.

The behavioral objectives for each topic guided the development of the pretest and posttest items. Specification tables were designed to insure that the test items reflected the stated objectives of each topic. Test items were generated and then scrutinized using the tables of specification. Items were then divided to form the pretests and the posttests.

A limited pilot test of each instrument was conducted to determine the clarity of the test instructions and questions. Six clothing, textiles, and merchandising students, the instructor of the marketing course, and two other persons pretested the instruments. Minor revisions to the test instructions were made as a result of the pretests. The pretests and posttests are presented in Appendix J, p. 220.

Development of the Case Studies

Case studies were used as the alternative treatment for the control groups in the study. The literature revealed no case studies that met all of the objectives of the unit and dollar control or six-month planning exercises. Therefore, case studies were designed to cover the same behavioral objectives as the computer simulations.

The development of the case studies followed a format similar to that of the computer simulations. First, a scenario was written to place the student in a job-like situation. Second, the information content was designed. Next, instructions detailing the students' responsibilities were written. Each case study was then critiqued by the researcher and three reviewers. The reviewers were a faculty member and a graduate student in clothing, textiles and merchandising and the instructor of the marketing course. The critiques served to identify areas that were unclear and to detect areas of questionable accuracy. The case study instructions were modified as indicated by the reviewers. Finally, the case studies were field tested by a group of undergraduate clothing, textiles, and merchandising students. Further refinements and enhancements were made as indicated by the field-tests. The case studies are presented in Appendix K, p. 237.

Administration of the Experiment

Prior to the experiment, a brief questionnaire was administered to the students in each course to determine if there were any differences between the students in regard to previous computer experience or computer confidence. If the students differed in these two areas it might confound experimental results. The decision was made that if differences in computer confidence or experience were found, students within each course would be randomly assigned to treatment groups (case study and computer simulation). This would cancel any effect that prior computer experience or confidence might have on the experiment results. If no differences were found between the students in the two courses, all of the students in a course would receive the same treatment.

The following items comprised the preliminary questionnaire:

1. Have you used a computer in your classes?
2. Have you used a home computer (e.g., Apple, TRS-80)?
3. Have you used an interactive computer system (e.g., TSO, HERO, or VAX)?
4. Have you done computer programming in a language such as BASIC, COBOL, or FORTRAN?
5. Can you program a computer?
6. Please circle the number that represents your degree of confidence in using a computer.

0	1	2	3	4	5
Not Confident					Very Confident

The first five items were scored dichotomously, yes or no. The answers were analyzed by testing for differences between proportions. A t-test was used to determine if there were significant differences between the students in each course on the confidence measure, item number six.

The percentage of students answering 'yes' to the computer experience items is presented in Table I. No significant differences were found between the proportions for items one, two or five. However, differences were found between the proportions for items three and four. Answers to item three 'Have you used an interactive computer system?' were significantly different between courses. Proportionately more of the students in the CTM course reported that they had used an interactive computer system than did the students in the MKTG course.

The responses of the CTM students to item four were also significantly different from those of the MKTG students. Proportionately more

TABLE I

COMPARISON OF THE PERCENTAGE OF STUDENTS IN EACH COURSE ANSWERING YES TO PRELIMINARY QUESTIONNAIRE ITEMS

	Course			
	CTM (N=30)	MKTG (N=48)	Z Value	Level of Significance
1. Have you used a computer in your classes?	90%	77%	1.43	NS
2. Have you used a home computer?	7%	12%	-0.80	NS
3. Have you used an interactive computer system	66%	34%	3.29	.01
4. Have you done computer programming in a language?	23%	76%	-4.77	.01
5. Can you program a computer?	17%	33%	-1.58	NS

of the MKTG students reported that they had previous computer programming experience than did the CTM students.

The mean confidence scores of the students in the CTM and MKTG course are presented in Table II. No significant difference was found between the CTM students and the students in the MKTG course.

In summary, some significant differences in computer experience were found between the students in the two courses. Based on the preliminary questionnaire results, it was decided that students should be randomly assigned to treatment groups within courses. This cancelled any effects that the differences might have had on the experiment results.

Groups were formed by randomly dividing each class in half. One group was taught a topic using a computer simulation and the other group was taught the same topic using a case study. A coin was tossed to determine which group would receive the experimental treatment first. The groups who were taught unit and dollar control using the computer simulation used the case study method for six-month planning.

Pretests were administered during the scheduled class session for each class. The case studies and simulation guides were distributed after the pretests were taken. Brief instructions were given for each exercise. The students were given one week to complete the six-month planning exercise and one and one-half weeks to complete the unit and dollar control exercise. After the time allotted to complete the exercise had expired, a posttest and attitude scale were administered to the participants. Instructor involvement during the experiment was that of a consultant.

TABLE II

COMPARISON OF CONFIDENCE SCORES OF STUDENTS IN THE CLOTHING, TEXTILES, MERCHANDISING AND MARKETING COURSES

Course	N	$\overline{X}$	t Value	Level of Significance
CTM	30	1.6	-1.51	NS
MKTG	58	2.0		

Analysis of Data

Pretests and posttests were scored. The difference between the posttest score and the pretest score was calculated to determine the amount of gain. This figure was used to represent cognitive learning attributable to the experimental treatment. The analysis of variance was used to determine whether there was a significant difference in cognitive learning between groups who were taught using a computer simulation and groups who were taught using a case study. A probability level of .10 was chosen as the level for rejecting the null hypotheses. Borg and Gall (1971, p. 287) noted that "in exploratory studies the .10 level may be used to reject the null hypothesis."

The analysis of variance was also used to determine whether there were significant differences between groups on each of the attitude scale items. In addition, the attitude scale items were grouped to form seven categories. Each category represented an attitude dimension the scale purported to measure. The scores of the items in each category were combined to form seven respective composite scores. For example, the scores for the seven items that measured motivation and interest were combined to form a composite score for the motivation and interest attitude dimension. The seven respective scores were used as dependent variables in the analysis of variance procedure to determine whether there were significant differences between teaching methods for each of the seven attitude categories. In a separate analysis, the attitude scale was factor analyzed to determine the various dimensions tapped by the measure.

A reliability coefficient was calculated for each pretest and posttest using the Kuder-Richardson formula. Cronbach's alpha

coefficient was calculated as a measure of reliability for the attitude scales.

Pretest and Posttest Reliability

A reliability coefficient for each of the pretests and posttests was calculated using the Kuder-Richardson Formula 20. Individual test items were analyzed to determine the internal consistency of the tests. The six-month planning pretest had a reliability coefficient of .39 and the posttest had a reliability coefficient of .55. The reliability coefficients for the unit and dollar control pretest and posttest were .82 and .75, respectively.

Attitude Scale Factor Analysis Results

The attitude scale was factor analyzed to determine if the factors obtained would match Greenblat's (1973) propositions regarding the pedagogical effects of simulations or the factors obtained by Sherrell and Burns (1982). Greenblat's (1973) propositions and the factors obtained by Sherrell and Burns (1982) are presented in Appendix H, p. 211.

Since Sherrell and Burns (1982) designed the scale around Greenblat's propositions, it was expected that six factors reflecting the propositions would emerge. Sherrell and Burns (1982) also included seven items which are best described as enjoyment variables. It was expected that a seventh factor would emerge to reflect an enjoyment dimension.

The Statistical Analysis System (SAS) factor analysis routine was used to factor analyze the attitude scale items. The SAS program

allowed the researcher to control the number of factors to be extracted. The researcher specified that a maximum of seven factors be extracted by the factor analysis. By specifying seven factors, Greenblat's six propositions and the enjoyment dimension could emerge as factors. Each factor was searched for items with factor loadings of .50 or greater. Items with factor loadings lower than .50 were deleted. Thus, each factor consisted only of items with factor loadings of .50 or greater.

Six-Month Planning Attitude Scale

The items on each factor and their factor loadings are shown in Table III. The seven factors account for 68 percent of the variation in the data. Factor six closely matched a factor obtained by Sherrell and Burns (1982). This factor can be described as a perceived knowledge factor as labeled by Sherrell and Burns. The reliability coefficient (Cronbach's alpha) for this factor was .66.

Factors one, two, and five, generally represent Greenblat's propositions regarding changes in classroom structure and relations, motivation and interest, and affective learning regarding the subject matter, respectively. The reliability coefficients for these factors were .66, .79, and .68.

The six items loading high on factor four seem to represent a dimension that could be labeled retail insight. The reliability coefficient for this factor was .70. Factor three was comprised of three items representing three of the expected attitude dimensions. Since the items on this factor were so diverse, the researcher did not attempt to label this factor. The reliability coefficient for this factor was .56. Only one item loaded high on factor seven and did not represent a distinct attitude dimension.

TABLE III

ATTITUDE SCALE ITEM FACTOR ANALYSIS FOR THE SIX-MONTH PLANNING EXPERIMENT

Factor	Factor Loading[a]
FACTOR 1 - Changes in Classroom Relations	
Exercises such as this one provide a relaxed, natural exchange between students and teachers	.58
The exercise increased my interest in the course	.54
I believe the exercise would lead me to asking better questions	.77
I believe the exercise would lead me to participate more in a class discussion on this topic	.77
Exercises such as this one reduce the necessity of the teacher to judge learning	.65
FACTOR 2 - Motivation	
Exercises such as this one help students perceive teachers in a more positive light	.59
The exercise increased my interest in learning in general	.67
The exercise increased my enthusiasm to learn in general	.69
The exercise increased my commitment to learn in general	.54
The exercise was enjoyable	.57
The exercise was fun	.65
The exercise helped me to increase my own self awareness	.59
An exercise such as this one provides greater freedom for students to explore ideas	.66
FACTOR 3	
The exercise was interesting	.57
The exercise took too long	.70
I learned a systematic and analytical approach to six month planning	.59
The exercise was too unstructured	.70
FACTOR 4 - Retail Insight	
The exercise changed my perspective on some part of retailing	.63
Exercises such as this one lead teachers to perceiving students more positively in general	.54
The exercise increased my insight into ways in which people who make retail store decisions see the world	.60
The exercise gave me insight into the pressures faced by those making six month planning decisions planning decisions	.52
The exercise helped me to better understand the structure of the everyday "real world"	.75
The exercise increased my sense of my personal abilities	.53
FACTOR 5 - Affective Learning Regarding the Subject Matter	
The exercise was involving	.50
I gained actual information from the exercise	.60
The exercise gave me insight into the pressures faced by those making six month planning decisions	.62
The exercise increased my awareness of the uncertainties faced by those involved in six month planning decisions	.71
The exercise helped me to understand and identify various elements in six month planning	.62
FACTOR 6 - Perceived Knowledge	
I learned the procedures of six month planning	.85
I learned the general principles involved in six month planning	.80
The exercise helped me to understand and identify various elements in six month planning	.53
I learned a systematic and analytical approach to six month planning	.75
FACTOR 7	
Exercises such as this one lead students to be more independent, thus changing student-teacher relationships	.75

[a]Loadings derived using varimax rotation

Overall, the reliability coefficients (Cronbach's alpha) for each of the factors were high. Further, five of the factors represented identifiable attitude dimensions, four of which had been identified in previous research. The high reliability coefficients and the identifiable attitude dimensions indicated that the scale had a high degree of construct validity.

Unit and Dollar Control Attitude Scale

The items on each factor and their factor loadings are shown in Table IV. The seven factors account for 72.5 percent of the variation in the data. Two of the factors, factor two and factor three, closely match factors obtained by Sherrell and Burns (1982). Factor two can be described as a perceived knowledge factor and factor three as a perceived benefits factor. These labels were also used by Sherrell and Burns to describe factors they obtained. Factors two and three also closely match Greenblat's propositions about affective learning regarding the subject matter and affective learning in general. The reliability coefficients (Cronbach's alpha) for the two factors were .73 and .75, respectively.

The other five factors presented in Table IV are not interpretable. Twenty-one attitude scale items with factor loadings of .50 or greater formed factor one. The reliability coefficient (Cronbach's alpha) was .92. The items loading high on this factor represented four of the propositions made by Greenblat (1973). Since the items on factor one were so diverse, the researcher did not attempt to label this factor. Factor five consisted of only one item and factors four, six, and seven consisted of only two items each. None of these last four factors

TABLE IV

ATTITUDE SCALE ITEM FACTOR ANALYSIS FOR THE UNIT AND DOLLAR CONTROL EXPERIMENT

Factor	Factor Loading[a]
FACTOR 1	
The exercise was interesting	.73
I gained better decision making skills	.81
Exercises such as this one lead students to be more independent, thus changing student-teacher relationships	.56
The exercise helped me to learn "winning strategies"	.78
Exercises such as this one help students perceive teachers in a more positive light	.69
The exercise increased my interest in the topic	.78
I believe the exercise will make other work in the course more meaningful	.82
Exercises such as this one provide a relaxed, natural exchange between students and teachers	.73
The exercise increased my interest in the course	.81
I believe the exercise would lead me to asking better questions	.56
The exercise increased my interest in learning in general	.60
I believe the exercise would lead me to participate more in a class discussion on this topic	.71
The exercise increased my enthusiasm to learn in general	.75
The exercise increased my commitment to learn in general	.72
Exercises such as this one lead teachers to perceiving students more positively in general	.68
I gained actual information from the exercise	.73
The exercise was enjoyable	.81
The exercise was fun	.63
I learned the general principles involved in unit and dollar control	.57
I learned a systematic and analytical approach to unit and dollar control	.68
An exercise such as this one promotes better student-teacher relationships	.67
FACTOR 2 - Perceived Knowledge	
The exercise increased my appreciation for those problems involves in unit and dollar control	.66
The exercise increased my insight into the ways in which people who make retail store decisions see the world	.81
The exercise gave me insight into the pressures faced by those making unit and dollar control decisions	.62
The exercise helped me to better understand the structure of the everyday "real world"	.63
The exercise increased my awareness of the difficulties in general of those involved with unit and dollar control	.71
The exercise helped me to understand and identify various elements in unit and dollar control	.72
FACTOR 3 - Perceived Benefits	
Exercises such as this one help students perceive teachers in a more positive light	.51
The exercise helped me to increase my own self awareness	.75
The exercise increased my sense of my personal abilities	.65
The exercise increased my awareness of my own potential	.76
An exercise such as this one promotes better student-teacher relationships	.51
FACTOR 4	
The exercise was involving	.81
The exercise increased my awareness of the uncertainties faced by those involved in unit and dollar control	.61
FACTOR 5	
The exercise took too long	.82
FACTOR 6	
I learned the procedures of unit and dollar control	-.52
The exercise made me feel uncomfortable	.84
FACTOR 7	
The exercise was too low-level	.82
The exercise was too unstructured	.84

[a]Loadings derived using varimax rotation

represented Greenblat's proposed dimensions well. Aaker (1981, p. 166) noted that "smaller factors will represent random variation and should be expected to be uninterpretable." The factors did not appear to represent interpretable attitude dimensions. The reliability coefficients for factors four, six, and seven were .33, .26, and .22, respectively. Nunnally (1967) pointed out that reliabilities of .50 or .60 are needed even in the early stages of research.

Three of the factors had high reliability coefficients and two of the factors represented distinct attitude dimensions. On the other hand, five of the factors were not interpretable and three had low reliability coefficients. In summary, the factor analysis did not indicate that the scale had high construct validity.

Comparison of Factor Analysis Results

The factor analysis results from the two experiments were dissimilar. The six-month planning attitude scale revealed five identifiable factors with high degrees of reliability. On the other hand, the unit and dollar control attitude scale revealed only two identifiable factors with high degrees of reliability. Only one attitude dimension, perceived knowledge, emerged as a factor in both experiments.

No definitive reason can be given for these differences. However, the lack of similarity might be attributed to the fact that the number of participants was small in comparison to the number of items on the attitude scale. Further, there were fewer participants in the unit and dollar control experiment.

The attitude scales used in this study and the Sherrell and Burns (1982) study were based on Greenblat's (1973) theoretical propositions

concerning the effects of simulations. The factors obtained from the analysis of the six-month planning and the unit and dollar control attitude scales did not correspond to those obtained by Sherrell and Burns (Appendix H, p. 211). Further, a majority of the factors were uninterpretable. Therefore, additional analysis of the attitude scales was structured according to Greenblat's (1973) propositions as operationalized by Sherrell and Burns (1982). This procedure was used instead of an analysis of the groupings produced by the factor analyses.

Six-Month Planning Experiment Results

The six-month planning experiment results are presented in two sections. The first section includes the results of the pretest and posttest which were designed to measure cognitive learning. The second section includes the results of the attitude scale which was designed to measure student attitudes toward the case study and the computer simulation.

Cognitive Learning

The dependent measure for hypothesis 1-a was cognitive learning, operationalized as the difference between the posttest score and the pretest score. The analysis of variance indicated that there was no significant difference in the degree of cognitive learning between students who completed a case study and students who completed a computer simulation on six-month planning. Therefore, hypothesis 1-a could not be rejected.

A comparison of the pretest, posttest, and the cognitive learning scores are presented in Table V. The pretest means were significantly

TABLE V

COMPARISON OF PRETEST, POSTTEST, AND COGNITIVE LEARNING SCORES FOR THE SIX-MONTH PLANNING EXPERIMENT

	Course				Teaching Method			
Variable	CTM Mean (N=27)	MKTG Mean (N=46)	F Value	Level of Significance	Case Study Mean (N=36)	Computer Simulation Mean (N=37)	F Value	Level of Significance
Pretest	51.5	42.4	9.49	.01	43.6	46.2	0.88	NS
Posttest	55.6	54.5	0.10	NS	54.9	54.9	0.00	NS
Cognitive Learning	4.1	12.1	3.79	NS	11.3	8.7	0.63	NS

different for the CTM and MKTG courses. The CTM students had a higher mean score (51.5) on the pretest than did the MKTG students (42.4). One possible explanation for this difference is that the CTM students may have covered this topic briefly in previous classes.

A significant interaction ($F=4.38$, $p<.05$) between teaching method and course was found for the posttest means. A graph plotting the interaction is presented in Figure 10. The performance of the MKTG students was about the same regardless of teaching method, but the CTM students who completed the case study scored higher on the posttest. Case studies and computer simulations are frequently used in the MKTG courses, and this familiarity may have led the MKTG students to exhibit a similar performance for both teaching methods. On the other hand, the CTM students had encountered some exposure to the case study method and little, if any exposure to the computer simulation method. This lack of familiarity may have caused the students in the computer simulation group to concentrate more on the actual use of the computer simulation and less on the simulation content.

Attitude Scale

The attitude scale was designed to measure seven attitude dimensions. Results pertaining to each of the seven dimensions will be discussed.

Motivation and Interest. Seven items on the attitude scale were designed to measure student attitudes related to motivation and interest. An analysis of variance was conducted to determine if the means for the two teaching methods were significantly different. A comparison of the seven items and their level of statistical significance is presented

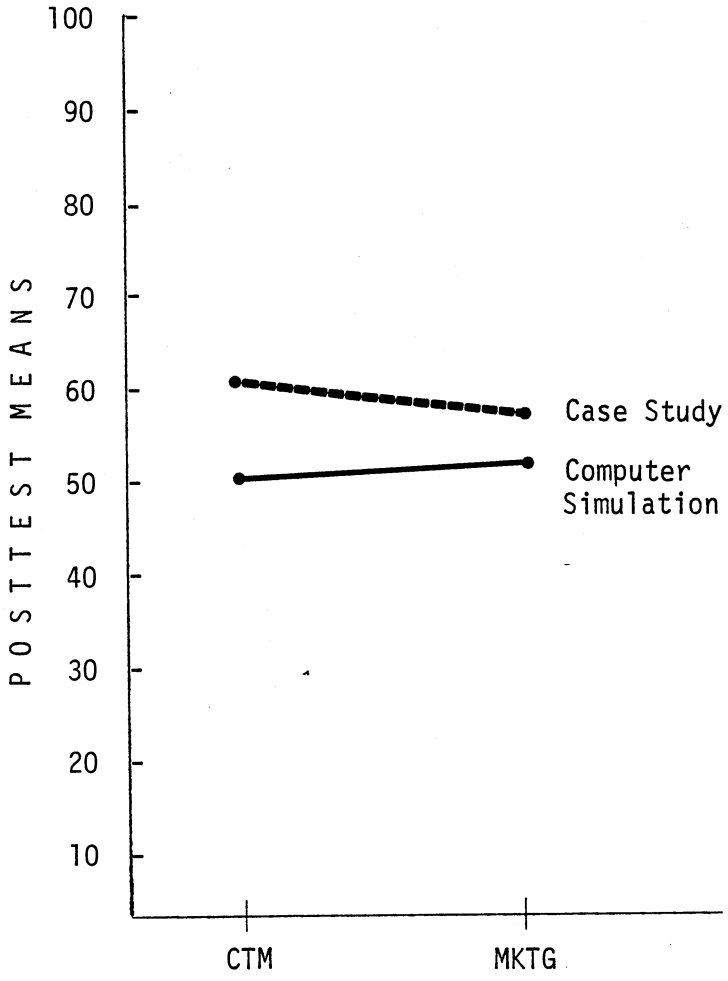


Figure 10. Interaction Pattern of Posttest Means for the Six-Month Planning Experiment

in Table VI. There were no significant main effects for teaching method for the seven items. Further, there was no significant main effect for teaching method when the composite score for motivation and interest was the dependent variable (see Table XXIII, Appendix L, p. 248). Based on the analysis of variance results, hypothesis 2-a could not be rejected. Thus, teaching method did not appear to influence student attitudes related to motivation and interest.

The analysis of variance did reveal a significant main effect ($p<.10$) for course for item three. Students in the MKTG courses indicated stronger agreement (3.2) that the exercises increased their interest in six-month planning than did the CTM students (2.7). One explanation for this finding might be that the MKTG students were less familiar with the topic of six-month planning, and the newness of the topic may have increased their interest.

The analysis of variance also revealed a significant interaction ($F=3.95$, $p<.05$) between teaching method and course for the item 'the exercise was interesting' (Figure 11). The MKTG students rated both teaching methods similarly, while the CTM students rated the case study higher than the computer simulation. A possible explanation for this result is that the MKTG students were equally familiar with the two teaching methods, but the two methods were relatively new to the CTM students. The CTM students who completed the case study may have found this teaching method to be more similar to exercises they had completed before, and may have found the slight variation interesting. Although a significant main effect and an interaction occurred for items three and one, respectively, the composite score did not produce any significant differences (see Table XXIII, Appendix L, p. 248).

TABLE VI

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING ATTITUDES RELATED TO MOTIVATION AND INTEREST FOR THE SIX-MONTH PLANNING EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=27)	MKTG Mean (N=46)	F Value	Level of Significance	Case Study Mean (N=36)	Computer Simulation Mean (N=37)	F Value	Level of Significance
The exercise:								
1. was interesting	3.6	3.1	0.11	NS	3.2	3.0	1.02	NS
2. was involving	3.1	3.5	2.27	NS	3.4	3.4	0.04	NS
3. increased my interest in the topic	2.7	3.2	3.05	.10	3.0	3.0	0.08	NS
4. increased my interest in the course	2.8	2.8	0.00	NS	2.8	2.8	0.05	NS
5. increased my interest in learning in general	2.6	2.9	2.34	NS	2.8	2.9	0.22	NS
6. increased my enthusiasm to learn in general	2.6	2.8	0.60	NS	2.8	2.7	0.39	NS
7. increased my commitment to learn in general	2.4	2.6	0.51	NS	2.7	2.4	1.16	NS

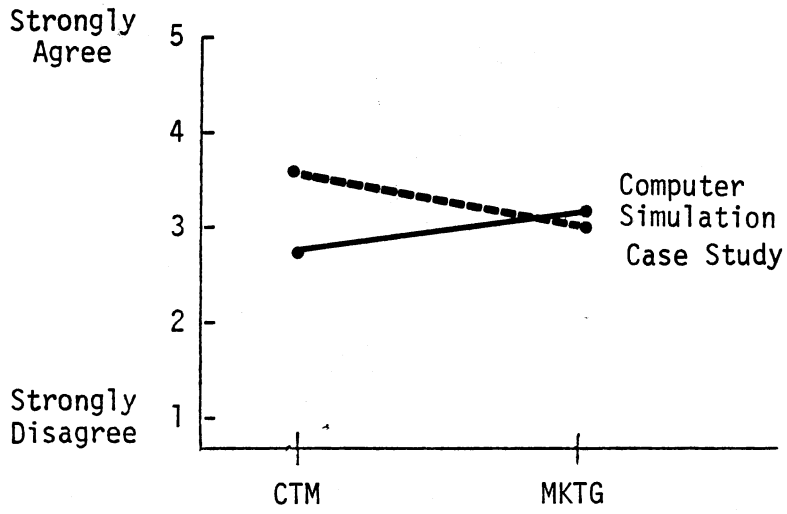


Figure 11. Mean Ratings for 'The exercise was interesting'

Perceived Learning. An analysis of variance was performed on the eight attitude scale items designed to measure perceived learning. Statistically significant differences in perceived learning were found between students who completed a case study and students who completed a computer simulation on six-month planning.

Not all of the items designed to tap this attitude dimension produced significantly different means between the two teaching methods. As shown in Table VII, items three, four, five, ($p<.01$) and seven ($p<.01$) produced significant main effects for teaching method. For each of those items, the case study means were higher than the computer simulation means. The students who completed the case study indicated stronger agreement that they gained actual information from the exercise, that they learned the procedures and general principles involved in six-month planning, and that the exercise helped them to understand and identify various elements in six-month planning than did the students who completed the computer simulation. The analysis of variance of the composite score for this attitude dimension produced a similar result. A significant main effect ($p<.05$) for teaching method was revealed (see Table XXIII in Appendix L, p. 248). Again, the case study mean (3.6) was higher than the computer simulation mean (3.2). A possible explanation is that students who completed the case study were required to make more calculations than were the students who completed the computer simulation, since the computer made the actual calculations. This detailed work may have made the case study students more certain that they learned the principles and procedures and that they could understand and identify the elements of six-month planning.

TABLE VII

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING PERCEIVED LEARNING FOR THE SIX-MONTH PLANNING EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=27)	MKTG Mean (N=46)	F Value	Level of Significance	Case Study Mean (N=36)	Computer Simulation Mean (N=37)	F Value	Level of Significance
1. Gained decision-making skills	2.7	2.6	0.11	NS	2.7	2.7	0.00	NS
2. Helped learn "winning strategies"	2.5	2.7	0.62	NS	2.6	2.7	0.02	NS
3. Gained actual information	3.1	3.2	0.32	NS	3.5	2.8	8.87	.01
4. Learned the procedures	3.6	2.9	7.72	.01	3.6	2.7	10.12	.01
5. Learned the general principles involved	3.4	3.1	1.83	NS	3.7	2.8	13.33	.01
6. Helped to understand structure of "real world"	2.3	2.9	5.15	.05	2.7	2.6	0.25	NS
7. Helped to understand and identify elements in six-month planning	3.4	3.3	0.24	NS	3.6	3.1	3.53	.01
8. Learned systematic and analytical	3.1	2.7	2.93	.10	3.0	2.7	1.83	NS

Based on the analysis of variance results, hypothesis 2-b was rejected. Significant differences were found for perceived learning between students who completed the case study and students who completed the computer simulation on six-month planning.

Items four, six, and eight produced significant main effects ($p<.01$, $p<.05$, $p<.10$) for course. The CTM students indicated stronger agreement (3.6) that they learned the procedures of six-month planning than did the MKTG students (2.9). One explanation is that the exercises reinforced a concept that the CTM students had already studied, whereas the concept appeared to be newer to the MKTG students. In regard to item six, students in the MKTG course indicated stronger agreement (2.9) that the exercise helped them to better understand the structure of the everyday 'real world' than did the CTM students (2.3). A possible explanation may be that the MKTG students were less familiar with retail operations and gained a better understanding by participating in the exercise. A final difference between the students in the two courses was that the CTM students indicated stronger agreement (3.1) that they learned a systematic and analytical approach to six-month planning than did the MKTG students (2.7). Although three individual items produced significant differences for course, the composite score did not produce a significant main effect for course (see Table XXIII, Appendix L, p. 248).

Items three, five, and seven produced significant interactions between teaching method and course. A graph plotting the interaction ($F=3.66$, $p<.10$) for item three is presented in Figure 12. The MKTG students rated the two exercises similarly, but the CTM students who completed the case study indicated stronger agreement that they gained

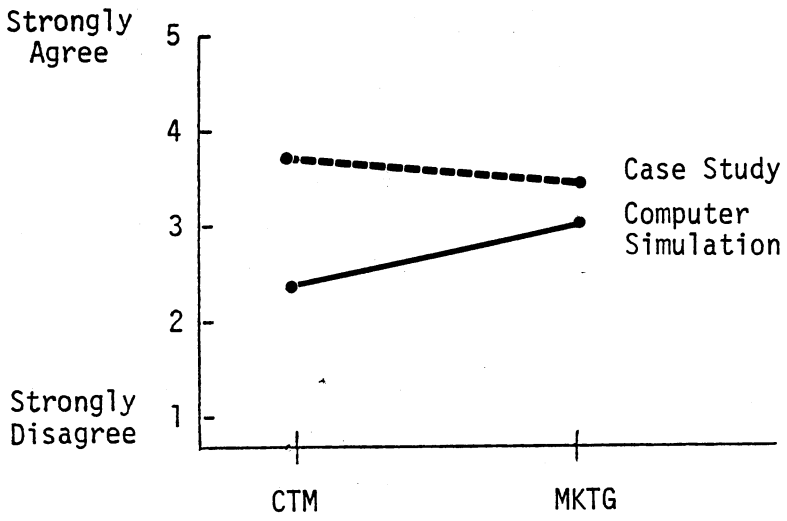


Figure 12. Mean Ratings for 'I gained actual information from the exercise'

actual information from the exercise than did the CTM students who completed the computer simulation. A graph plotting the interaction ($F=7.12$, $p<.05$) between teaching method and course for item five is presented in Figure 13. The MKTG students tended to answer item five similarly, regardless of which treatment they received. The CTM students who received the case study indicated stronger agreement that they learned the general principles involved in six-month planning than did the CTM students who completed the computer simulation. A graph plotting the interaction ($F=6.76$, $p<.05$) for item seven is presented in Figure 14. As shown on the graph, the MKTG students rated this item similarly for the two teaching methods. The CTM students who completed the case study indicated stronger agreement that the exercise helped them to understand and identify various elements in six-month planning.

The three interactions followed a similar pattern. The MKTG students rated both exercises similarly, while the CTM students rated the case study higher than the computer simulation. Further, the composite score produced a significant interaction ($F=4.45$, $p<.05$) between teaching method and course (Figure 15). Again, there are two possible explanations for this pattern. One explanation is that the MKTG students were more familiar with both teaching methods and rated them similarly. The CTM students may have found the case study both new and simpler than the computer simulation and therefore may have rated it higher. A second explanation is that the CTM students who completed the case study may have derived benefits from performing the detailed calculations, and therefore may have been more certain that they gained knowledge from the exercise.

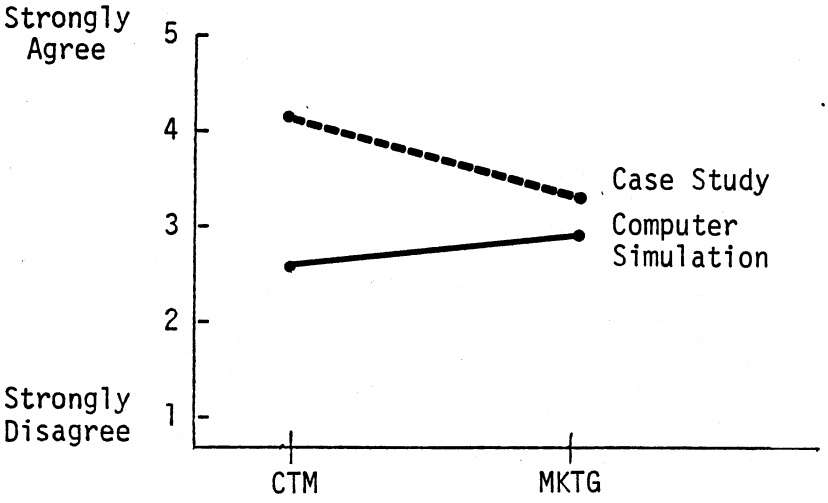


Figure 13. Mean Ratings for 'I learned the general principles involved in six-month planning'

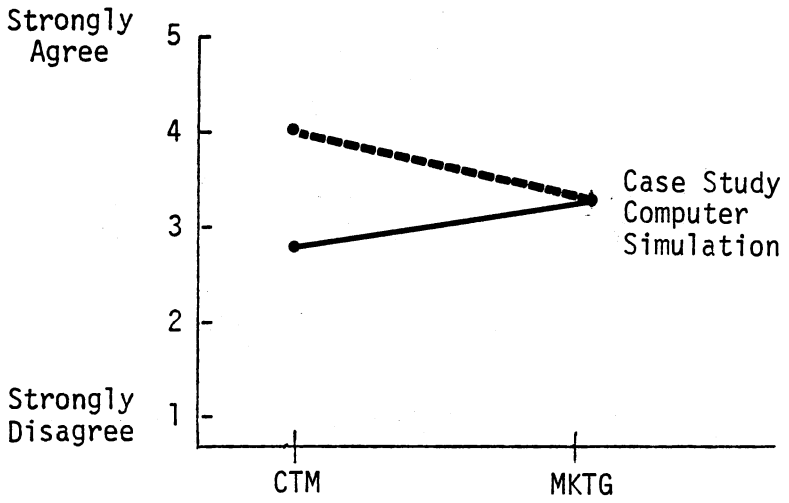


Figure 14. Mean Ratings for 'The exercise helped me to understand and identify various elements in six-month planning'

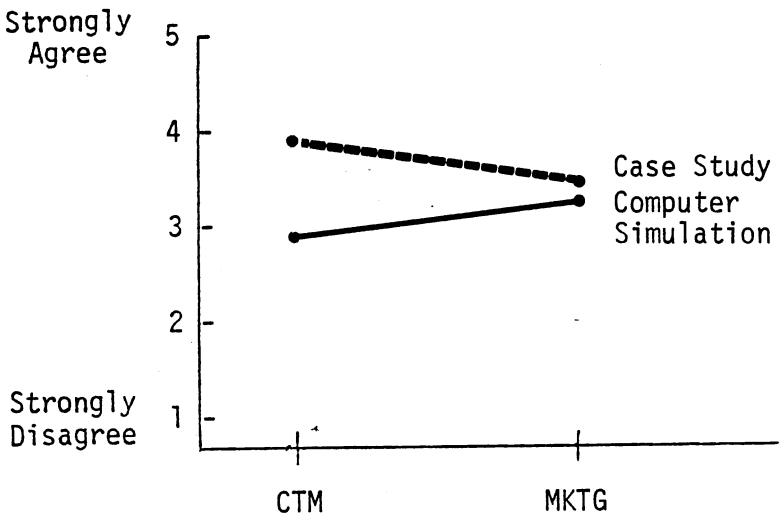


Figure 15. Interaction Pattern for the Perceived Learning Composite Score

Changes in the Character of Later Course Work. A comparison of the attitude scale items measuring attitudes related to changes in the character of later course work is presented in Table VIII. The analysis of variance revealed no significant main effects for teaching method or for course. Further, the composite score for this attitude dimension did not produce a significant main effect for either teaching method or course (see Table XXIII, Appendix L, p. 248). Thus, hypothesis 2-c could not be rejected. There was no significant difference in mean ratings between teaching methods on items that measured attitudes related to changes in the character of later course work.

A significant interaction ($F=5.23$, $p<.05$) did occur between teaching method and course for item one. A graph of this interaction is presented in Figure 16. As shown on the graph, the MKTG students rated the item similarly regardless of teaching method. The CTM students who completed the case study indicated stronger agreement that the exercise would make other work in the course more meaningful than did the other students. The interaction pattern was similar to the patterns found for the perceived learning items. Further, the composite score produced a significant interaction ($F=3.16$, $p<.10$) with a pattern similar to that of item one (Figure 17). Although no definitive explanation can be given for this result, it adds to an emerging pattern that the CTM students who completed the case study responded more favorably to the case study than did the other students.

Affective Learning Regarding the Subject Matter. Six items on the attitude scale were designed to measure affective learning regarding the subject matter. A comparison of the six items is presented in Table IX. The analysis of variance revealed a significant main effect ($p<.01$) for

TABLE VIII

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING ATTITUDES RELATED TO CHANGES IN THE CHARACTER OF LATER COURSE WORK FOR THE SIX-MONTH PLANNING EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=27)	MKTG Mean (N=46)	F Value	Level of Significance	Case Study Mean (N=36)	Computer Simulation Mean (N=37)	F Value	Level of Significance
I believe this exercise will:								
1. make other work in the course more meaningful	3.1	2.7	1.81	NS	2.9	2.8	0.22	NS
2. lead me to asking better questions	2.9	3.0	0.18	NS	3.0	3.0	0.05	NS
3. lead me to participate more in a class discussion on this topic	2.9	3.0	0.36	NS	3.0	3.0	0.01	NS

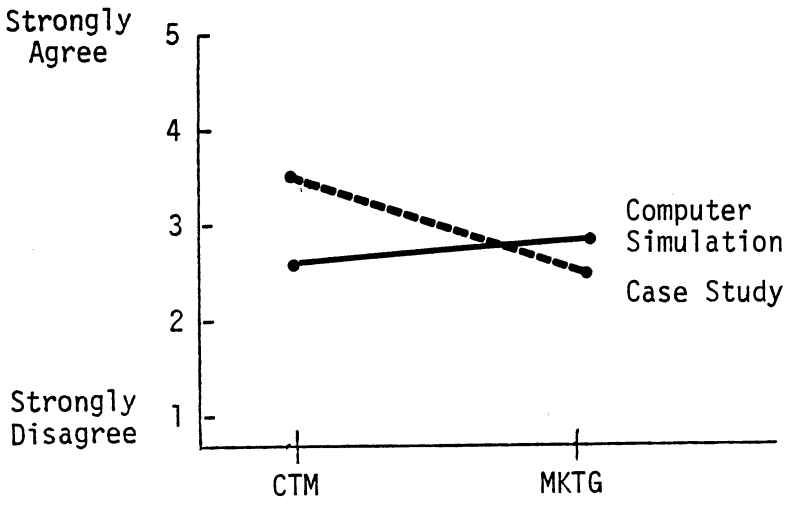


Figure 16. Mean Rating for 'I believe the exercise will make other work in the course more meaningful'

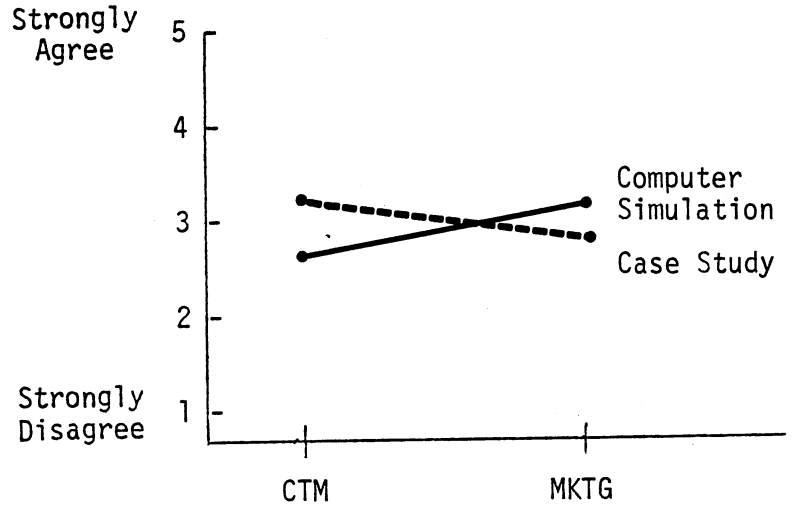


Figure 17. Interaction Pattern for the Composite Score Representing Changes in the Character of Later Course Work

TABLE IX

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING AFFECTIVE LEARNING REGARDING THE SUBJECT MATTER FOR THE SIX-MONTH PLANNING EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=27)	MKTG Mean (N=46)	F Value	Level of Significance	Case Study Mean (N=36)	Computer Simulation Mean (N=37)	F Value	Level of Significance
The exercise:								
1. changed perspective on some part of retailing	2.6	3.4	8.91	.01	3.0	3.2	0.82	NS
2. increased appreciation for those problems involved in six-month planning	3.1	3.1	0.01	NS	3.4	2.8	7.28	.01
3. increased insight into the ways in which people who make retail store decisions see the world	2.9	3.1	0.76	NS	3.2	2.8	2.60	NS
4. gave insight into the pressures faced by those making six-month planning decisions	2.9	3.2	2.41	NS	3.3	3.0	1.75	NS
5. increased awareness of the uncertainties faced by those involved in six-month planning decisions	3.2	3.1	0.24	NS	3.3	3.0	2.50	NS
6. increased awareness of the difficulties in general of those involved with six-month planning	3.0	3.2	0.60	NS	3.3	3.1	0.84	NS

teaching method for item two. Students who completed the case study indicated stronger agreement (3.4) that the exercise increased their appreciation for the problems involved in six-month planning than did the students who completed the computer simulation (2.8). The analysis of variance of the composite score produced a similar result. A significant main effect ($p<.10$) for teaching method was revealed (see Table XXIII, Appendix L, p. 248). The case study mean (3.3) was higher than the computer simulation mean (3.0). Again, the students who completed the case study were required to make more calculations, and this additional work may have caused the increased appreciation.

Based on the analysis of variance results, hypothesis 2-d was rejected. Significant differences were found for affective learning regarding the subject matter between students who completed the case study and students who completed the computer simulation on six-month planning.

A significant main effect ($p<.01$) was indicated for course for item one. Students in the MKTG course indicated stronger agreement (3.4) that the exercise changed their perspective on some part of retailing than did the CTM students (2.6). As mentioned previously, the MKTG students appeared to be less familiar with the topic and may have gained greater insight into this part of retailing by participating in the exercise. No significant differences were found for course when the composite score for this attitude dimension was used as a dependent variable (see Table XXIII, Appendix L, p. 248).

Items three ($F=3.32$, $p<.10$) and five ($F=3.09$, $p<.10$) produced significant interactions between teaching method and course. A graph plotting the interaction for item three is presented in Figure 18.

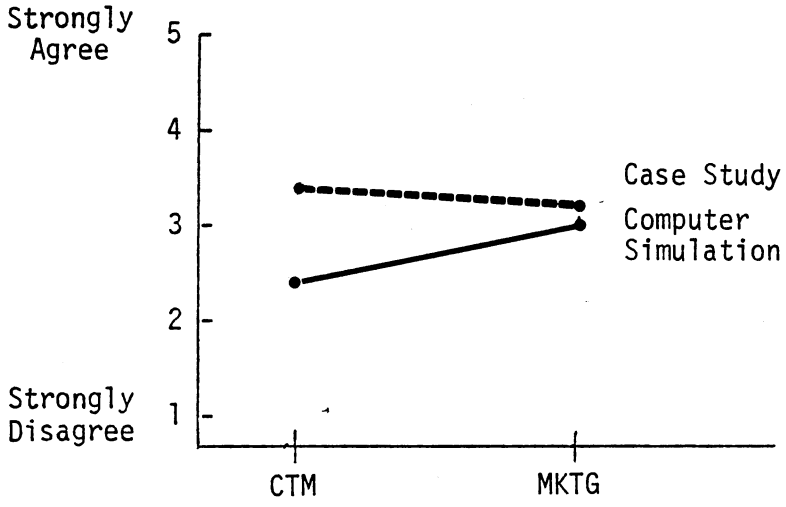


Figure 18. Mean Ratings for 'The exercise increased my insight into the ways in which people who make retail store decisions see the world'

The MKTG students rated this item similarly regardless of the type of exercise they completed. However, the CTM students rated this item differently based on the exercise they completed. The CTM students who completed the case study indicated stronger agreement than did the MKTG students that they gained greater insight into the ways in which people who make retail store decisions see the world. A graph plotting the interaction for item five is presented in Figure 19. Again, the MKTG students rated the item similarly regardless of the teaching method. On the other hand, the CTM students who completed the case study indicated stronger agreement that the exercise increased their awareness of the uncertainties faced by those involved in six-month planning decisions.

The interactions follow the pattern of previous interactions in which the MKTG students rated the item similarly regardless of teaching method, and the CTM students who completed the case study rated the item higher. An explanation for these results may be that the MKTG students were familiar with both of the teaching methods and rated the items similarly. The CTM students who completed the computer simulation may have found the exercise too new and different, and therefore rated the items lower. The composite score for this attitude dimension did not produce a significant interaction between teaching method and course.

Affective Learning in General. A comparison of the three items measuring affective learning in general is presented in Table X. The analysis of variance revealed a significant main effect ($p<.05$) for teaching method for item three. The students who completed the case study indicated stronger agreement (3.1) that the exercise increased their awareness of their own potential than did the students who

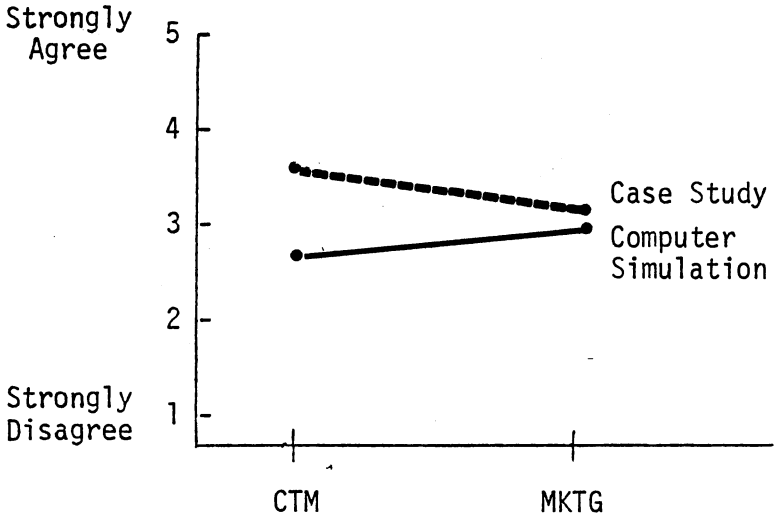


Figure 19. Mean Ratings for 'The exercise increased my awareness of the uncertainties faced by those involved in six-month planning'

TABLE X

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING AFFECTIVE LEARNING IN GENERAL FOR THE SIX-MONTH PLANNING EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=27)	MKTG Mean (N=46)	F Value	Level of Significance	Case Study Mean (N=36)	Computer Simulation Mean (N=37)	F Value	Level of Significance
The exercise:								
1. helped me to increase my own self-awareness	2.6	2.7	0.17	NS	2.7	2.7	0.01	NS
2. increased my sense of my personal abilities	2.8	2.7	0.06	NS	2.9	2.6	1.03	NS
3. increased my awareness of my own potential	3.0	2.8	0.71	NS	3.1	2.6	4.64	.05

completed the computer simulation (2.6). The students who completed the case study had to make more calculations than did the students who completed the computer simulation. The detailed work may have made the case study students feel confident in their ability to do the work and thus, more aware of their own potential.

The analysis of variance results provide little evidence to support rejection of the null hypothesis. Therefore, hypothesis 2-e could not be rejected.

No other item means were significantly different. Further, the analysis of variance did not reveal any significant interactions between teaching method and course. The composite score for affective learning in general did not produce significant main effects for teaching method or course, nor did it produce an interaction between the two (see Table XXIII, Appendix L, p. 248).

Changes in Classroom Structure and Relations. Seven items on the attitude scale were designed to measure attitudes related to changes in classroom structure and relations. A comparison of the seven items is presented in Table XI. An analysis of variance was conducted to determine if there were any significant differences in the means for the two teaching methods. One significant main effect ($p<.05$) was found for teaching method. The students who completed the case study indicated stronger agreement (3.3) that the exercise would lead them to be more independent than did the students who completed the computer simulation (2.7). The case study may have fostered a sense of independence for two reasons. First, the case was transportable and could be completed outside the confines of a classroom building. Second, fewer

TABLE XI

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING ATTITUDES RELATED TO CHANGES IN CLASSROOM STRUCTURE AND RELATIONS FOR THE SIX-MONTH PLANNING EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=27)	MKTG Mean (N=46)	F Value	Level of Significance	Case Study Mean (N=36)	Computer Simulation Mean (N=37)	F Value	Level of Significance
Exercises such as this one:								
1. lead students to be more independent, thus changing student-teacher relationships	2.9	3.0	0.32	NS	3.3	2.7	5.75	.05
2. help students perceive teachers in a more positive light	2.6	2.6	0.03	NS	2.7	2.5	0.28	NS
3. provide a relaxed, natural exchange between students and teachers	2.7	2.8	0.06	NS	2.9	2.6	1.20	NS
4. reduce the necessity of the teacher to judge learning	2.3	2.7	4.25	.05	2.5	2.6	0.01	NS
5. lead teachers to perceiving students more positively in general	2.5	2.7	0.89	NS	2.8	2.5	1.58	NS
6. promotes better student-teacher relationships	2.4	2.6	1.05	NS	2.7	2.4	1.75	NS
7. provides greater freedom for students to explore ideas	2.9	3.2	2.34	NS	3.1	3.1	0.00	NS

instructions were needed for the case study than for the computer simulation.

Although one item produced a significant main effect for teaching method, the composite score for this attitude dimension did not. Based on the analysis of variance results, hypothesis 2-f could not be rejected. There was no difference in mean ratings between students who completed the case study and students who completed the computer simulation on items measuring attitudes related to changes in classroom structure and relations.

A significant difference ($p<.05$) occurred for item four between the MKTG and CTM courses. The MKTG students indicated stronger agreement (2.7) that the exercises would reduce the necessity of the teacher to judge learning than did the CTM students (2.3). No significant main effect was found for course for the composite score (see Table XXIII, Appendix L, p. 248).

A significant interaction ($F=8.61$, $p<.01$) between teaching method and course was found for item six. A graph plotting the interaction is presented in Figure 20. As shown on the graph, the MKTG students rated the item similarly regardless of the type of exercise they completed. The CTM students who completed the case study, however, indicated stronger agreement that the exercise would promote better student-teacher relationships than did the CTM students who completed the computer simulation. The pattern of this interaction is consistent with that of previous interactions. The MKTG students rated the item similarly regardless of teaching method, while the CTM students who completed the case study rated the item higher. The composite score did not produce a significant interaction between teaching method and course.

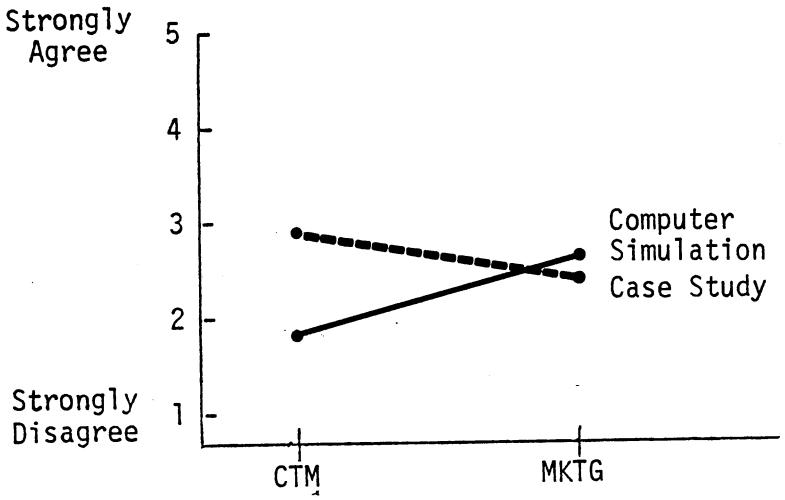


Figure 20. Mean Ratings for 'An exercise such as this one promotes better student-teacher relationships'

Enjoyment. Attitudes related to enjoyment were measured by seven attitude scale items. The analysis of variance indicated that none of the seven items produced significant main effects for teaching method. Further, the composite score for enjoyment did not produce a significant main effect for teaching method (see Table XXIII, Appendix L, p. 248).

Based on the analysis of variance results, hypothesis 2-g could not be rejected. There was no significant difference in the mean ratings of the enjoyment items between the case study and the computer simulation.

A comparison of the seven items measuring attitudes related to enjoyment is presented in Table XII. Items three, four, five and seven produced significant main effects for course. For each of these items, the MKTG course means were lower than the CTM course means. The students in the MKTG course indicated that the exercises made them feel uncomfortable, took too long, were boring and were too unstructured. A significant main effect ($p<.01$) for course was found for the enjoyment composite score (see Table XXIII, Appendix L, p. 248). Again, the MKTG course mean was lower (3.0) than the CTM course mean (3.5). An explanation for these results might be that the CTM students were stimulated by the introduction of new types of class assignments and therefore gave higher ratings to the enjoyment variables.

Items one, two, three, and five produced significant interactions between teaching method and course. A graph of the interaction ($F=8.60$, $p<.05$) for item one is presented in Figure 21. The CTM students who completed the case study indicated stronger agreement that the exercise was enjoyable than did the MKTG students who completed the case study.

TABLE XII

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING ATTITUDES RELATED TO ENJOYMENT FOR THE SIX-MONTH PLANNING EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=27)	MKTG Mean (N=46)	F Value	Level of Significance	Case Study Mean (N=36)	Computer Simulation Mean (N=37)	F Value	Level of Significance
The exercise:								
1. was enjoyable	3.0	2.9	0.30	NS	2.8	3.0	0.29	NS
2. was fun	2.9	2.7	0.27	NS	2.7	2.9	0.28	NS
3. made me feel uncomfortable	3.7	3.0	6.35	.05	3.7	3.0	0.56	NS
4. took too long	3.8	3.0	8.60	.01	3.5	3.1	1.82	NS
5. was boring	3.7	3.1	4.01	.05	3.2	3.4	0.51	NS
6. was too low-level	3.6	3.4	1.00	NS	3.5	3.5	0.00	NS
7. was too unstructured	4.0	3.0	14.51	.01	3.3	3.5	0.65	NS

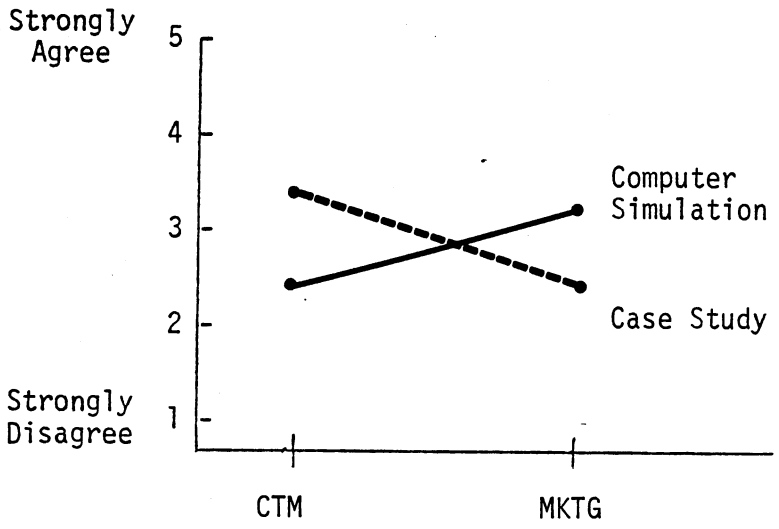


Figure 21. Mean Ratings for 'The exercise was enjoyable'

On the other hand, the MKTG students who completed the computer simulation indicated stronger agreement that the exercise was enjoyable than did the CTM students who completed the computer simulation.

A graph of the interaction ($F=3.43$, $p<.10$) for item two is presented in Figure 22. The CTM students who completed the case study indicated stronger agreement that the exercise was fun than did the MKTG students who completed the case study. Conversely, the MKTG students who completed the computer simulation indicated stronger agreement that the exercise was fun than did the CTM students who completed the computer simulation.

A graph of the interaction ($F=9.07$, $p<.05$) for item three is presented in Figure 23. As shown in the graph, all students who completed the computer simulation responded similarly when rating the item. However, the rating of the case study on this item varied by course. The MKTG students who completed the case study indicated that the exercise made them feel uncomfortable. The apparent unfamiliarity of the MKTG students with the concept and the detailed calculations required by the case study probably combined to cause the lower rating.

A graph plotting the interaction ($F=3.93$, $p<.10$) for item five is presented in Figure 24. As shown on the graph, the CTM and MKTG students rated the computer simulation the same for this item. The ratings of the case study, however, varied by course. The MKTG students who completed the case study indicated stronger agreement that the exercise was boring than did the CTM students who completed the case study. This interaction followed the same pattern as the previous interactions. The composite score for enjoyment also produced a significant interation ($F=7.83$, $p<.01$) that followed this pattern (Figure 25).

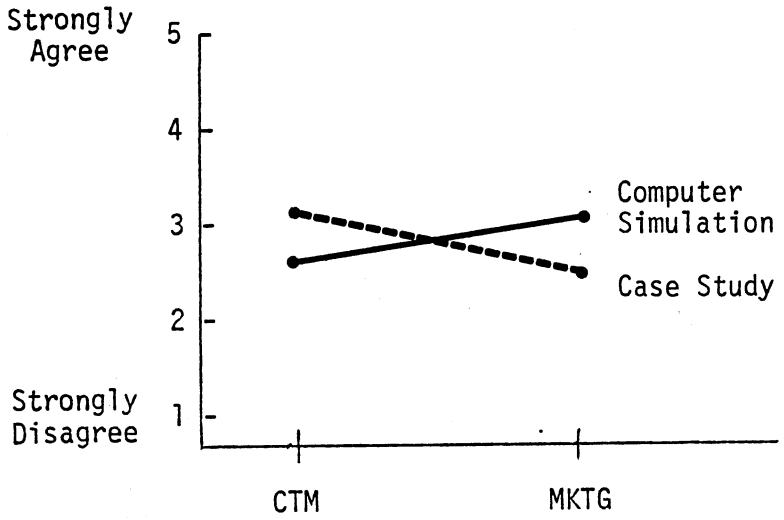


Figure 22. Mean Ratings for 'The exercise was fun'

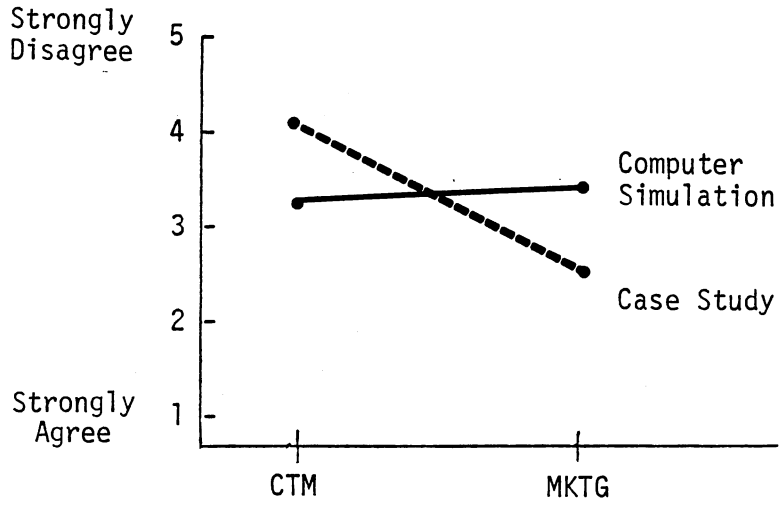


Figure 23. Mean Ratings for 'The exercise made me feel uncomfortable'

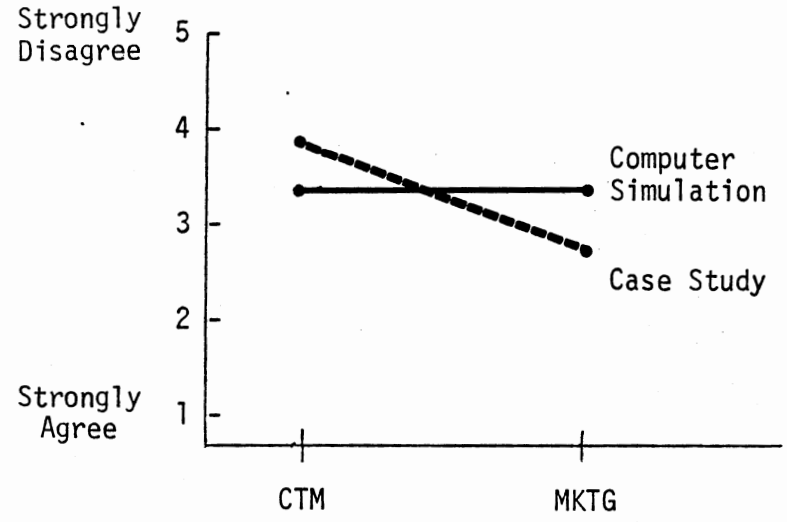


Figure 24. Mean Ratings for 'The exercise was boring'

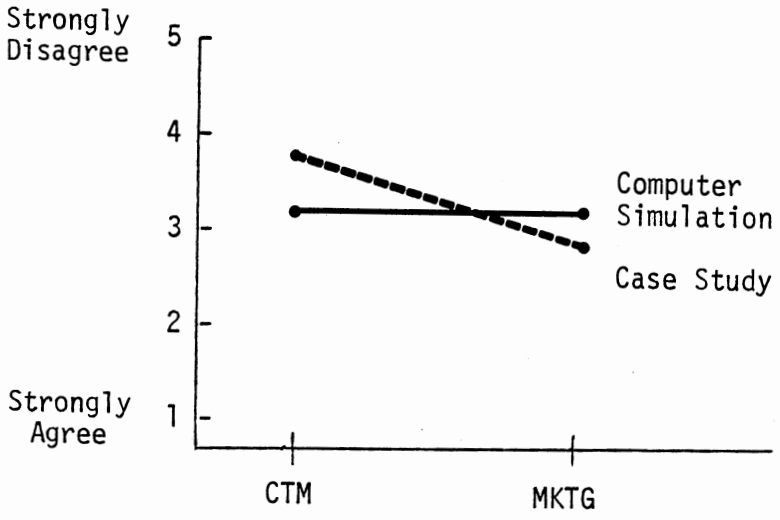


Figure 25. Interaction Pattern for the Enjoyment Composite Score

Summary of Attitude Scale Results

Similarities were found in the pattern of results for the six-month planning experiment. Significant differences were found for teaching method for the attitude categories of perceived learning and affective learning regarding the subject matter. In both instances, the case study was rated higher than the computer simulation. As mentioned before, the MKTG students were familiar with both teaching methods. This familiarity may have caused the MKTG students to rate the exercises about the same. On the other hand, both teaching methods were new to the CTM students, and the students seemed to respond more favorably to the case study teaching method.

The interaction patterns for individual items representing motivation and interest, perceived learning, affective learning regarding the subject matter, and changes in classroom structure and relations followed a similar pattern. In each interaction, the MKTG students rated the exercises similarly regardless of teaching method, while the CTM students rated the case study higher than the computer simulation. The composite score for perceived learning also produced this interaction pattern.

Some of the enjoyment items produced similar interaction patterns. For the items 'the exercise was enjoyable' and 'the exercise was fun' the CTM students rated the case study higher than the computer simulation, while the MKTG students rated the computer simulation higher than the case study. For the items 'the exercise made me feel uncomfortable' and 'the exercise was boring,' the CTM and MKTG students rated the computer simulation about the same. However, the rating of the case study

differed. The CTM students rated the case study higher than did the MKTG students. The composite score produced a similar pattern.

Significant differences between courses followed a similar pattern for individual items representing the attitude categories of motivation and interest, affective learning regarding the subject matter, and changes in classroom structure and relations. In each case the MKTG students rated the items higher than did the CTM students. Generally, the MKTG students were not as familiar with the topic of six-month planning. The newness of the topic may have increased their interest and caused them to rate the items higher.

Unit and Dollar Control Experiment Results

The unit and dollar control results are presented in two sections. The first section includes the results of the pretest and posttest which were designed to measure cognitive learning. The second section includes the results of the attitude scale which was designed to measure student attitudes toward the case study and the computer simulation.

Cognitive Learning

One purpose of the experiment was to determine whether the degree of cognitive learning was significantly different between students who completed a case study and students who completed a computer simulation on unit and dollar control. Cognitive learning was operationalized as the difference between the posttest score and the pretest score. A comparison of the pretest, the posttest and the cognitive learning scores is presented in Table XIII. The analysis of variance was used to detect significantly different mean scores for teaching method and

TABLE XIII

COMPARISON OF PRETEST, POSTTEST, AND COGNITIVE LEARNING SCORES FOR THE UNIT AND DOLLAR CONTROL EXPERIMENT

	Course				Teaching Method			
Variable	CTM Mean (N=26)	MKTG Mean (N=24)	F Value	Level of Significance	Case Study Mean (N=25)	Computer Simulation Mean (N=25)	F Value	Level of Significance
Pretest	45.3	59.5	6.94	.05	49.1	55.9	1.34	NS
Posttest	57.5	58.9	0.08	NS	53.8	62.5	3.28	NS
Cognitive Learning	12.2	-0.7	5.93	.05	4.7	6.6	0.14	NS

for course. It was also used to determine whether any significant interactions existed between teaching method and course.

The analysis of variance indicated that there was no significant difference in the degree of cognitive learning between students who completed a case study and students who completed a computer simulation on unit and dollar control. Therefore, hypothesis 1-b could not be rejected.

Significant differences were found between the mean scores for the two courses. The mean pretest score of the MKTG students (59.5) was higher than the mean pretest score of the CTM students (45.3). Although no specific reason can be given for this difference, one possibility is that the MKTG program provided more exposure to the general concepts of stock control. The mean posttest scores of the students in the two courses were not significantly different. The cognitive learning means were significantly different between the students in the two courses. The degree of cognitive learning increased for the CTM students (12.2) and decreased slightly for the MKTG students (-.7). This finding may be attributed to the initial difference in the pretest means or to the chance that the CTM students responded more favorably to the exercises.

Attitude Scale

The attitude scale was designed to measure seven attitude dimensions. Results pertaining to each of the seven dimensions will be discussed.

Motivation and Interest. A comparison of the attitude scale items that measured attitudes related to motivation and interest is presented in Table XIV. An analysis of variance was performed for each of the

TABLE XIV

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING ATTITUDES RELATED TO MOTIVATION AND INTEREST FOR THE UNIT AND DOLLAR CONTROL EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=26)	MKTG Mean (N=24)	F Value	Level of Significance	Case Study Mean (N=25)	Computer Simulation Mean (N=25)	F Value	Level of Significance
The exercise:								
1. was interesting	3.2	2.6	2.93	.10	2.8	3.0	0.15	NS
2. was involving	3.8	3.5	0.88	NS	3.7	3.6	0.13	NS
3. increased my interest in the topic	2.9	2.6	0.65	NS	2.8	2.8	0.00	NS
4. increased my interest in the course	2.6	2.5	0.01	NS	2.7	2.4	1.20	NS
5. increased my interest in learning in general	2.8	2.5	1.52	NS	2.8	2.5	0.72	NS
6. increased my enthusiasm to learn in general	2.5	2.3	0.60	NS	2.5	2.4	0.37	NS
7. increased my commitment to learn in general	2.5	2.4	0.01	NS	2.6	2.3	2.03	NS

seven attitude scale items. No significant differences were found for teaching method for any of the seven items, nor was a significant main effect found for the motivation and interest composite score (see Table XXIV, Appendix M, p. 250). Therefore, hypothesis 3-a could not be rejected. There was no significant difference in the mean ratings of the motivation and interest items between students who completed a case study and students who completed a computer simulation on unit and dollar control.

The analysis of variance revealed a significant main effect for course for item one. The CTM students indicated stronger agreement that the exercises were interesting than did the MKTG students. The newness of the two exercises may have increased the interest of the CTM students.

No other significant main effects were found for course and no significant interactions were found between teaching method and course. The composite score did not produce a significant main effect for course (see Table XXIV, Appendix M, p. 250), nor did it produce a significant interaction between teaching method and course.

Perceived Learning. A comparison of the eight attitude scale items that measured perceived learning is presented in Table XV. An analysis of variance revealed only one significant main effect for teaching method. The item 'I learned the procedures of unit and dollar control' was rated differently by the students who completed the case study and the students who completed the computer simulation. Students who completed the computer simulation (3.2) indicated stronger agreement that they learned the procedures of unit and dollar control than did the the students who completed the case study (2.7). Although no other

TABLE XV

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING PERCEIVED LEARNING FOR THE UNIT AND DOLLAR CONTROL EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=26)	MKTG Mean (N=24)	F Value	Level of Significance	Case Study Mean (N=25)	Computer Simulation Mean (N=25)	F Value	Level of Significance
1. Gained decision-making skills	2.7	2.5	0.48	NS	2.6	2.5	0.32	NS
2. Helped learn "winning strategies"	2.6	2.4	0.62	NS	2.6	2.4	0.43	NS
3. Gained actual information	2.8	2.8	0.00	NS	2.9	2.6	0.50	NS
4. Learned the procedures	3.0	2.9	0.03	NS	2.7	3.2	2.95	.10
5. Learned the general principles involved	3.1	3.1	0.01	NS	2.9	3.33	1.72	NS
6. Helped to understand structure of "real world"	3.1	3.0	0.14	NS	3.1	2.9	0.41	NS
7. Helped to understand and identify elements in six-month planning	3.0	3.1	0.21	NS	2.9	3.2	1.04	NS
8. Learned systematic and analytical approach	2.5	2.7	0.53	NS	2.6	2.5	0.06	NS

items produced differences between the teaching methods this one finding suggests that the added realism of the computer simulation may have caused the students who completed the computer simulation to experience greater perceived learning. The composite score for this attitude dimension did not produce a significant main effect for teaching method (see Table XXIV, Appendix M, p. 250).

Based on the anlysis of variance results, hypothesis 3-b could not be rejected. There was no significant difference in the mean ratings of the perceived learning items between students who completed the case study and students who completed the computer simulation on unit and dollar control.

No significant main effects were found for course and no significant interactions were revealed between course and teaching method. Further, the composite score for perceived learning did not produce a significant main effect for course, (see Table XXIV, Appendix M, p. 250), nor did it produce a significant interaction between teaching method and course.

Changes in the Character of Later Course Work. An analysis of variance was performed for each of the attitude scale items that measured attitudes related to changes in the character of later course work. No significant main effects were revealed for teaching method or for course. Further, no significant interactions were indicated between teaching method and course. The composite score for this attitude dimension did not produce a significant main effect for teaching method or course, (see Table XXIV, Appendix M, p. 250), nor did it produce an interaction between the two. A comparison of the three items that measured this attitude dimension is presented in Table XVI.

TABLE XVI

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING ATTITUDES RELATED TO CHANGES IN THE CHARACTER OF LATER COURSE WORK FOR THE UNIT AND DOLLAR CONTROL EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=26)	MKTG Mean (N=24)	F Value	Level of Significance	Case Study Mean (N=25)	Computer Simulation Mean (N=25)	F Value	Level of Significance
I believe the exercise will:								
1. make other work in the course more meaningful	2.6	2.7	0.08	NS	2.6	2.6	0.02	NS
2. lead me to asking better questions	3.0	3.0	0.00	NS	3.2	2.9	0.58	NS
3. lead me to participate more in a class discussion on this topic	2.7	2.9	0.52	NS	2.8	2.8	0.00	NS

The results indicated that hypothesis 3-c could not be rejected. There was no significant difference in the mean ratings of items measuring attitudes related to changes in the character of later course work between students who completed a case study and students who completed a computer simulation on unit and dollar control.

Affective Learning Regarding the Subject Matter. Six attitude scale items were designed to measure affective learning regarding the subject matter. A comparison of the six items is presented in Table XVII. An analysis of variance revealed significant main effects ($p<.10$) for teaching method for items four and five. Students who completed the computer simulation indicated stronger agreement (3.9) that the exercise gave them insight into the pressures faced by unit and dollar control decision makers than did the students who completed the case study (3.4). The responses to item five followed the same pattern. Students who completed the computer simulation indicated stronger agreement (3.8) that the exercise increased their awareness of the uncertainties faced by those involved in unit and dollar control decisions. Again, the added realism of the computer simulation may have caused the students who completed the computer simulation to experience greater affective learning regarding the subject matter.

No significant main effects were found for course, and no significant interactions were found between teaching method and course. This pattern of results also held for the composite score (see Table XXIV, Appendix M, p. 250).

Although two of the individual items produced significant main effects for teaching method, the composite score for this attitude dimension did not produce a significant main effect (see Table XXIV,

TABLE XVII

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING AFFECTIVE LEARNING REGARDING THE SUBJECT MATTER FOR THE UNIT AND DOLLAR CONTROL EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=26)	MKTG Mean (N=24)	F Value	Level of Significance	Study Mean (N=25)	Computer Simulation Mean (N=25)	F Value	Level of Significance
The exercise:								
1. changed perspective on some part of retailing	3.2	3.0	0.28	NS	3.1	3.0	0.07	NS
2. increased appreciation for those problems involved in six-month planning	3.0	3.3	1.32	NS	3.0	3.2	0.29	NS
3. increased insight into the ways in which people who make retail store decisions see the world	3.2	3.3	0.10	NS	3.3	3.2	0.06	NS
4. gave insight into the pressures faced by those making six-month planning decisions	3.7	3.7	0.01	NS	3.4	3.9	3.68	.10
5. increased awareness of the uncertainties faced by those involved in six-month planning decisions	3.7	3.5	0.35	NS	3.4	3.8	3.02	.10
6. increased awareness of the difficulties in general of those involved with six-month planning	3.5	3.3	1.32	NS	3.4	3.5	0.18	NS

Appendix M, p. 250). The analysis of variance results indicated that there were some differences in the mean ratings of items that measured affective learning regarding the subject matter between students who completed a case study and students who completed a computer simulation on unit and dollar control. However, this limited evidence did not warrant the conclusive rejection of the null hypothesis. Therefore, hypothesis 3-d could not be rejected.

Affective Learning in General. An analysis of variance was performed for each of the attitude scale items that measured affective learning in general. A comparison of the three items is presented in Table XVIII; a comparison of the composite scores is presented in Table XXIV, Appendix M, p. 250. No significant main effects were found for teaching method for either the individual items or the composite score.

Based on the analysis of variance results, hypothesis 3-e could not be rejected. There was no significant difference in the mean ratings of attitude scale items that measured affective learning in general between students who completed a case study and students who completed a computer simulation on unit and dollar control.

No significant main effects were found for course, for either the individual items or the composite score. Further, the composite score did not produce a significant interaction. However, a significant interaction ($F=2.94$, $p<.10$) was found between teaching method and course for item one. A graph of the interaction is presented in Figure 26. As shown on the graph, the CTM students who completed the computer simulation indicated a stronger agreement that the exercise helped them to increase their own self-awareness than did the CTM students who completed the case study. On the other hand, the MKTG students who

TABLE XVIII

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING AFFECTIVE LEARNING IN GENERAL FOR THE UNIT AND DOLLAR CONTROL EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=26)	MKTG Mean (N=24)	F Value	Level of Significance	Study Mean (N=25)	Computer Simulation Mean (N=25)	F Value	Level of Significance
The exercise:								
1. helped me to increase my own self-awareness	2.7	2.5	0.25	NS	2.6	2.7	0.16	NS
2. increased my sense of my personal abilities	2.7	2.5	0.41	NS	2.7	2.5	0.40	NS
3. increased my awareness of my own potential	2.8	2.6	0.33	NS	2.6	2.8	0.45	NS

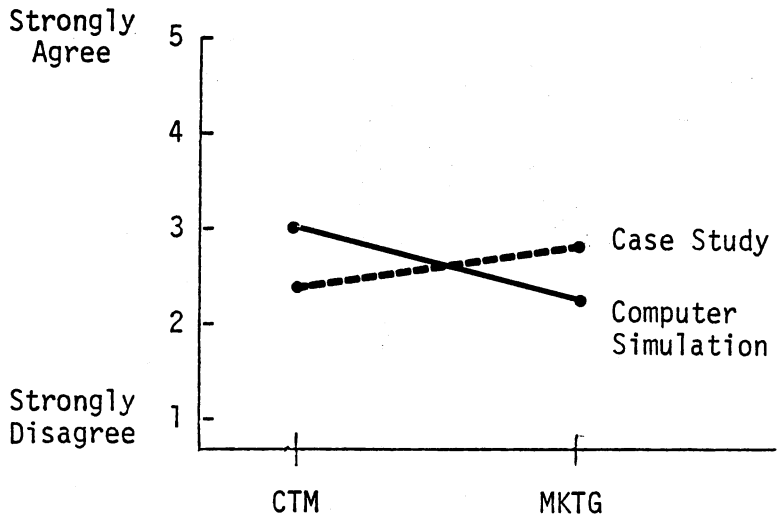


Figure 26. Mean Ratings for 'The exercise helped me to increase my own self awareness'

completed the case study indicated stronger agreement that the exercise helped them to increase their own self-awareness.

Changes in Classroom Structure and Relations. Seven items on the attitude scale were designed to measure attitudes related to changes in classroom structure and relations. A comparison of the seven items is presented in Table XIX and a comparison of the composite scores is presented in Table XXIV, Appendix M, p. 250. An analysis of variance revealed no significant main effects for teaching method for either the individual items or the composite score.

Based on the analysis of variance results, hypothesis 3-f could not be rejected. There was no significant difference in mean ratings of items measuring attitudes related to changes in classroom structure and relations between students who completed a case study and students who completed a computer simulation on unit and dollar control.

A significant main effect was found for course for item seven. Students in the CTM course indicated stronger agreement that the exercise provided greater freedom to explore ideas than did the students in the MKTG course. The new experience may have given the CTM students this sense of independence.

No other significant main effects were found for course and no significant interactions were found between teaching method and course. The composite score did not produce a significant main effect for course nor did it produce a significant interaction.

Enjoyment. An analysis of variance revealed no significant main effects for teaching method or for course for the seven items that measured the enjoyment dimension. Further, the composite score for

TABLE XIX

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING ATTITUDES RELATED TO CHANGES IN CLASSROOM STRUCTURE AND RELATIONS FOR THE UNIT AND DOLLAR CONTROL EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=26)	MKTG Mean (N=24)	F Value	Level of Significance	Case Study Mean (N=25)	Computer Simulation Mean (N=25)	F Value	Level of Significance
Exercises such as this one:								
1. lead students to be more independent, thus changing student-teacher relationships	2.7	2.8	0.48	NS	2.8	2.7	0.32	NS
2. help students perceive teachers in a more positive light	2.6	2.3	0.88	NS	2.3	2.6	1.13	NS
3. provide a relaxed, natural exchange between students and teachers	2.4	2.5	0.20	NS	2.3	2.6	1.25	NS
4. reduce the necessity of the teacher to judge learning	2.5	2.4	0.00	NS	2.4	2.4	0.02	NS
5. lead teachers to perceiving students more positive in general	2.5	2.5	0.00	NS	2.4	2.5	0.22	NS
6. promotes better student-teacher relationships	2.4	2.5	0.06	NS	2.4	2.5	0.17	NS
7. provides greater freedom for students to explore ideas	3.4	2.7	5.59	.05	3.2	3.0	0.64	NS

enjoyment did not produce a significant main effect for teaching method or course (see Table XXIV, Appendix M, p. 250). A comparison of the seven items is presented in Table XX. The absence of significant differences between teaching methods indicated that hypothesis 3-g could not be rejected. There was no significant difference in the mean ratings of attitude scale items that measured enjoyment between students who completed a computer simulation and students who completed a case study.

The composite score for enjoyment did not produce a significant interaction between teaching method and course. However, a significant interaction ($F=3.17$, p .10) was found for the item 'the exercise was fun.' A graph plotting the interaction is presented in Figure 27. Students in the CTM course rated the computer simulation higher, while the MKTG students gave the two teaching methods similar ratings. Again, the MKTG students were equally as familiar with both teaching methods and may have found them to be equally 'fun.' However, when the CTM students were given the unit and dollar control attitude scale, they had just completed three computer-based tutorial lessons. This additional experience may have increased their familiarity with the computer, and made them comfortable enough to overcome any apprehension and enjoy the exercise.

Summary of Attitude Scale Results

Individual items in the perceived learning category and the affective learning regarding the subject matter category produced results that followed a similar pattern. In both cases, the computer simulation received higher ratings than the case study. As mentioned previously,

TABLE XX

COMPARISON OF ATTITUDE SCALE ITEMS MEASURING ATTITUDES RELATED TO ENJOYMENT FOR THE UNIT AND DOLLAR CONTROL EXPERIMENT

Item	Course				Teaching Method			
	CTM Mean (N=26)	MKTG Mean (N=24)	F Value	Level of Significance	Case Study Mean (N=25)	Computer Simulation Mean (N=25)	F Value	Level of Significance
The exercise:								
1. was enjoyable	2.6	2.3	1.05	NS	2.4	2.4	0.02	NS
2. was fun	2.7	2.4	0.82	NS	2.4	2.7	1.08	NS
3. made me feel uncomfortable	2.7	2.6	0.10	NS	2.6	2.6	0.00	NS
4. took too long	2.7	2.2	1.83	NS	2.6	2.3	0.96	NS
5. was boring	2.7	2.2	0.03	NS	2.5	3.0	2.36	NS
6. was too low-level	3.5	3.5	0.00	NS	3.6	3.5	0.02	NS
7. was too unstructured	2.6	2.7	0.08	NS	2.4	2.8	1.27	NS

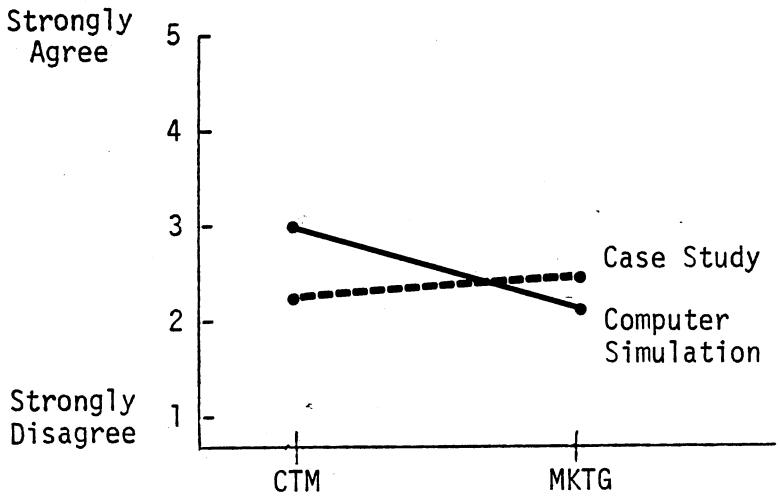


Figure 27. Mean Ratings for 'The exercise was fun'

the added realism of the computer simulation may have caused the students taught with the computer simulation to view their involvement in the exercise differently. None of the other attitude categories produced significant differences between the teaching methods.

Items in the motivation and interest and changes in classroom structure and relations categories produced similar results. The CTM students, in both cases, responded more favorably to the items than did the MKTG students. As mentioned before, both teaching methods were new to the CTM students. This newness may have caused the CTM students to indicate more interest in the exercises and also to perceive greater freedom to explore ideas.

One interaction was produced for the unit and dollar control experiment. The enjoyment item 'the exercise was fun' produced a significant interaction between teaching method and course. The MKTG students rated the two teaching methods similarly, while the CTM students rated the computer simulation higher than the case study. One explanation for this result might be that the MKTG students were equally as familiar with both teaching methods and may have found them equally as 'fun.' The CTM students, having just completed three computer-based tutorial lessons, may have overcome any apprehension with using the computer and may have rated the computer simulation higher.

Comparison of the Experiments

Similarities and differences were found between the two experiments. In regard to cognitive learning, the results were similar. No significant differences were found between teaching methods for cognitive learning. However, the pretest results of the students in the two

courses varied by topic. The CTM students had a higher pretest score for the six-month planning experiment, while the MKTG students had a higher pretest score for the unit and dollar control experiment. Previous exposure to the topics appeared to be a plausible explanation for these differences.

The posttest results also varied by topic. An interaction was produced by the six-month planning posttest scores. For the CTM students, those who completed the case study scored highest, while for the MKTG students those who completed the computer simulation scored highest. As previously mentioned, the MKTG students were familiar with both teaching methods, while the CTM students were not. The CTM students who completed the computer simulation may have concentrated more on the use of the computer than on the concept of six-month planning.

The unit and dollar control posttest scores did not produce a significant interaction. The reason for the difference in the two experiments could be that prior to the administration of the unit and dollar control experiment, the CTM students completed three computer-based tutorial lessons. This exposure to the computer may have lessened any apprehension toward using the computer and thus, allowed them to concentrate on the unit and dollar control concept.

In regard to the attitude scale results, four of the seven attitude categories produced similar results between the two experiments. These categories were motivation and interest, changes in the character of later course work, affective learning in general and changes in classroom structure and relations. In these categories, no significant differences were found in the composite scores for teaching method or

course in either the six-month planning or the unit and dollar control experiment. Although significant differences for teaching method and course were found for a few individual items, overall, the two experiments produced similar results. A comparison of the mean values of the items in each attitude category for the two experiments is presented in Table XXV, Appendix N, p. 252).

Three of the seven attitude categories produced dissimilar results between the two experiments. These categories were perceived learning, affective learning regarding the subject matter, and enjoyment. In the perceived learning category and the affective learning regarding the subject matter category the composite scores and a few of the individual items produced significant differences for teaching method in the six-month planning experiment. In both cases, the case study was rated higher than the computer simulation. In the unit and dollar control experiment, however, several individual items produced significant differences for teaching method in which the computer simulation was rated higher than the case study.

Several significant interactions between teaching method and course were found for the perceived learning category and the affective learning regarding the subject matter category in the six-month planning experiment. In each instance, the MKTG students rated the items similarly regardless of teaching method, while the CTM students tended to rate the case study higher than the computer simulation. No significant interactions occurred for the unit and dollar control experiment. The different results for the two experiments may be explained by the additional exposure to the computer on the part of the CTM students. As mentioned before, the CTM students completed three

computer-based tutorial lessons prior to the administration of the unit and dollar control experiment. This exposure may have lessened any apprehension toward using the computer and may have caused the CTM students to rate the computer simulation higher than the case study in the unit and dollar control experiment.

The enjoyment attitude category also produced dissimilar results between the two experiments. In the six-month planning experiment, the CTM students rated the case study higher than the computer simulation for the items 'the exercise was enjoyable' and 'the exercise was fun,' while the MKTG students rated the computer simulation higher than the case study. On the other hand, in the unit and dollar control experiment, the CTM students rated the computer simulation higher than the case study for the item 'the exercise was fun,' while the MKTG students rated the computer simulation and the case study about the same. Again, the additional exposure of the CTM students to the computer may have caused them to rate the computer simulation higher on this item in the unit and dollar control experiment.

CHAPTER VI

SUMMARY AND RECOMMENDATIONS

The research was conducted to develop and evaluate computer simulations for teaching selected retail store management concepts. The specific objectives of the study were to identify uses of the computer and computer-generated information in retail store management; develop computer simulations representative of existing computer-assisted retail store management applications; and evaluate the computer simulations in an instructional situation.

Summary of Procedures

During the first phase of the study a questionnaire was designed to identify uses of the computer and computer-generated information in retail store management. Selected retailers from firms who recruited clothing, textiles and merchandising majors during the 1981-82 academic year were surveyed. Responses from 34 participants were analyzed. Frequencies and percentages were calculated for each of the questionnaire items. The items that were checked by 50 percent or more of the respondents were considered as possible topics for simulation. Six-month planning and unit and dollar control were chosen as the simulation topics.

During the second phase of the study the six-month planning and unit and dollar control simulations were developed. Behavioral

objectives were written for each simulation, and flowcharts were developed to structure and model the simulations. The simulations were developed for use on the Digital Equipment Corporation VAX 11/780 minicomputer. They were coded in BASIC, tested, debugged and then field-tested.

The third phase included the evaluation of the computer simulations and the development of case studies, pretests, and posttests for this purpose. Two experiments were conducted to collect the data necessary to evaluate the simulations. The data were then analyzed statistically.

Summary of Findings

The results of the study indicated that cognitive learning did not differ based on teaching method. Thus, hypothesis 1-a and 1-b were not rejected. These results were consistent with the researcher's expectations. These results were also consistent with previous research by Brenenstuhl (1975), Brenenstuhl and Catalanello (1979), and Dekkers and Donatti (1981).

Overall, student responses to the motivation and interest attitude scale items did not differ based on teaching method. Therefore, hypotheses 2-a and 3-a were not rejected. These results were not consistent with the previous research of Brenenstuhl and Catalanello (1979), Cherryholmes (1966), and Pierfy (1977). Brenenstuhl and Catalanello (1979) found that a computer simulation increased motivation to a greater degree than did either an experiential exercise or a discussion group exercise. Cherryholmes (1966) and Pierfy (1977) found that simulations did increase student interest.

The ratings of the perceived learning items varied by topic. For the six-month planning experiment the case study received higher ratings than did the computer simulation. Therefore, hypothesis 2-b was rejected. For some of the individual items in the unit and dollar control experiment, the computer simulation was rated higher than the case study. However, the composite score did not produce a significant difference for teaching method. Thus, hypothesis 3-b was not rejected. Previous research by Sherrell and Burns (1982) indicated that a microsimulation caused greater perceived learning than did a case study, an experiential exercise, or a series of discussion questions. The six-month planning experiment results were not consistent with the results reported by Sherrell and Burns (1982). The unit and dollar control results more closely matched Sherrell and Burns (1982) findings, and Greenblat's (1973) propositions (Appendix H, p. 211) regarding the effects of simulation.

In general, student responses to the attitude scale items that measured changes in the character of later course work did not differ based on teaching method. Thus, hypotheses 2-c and 3-c were not rejected. Although there is no empirical evidence with which to compare the results of this attitude category, the results did not support Greenblat's (1973) propositions regarding changes in the character of later course work (Appendix H, p. 211).

Student responses differed for the affective learning regarding the subject matter items between the two experiments. Students rated the case study higher than the computer simulation in the six-month planning experiment. Therefore, hypothesis 2-d was rejected. On the other hand, few differences were found in student ratings of the case

study and computer simulation for the unit and dollar control experiment. Thus, hypothesis 3-d was not rejected. Again, there was no empirical evidence with which to compare the results. The results, however, did not support Greenblat's (1973) propositions concerning affective learning regarding the subject matter (Appendix H, p. 211).

Overall, student responses to the attitude scale items that measured affective learning in general did not differ based on teaching method. Therefore, hypotheses 2-e and 3-e were not rejected. These results did not support Greenblat's (1973) propositions regarding affective learning in general (Appendix H, p. 211). No empirical evidence was available for comparison.

In general, the attitude scale items that measured changes in classroom structure and relations did not produce student responses that differed by teaching method. Therefore, hypotheses 2-f and 3-f were not rejected. Greenblat's (1973) proposition that simulations cause more positive changes in classroom structure and relations than do other teaching methods was not supported by this research.

Student responses to the enjoyment items did not differ based on teaching method. Therefore, hypotheses 2-g and 3-g were not rejected. These findings do not support previous research. Sherrell and Burns (1982), Waggener (1979), and Brenenstuhl and Catalanello (1979) found that a computer simulation caused more student enjoyment than did other teaching methods.

The attitude scales were factor analyzed to determine the various dimensions tapped by the scales. The factor analysis of the six-month planning scale produced factors that were similar to Greenblat's propositions regarding changes in classroom structure and relations,

motivation and interest, and affective learning regarding the subject matter. Factors did not emerge to represent Greenblat's four remaining propositions. Only two of the factors produced by the unit and dollar control experiment were similar to Greenblat's (1973) propositions. These factors closely matched her propositions concerning affective learning regarding the subject matter and affective learning in general.

In summary, the results of this study tended to support previous research regarding cognitive learning. However, the attitude scale results were not consistent with existing literature.

Implications

The computer simulations were designed to represent existing computer-assisted retail store management applications and to allow for student interaction with the computer. The results of the study indicated that the students who completed the computer simulations and the case studies achieved a similar degree of cognitive learning. The computer simulations provided a similar degree of cognitive learning but also added the realism of a job-like environment. Thus, the computer simulations can be used as an alternative experiential exercise to the case studies.

The results suggested that teaching method should vary depending on the topic to be covered. Topics that are procedure oriented, such as six-month planning, may require a teaching method that allows the student to practice the procedures. Topics that are decision oriented, such as unit and dollar control, may require a teaching method that allows the student to make decisions and to view the results of the decisions.

The results may imply that increased familiarity with computer-based teaching may cause increased enjoyment with this teaching method. The CTM students who completed the unit and dollar control simulation rated several of the enjoyment items higher than did the CTM students who completed the six-month planning computer simulation. Prior to the unit and dollar control experiment, the CTM students completed three computer-based tutorial lessons. This additional exposure to the computer may have increased their familiarity and reduced any apprehension with using the computer and thus, allowed them to enjoy the computer simulation.

These implications and any other generalizations should be considered in light of the limitations of the study. The sample was limited to undergraduate clothing, textiles and merchandising students and marketing students at Oklahoma State University. Therefore, the generalizability of the results is limited. Further the results pertain to two specific computer simulations and two specific case studies and therefore cannot be generalized to all computer simulations and case studies.

Recommendations for Research and Development

The following recommendations for further research and development are suggested:

1. Select a sample of retailers to perform the simulations, gauge their realism, and provide suggestions for enhancements.

2. Test the simulations in other learning situations (e.g., workshops with retailers, adult learners).

3. Modify the simulations to allow them to run under a variety of operating systems and on a variety of computer hardware configurations.

4. Continue to develop computer simulations following the modular approach and integrate the simulations into a comprehensive set of computerized exercises.

5. Improve the operationalization of attitude dimensions that have been previously researched and attempt to isolate new attitude dimensions.

6. Conduct a similar study, but use an objective measure of computer experience (previous courses in use of computers) to determine if previous computer experience would influence the study results.

7. Restructure the simulation administration procedures to provide more normative feedback to the students, both during and after the computer simulation exercises.

8. Revise the six-month planning student guide to provide more information and guidance concerning the sensitivity analysis phase of the computer simulation.

9. Conduct a similar study in which subjects would participate in a series of computer simulations to determine if familiarity with the computer simulation process influences attitudes toward the computer simulations.

10. Conduct a similar study in which students would participate first in a case study and then in a computer simulation on the same topic to determine if the use of the two teaching methods in tandem would increase the educational effectiveness.

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APPENDICES

APPENDIX A

CORRESPONDENCE FOR THE SURVEY

O K L A H O M A S T A T E U N I V E R S I T Y

Department of Clothing, Textiles & Merchandising

June 1982

The faculty in the Clothing, Textiles and Merchandising Department at Oklahoma State University is in the process of developing a series of computer simulations for teaching retail store management. We believe that students should be given the opportunity to use the computer in situations representative of those they will face on the job.

Your assistance is vital in identifying personnel within your store to complete a brief survey on computer use. Would you please send the names of a buyer, an assistant buyer, and a department manager in ready-to-wear who would be comfortable completing the questionnaire? Please return the three names on the self-addressed stamped post card as soon as possible.

Thank you very much for your assistance.

Sincerely,

Laura Jolly
Graduate Assistant

Lynn Sisler, Professor
and Department Head

Enc.

O K L A H O M A S T A T E U N I V E R S I T Y

Department of Clothing, Textiles & Merchandising

July, 1982

The faculty in the Clothing, Textiles and Merchandising Department at Oklahoma State University is planning to develop a series of computer simulations for teaching retail store management. We believe that students should be given the opportunity to use the computer in situations representative of those they will face on the job.

Your assistance is vital in identifying uses of the computer in retail store management. If you use a computer terminal or computer generated reports please complete and return this brief questionnaire in the self-addressed stamped envelope as soon as possible.

If you do not use a computer or computer generated reports, please return the blank questionnaire so that you will not be contacted again.

All responses will be kept confidential. The code number is for internal processing and in no way will your store be identified in the study.

Thank you very much for your assistance.

Sincerely,

Laura Jolly
Graduate Assistant

Lynn Sisler
Department Head

Encls.

O K L A H O M A S T A T E U N I V E R S I T Y

Department of Clothing, Textiles & Merchandising

August, 1982

You were recently sent a questionnaire to identify uses of the computer in retail store management. At this point we have not received your response. If you have returned the questionnaire we appreciate it. If not, a duplicate questionnaire is enclosed.

The response has been excellent and much valuable information has been gained. However, we are striving to receive information from as many retailers as possible. Please assist us by completing the questionnaire and returning it in the self-addressed stamped envelope today.

Many thanks.

Sincerely,

Laura Jolly
Graduate Assistant

Lynn Sisler, Professor
and Head of Department

Encls.

APPENDIX B

QUESTIONNAIRE

PART I: BACKGROUND INFORMATION

What is your present job title or position? (Please check one)
_____Buyer or Assistant Buyer
_____Department Manager
___Other (list job title) _____

PART II: USE OF A COMPUTER TERMINAL

DIRECTIONS: Below is a list of duties often performed using a computer terminal. Please check (✓) the duties you perform using a computer terminal. If you do not use a computer terminal, please go to Part III.

1. Sales Planning
_____Forecasting sales
_____Calculating open-to-buy
_____Calculating six month plans

2. Sales Analysis
_____Retrieving sales from previous day
_____Retrieving sales from previous weeks/months

3. Markup/Markdown
_____Entering retail price changes
_____Checking percentage of sales in markup/markdown dollars
_____Calculating maintained markup

4. Inventory Control
_____Checking amount of basic stock on hand
_____Entering purchase orders
_____Checking status of purchase orders
_____Entering purchase journal receipts
_____Checking purchase journals against invoices
_____Checking perpetual inventory records
_____Recording merchandise arrival at receiving dock
_____Checking location of merchandise shipments
_____Recording transfers among stores
_____Recording customer returns

5. Vendor Use Management
_____Updating vendor listings
_____Recording returns made to vendors
_____Recording markups and markdowns by vendor

6. Personnel Management
_____Checking personnel files
_____Scheduling personnel

PLEASE STAR (*) the duties you perform most often using a computer terminal. If you perform other duties using a computer terminal, please list and briefly describe.

Part III: USE OF COMPUTER GENERATED REPORTS

DIRECTIONS: Below is a list of reports often generated by a computer to assist retail buyers and managers. Please check (✓) the computer generated reports that you use in your present position.

1. Departmental Sales Analysis
   _____Dollar sales report
   _____Merchandise item sales report
   _____Sales by classification report
   _____Comparative sales report
   (T.Y. vs. L.Y. and/or Act. vs Pl.)
   _____Stock to sales ratio report
   _____Open-to-buy report
   _____Six month plan
   _____Sales per square foot of selling space

2. Markup/Markdown
   _____Retail price change report
   _____Maintained markup report
   _____Percentage of total markdown dollars spent to date
   _____Amount of stock at markdown dollars
   _____Amount of stock at regular price

3. Trend Recognition
   _____Best seller report
   _____Slow seller report

4. Promotion
   _____Sale plans
   _____Advertising plans
   _____Advertising budget

5. Inventory Control
   _____Purchase journal
   _____Inventory reconciliation reports
   _____Dollar amount of inventory on hand report
   _____Item inventory report
   _____Branch transfer report

6. Vendor Analysis
   _____Vendor listing report
   _____Vendor markdown report
   _____Vendor markup report
   _____Vendor chargeback report

7. Personnel Management
   _____Employee selling cost report
   _____Individual employee sales
   _____Total hours worked for each employee
   _____Total wages earned for each employee
   _____Personnel scheduling report

8. Profit and Loss Analysis
   _____Gross margin report
   _____Profit and loss report

PLEASE STAR (*) the reports you use most often.

If you use other computer reports, please list and briefly describe.
(Use back of page.)

THANK YOU! PLEASE RETURN THE COMPLETED QUESTIONNAIRE IN THE SELF-ADDRESSED STAMPED ENVELOPE TO LAURA JOLLY, HEW 315, OKLAHOMA STATE UNIVERSITY, STILLWATER, OK 74078.

APPENDIX C

COMPUTER USES IDENTIFIED BY RETAILERS

TABLE XXI

COMPUTER USES IDENTIFIED BY RETAILERS

	Total (N=34)		Buyers/Asst. Buyers (N=17)		Managers (N=17)	
Use of a Computer Terminal	N	%	N	%	N	%
Sales Planning:						
Forecasting Sales	11	32	6	35	5	29
Calculating Six Months Plans	11	32	6	35	5	29
Calculating Open-to-Buy	10	29	6	35	4	24
Sales Analysis:						
Retrieving Sales from Previous Day	17	50	8	47	9	53
Retrieving Sales from Previous Months/Weeks	14	41	8	47	6	35
Markup/Markdown:						
Entering Retail Price Changes	11	32	5	29	6	35
Checking Percentage of Sales in MU/MD Dollars	10	29	6	35	4	24
Calculating Maintained Markup	7	21	5	29	2	12
Inventory Control:						
Checking Status of Purchase Orders	14	41	9	53	5	29
Checking Amount of Basic Stock on Hand	13	38	8	47	5	29
Entering Purchase Orders	12	35	8	47	4	24
Recording Merchandise Arrival at Dock	12	35	9	53	3	18
Checking Location of Merchandise Shipments	10	29	7	41	3	18
Recording Transfers Among Stores	8	24	4	24	4	24
Checking Perpetual Inventory Records	8	24	4	24	4	24
Entering Purchase Journal Receipts	6	18	5	29	1	6
Recording Customer Returns	6	18	3	18	3	18
Checking Purchase Journals Against Invoices	4	12	4	24	-	-
Vendor Use Management:						
Updating Vendor Listings	4	12	4	24	-	-
Recording Returns Made to Vendors	3	9	2	12	1	6
Recording Markups and Markdowns by Vendor	2	6	2	12	-	-
Personnel Management:						
Checking Personnel Files	2	6	-	-	2	12
Scheduling Personnel	2	6	1	6	1	6
Use of Computer Reports						
Departmental Sales Analysis:						
Dollar Sales Report	30	88	16	94	14	82
Comparative Sales Report	28	82	13	76	8	47
Sales by Classification Report	27	79	15	88	12	71
Merchandise Item Sales Report	23	68	15	88	8	47
Six Month Plan	22	65	14	82	8	47
Stock-to-Sales Ratio Report	21	62	13	76	8	47
Open-to-Buy Report	20	59	12	71	8	47
Sales Per Square Foot of Selling Space	10	29	4	24	6	35
Markup/Markdown:						
Retail Price Change Report	17	50	11	65	6	35
Percentage of Total Markdown Dollars Spent To Date	16	47	10	59	6	35
Maintained Markup Report	15	44	11	65	4	24
Amount of Stock at Markdown Dollars	13	38	5	29	8	47
Amount of Stock at Regular Price	13	38	6	35	7	41
Trend Recognition:						
Best Seller Report	20	59	11	65	9	53
Slow Seller Report	13	38	7	41	6	35
Promotion:						
Sale Plans	15	44	9	53	6	35
Advertising Plans	4	12	3	18	1	6
Advertising Budget	2	6	2	12	-	-

TABLE XXI (Continued)

Use of Computer Reports (Continued)	Total (N=34)		Buyers/Asst. Buyers (N=17)		Managers (N=17)	
	N	%	N	%	N	%
Inventory Control:						
Dollar Amount of Inventory On-Hand Report	25	74	13	76	12	71
Purchase Journal	21	62	15	88	6	35
Item Inventory Report	20	59	13	76	7	41
Inventory Reconciliation Reports	18	53	12	71	6	35
Branch Transfer Report	14	41	9	53	5	29
Vendor Analysis:						
Vendor Listing Report	15	44	11	65	4	24
Sales Performance of Merchandise from Each Vendor	15	44	10	59	5	29
Vendor Markdown Report	11	32	10	59	1	6
Vendor Markup Report	11	32	10	59	1	6
Vendor Chargeback Report	8	24	7	41	1	6
Personnel Management:						
Employee Selling Cost Report	13	38	3	18	10	59
Individual Employee Sales	13	38	3	18	10	59
Total Hours Worked for Each Employee	10	29	3	18	7	41
Total Wages Earned for Each Employee	6	18	2	12	4	24
Personnel Scheduling Report	3	9	2	12	1	6
Profit and Loss Analysis:						
Gross Margin Report	21	62	14	82	7	41
Profit and Loss Report	15	44	9	53	1	6

APPENDIX D

COMPUTER USES REPORTED BY 50 PERCENT OR MORE OF THE 34 RESPONDENTS

TABLE XXII

COMPUTER USE REPORTED BY 50 PERCENT OR MORE
OF THE RESPONDENTS
(N=34)

Use of the Computer	N	Percent
Retrieving sales from previous day	17	50
Department Analysis		
Dollar sales report	30	88
Comparative sales report	28	82
Sales by classification report	27	79
Merchandise item sales report	23	68
Six month plan	22	65
Stock to sales ratio report	21	62
Open-to-buy report	20	59
Markup/Markdown		
Retail price change report	17	50
Trend Recognition		
Best seller report	20	59
Inventory Control		
Dollar amount of inventory on hand report	25	74
Purchase journal	21	62
Item inventory report	20	59
Inventory reconciliation report	18	53
Profit and Loss Analysis		
Gross margin report	21	62

APPENDIX E

SIMULATION FLOW CHARTS

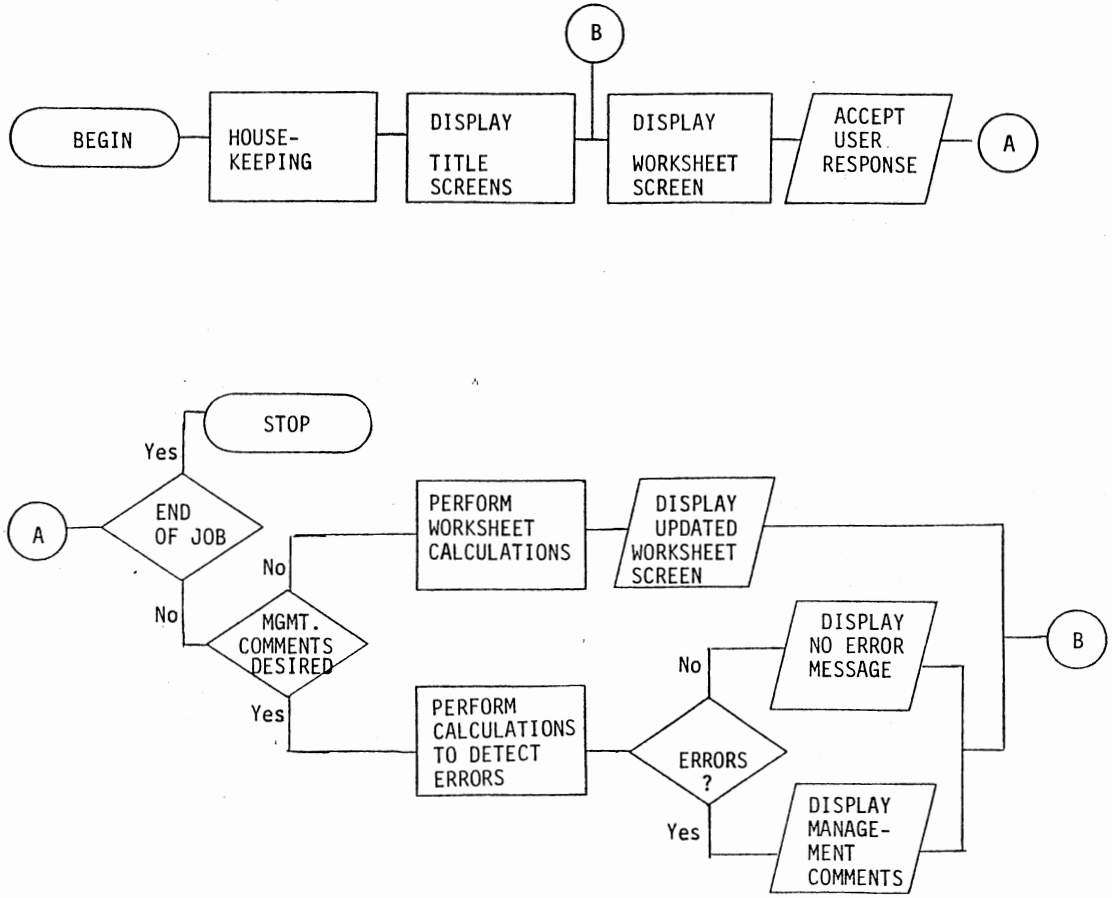

Figure 28. Flowchart of the Six-Month Planning Simulation

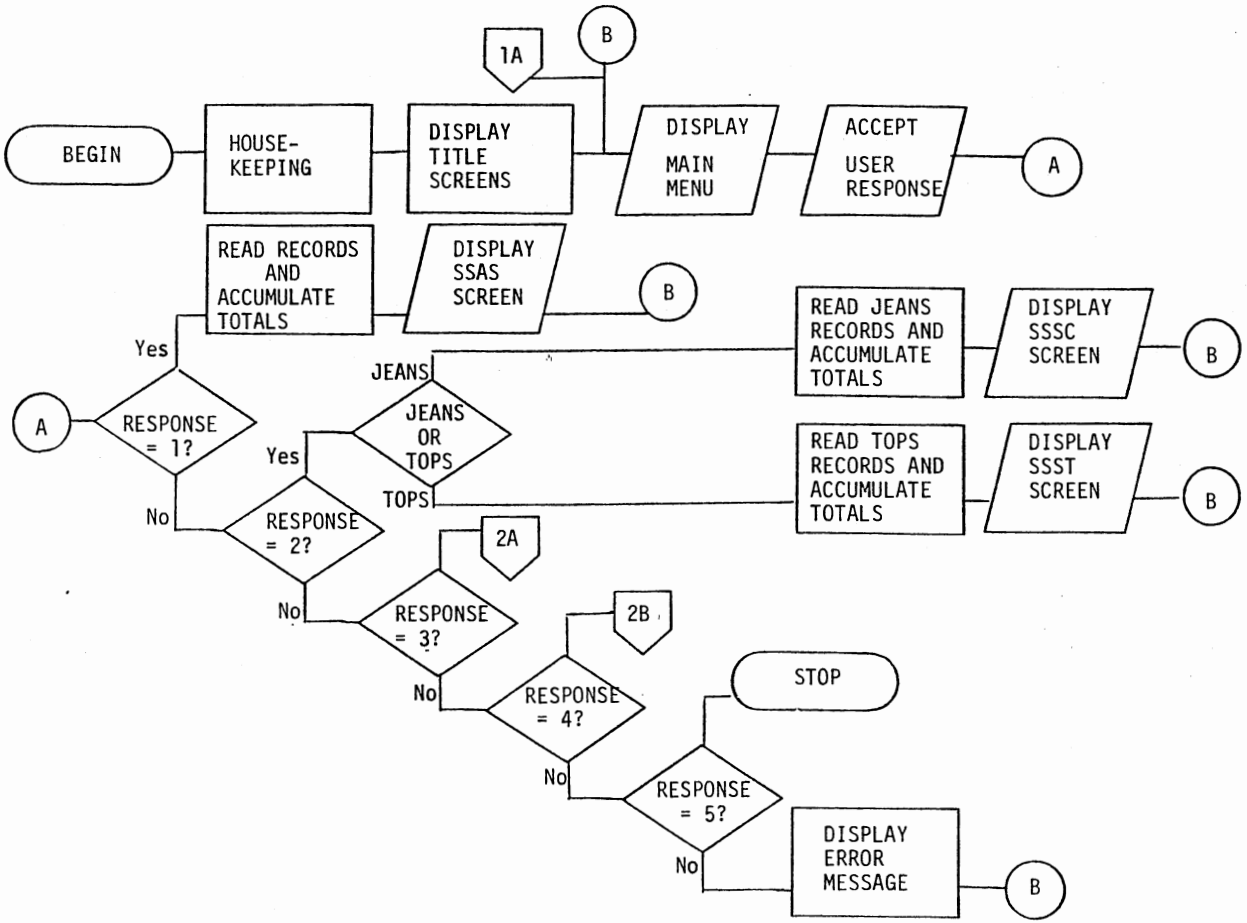

Figure 29. Flowchart of the Unit and Dollar Control Simulation

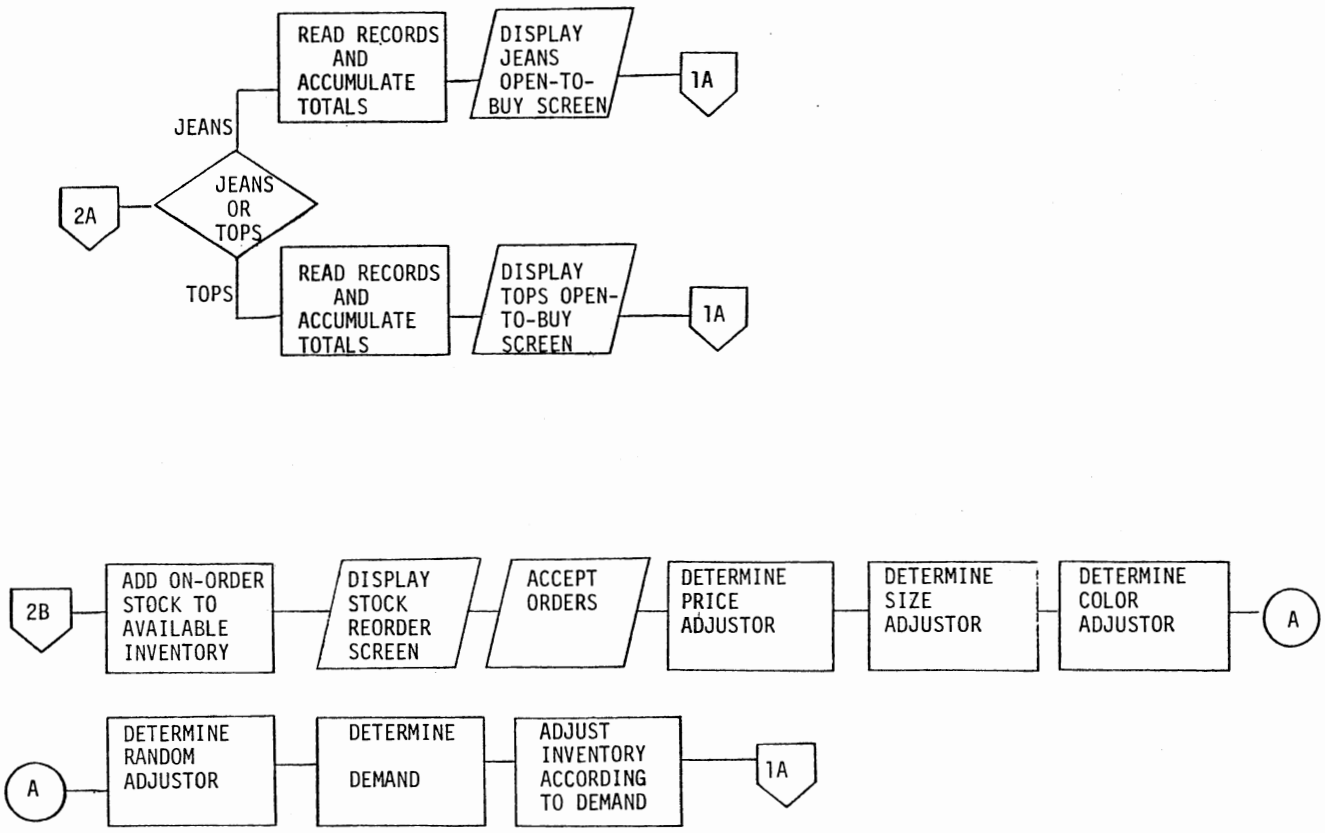

Figure 29. (Continued)

APPENDIX F

BASIC PROGRAM LISTINGS FOR THE TWO SIMULATIONS

BASIC Program Listing for the Unit and Dollar Control Simulation

```
      SIMG.BAS
100    REM THIS IS THE INTRODUCTION AND MAIN MENU SECTION OF THE
125    REM REORDER SIMULATION GAME
150    REM THIS SECTION OPENS FILES, INITIALIZES VARIABLES, AND PRESENTS
175    REM THE MAIN MENU.
200    REM OPEN FILES AND CHANNELS
225    REM INITIALIZE FORM DRIVER AND ALLOCATE IMPURE (WORK) AREA
250    CALL FDV$INIT(Y%(),1000%)
275    CALL FDV$LCHAN(1%)
300    CALL FDV$LOPEN("SIM.FLB")
325    REM BEGIN FILE OPENING PROCESS
350    REM
375    REM
400    REM
425    MAP (INVEN) RECNO$ = 10%, PRICE$ = 5%, A1$ = 5%, B1$ = 5%, C1$ = 5%  &
                  , D1$ = 5%, E1$ = 5%, F1$ = 5% , G1$ = 5% , H1$ = 5%      &
                  ,A2$ = 5% , B2$ = 5%, C2$ = 5% , D2$ = 5% , E2$ = 5%      &
                  ,F2$ = 5% , G2$ = 5%, H2$ = 5%, A3$ = 5%, B3$ = 5%        &
                  ,C3$ = 5% , D3$ = 5%, E3$ = 5%, F3$ = 5%, G3$ = 5%        &
                  ,H3$ = 5% , A4$ = 5% , B4$ = 5%, C4$ = 5%, D4$ = 5%       &
                  ,E4$ = 5% , F4$ = 5% , G4$ = 5% , H4$ = 5% , A5$ = 5%     &
                  ,B5$ = 5% , C5$ = 5% , D5$ = 5% , E5$ = 5% , F5$ = 5%     &
                  ,G5$ = 5% , H5$ = 5% , A6$ = 5% , B6$ = 5% , C6$ = 5%     &
                  ,D6$ = 5% , E6$ = 5% , F6$ = 5% , G6$ = 5% , H6$ = 5%     &
                  , I1$ = 5% , J1$ = 5%, K1$ = 5%, L1$ = 5%
450    OPEN "STOR.VLT" FOR INPUT AS FILE #2%                               &
            ,ORGANIZATION INDEXED FIXED                                     &
            ,PRIMARY KEY RECNO$                                             &
            ,ACCESS MODIFY                                                  &
            ,MAP INVEN
475    REM LOAD THE MAIN ARRAY
500    DIM RW$(30)
525    RW$(1) = "1111" \RW$(2) = "1121" \ RW$(3) = "1131" \RW$(4) = "1141"
550    RW$(5) = "1211" \RW$(6) = "1221" \RW$(7) = "1231" \RW$(8) = "1241"
575    RW$(9) = "1311" \RW$(10) = "1321" \RW$(11) = "1331" \RW$(12) = "1341"
600    RW$(13) = "2111" \RW$(14) = "2112" \RW$(15) = "2121" \RW$(16) = "2122"
625    RW$(17) = "2131" \RW$(18) = "2132" \RW$(19) = "2211" \RW$(20) = "2212"
650    RW$(21) = "2221" \RW$(22) = "2222" \RW$(23) = "2231" \RW$(24) = "2232"
675    RW$(25) = "2311" \RW$(26) = "2312" \RW$(27) = "2321" \RW$(28) = "2322"
700    RW$(29) = "2331" \RW$(30) = "2332"
```

```
725      REM
750      REM CALL SCREENS TO DESCRIBE GAME AND RECEIVE STUDENT ID NUMBER
775      CALL FDV$CLRSH("INTRO1") \ SLEEP 5%
800      CALL FDV$CLRSH("INTRO2")
825      CALL FDV$GET(STUDNO$,0,"STNO")
827     DIM VDTE$(53)
829     VDTE$(1) = "254404"\VDTE$(2) = "239780"\VDTE$(3) = "262348"\VDTE$(4) = "2
47771"\VDTE$(5) = "248088"\VDTE$(6) = "247419"
831     VDTE$(7) = "254093"\VDTE$(8) = "250156"\VDTE$(9) = "258758"\VDTE$(10) = "
279376"\VDTE$(11) = "248385"\VDTE$(12) = "278535"
833     VDTE$(13) = "284463"\VDTE$(14) = "250500"\VDTE$(15) = "248601"\VDTE$(16)
= "277526"
835     VDTE$(17) = "250066"\VDTE$(18) = "247079"\VDTE$(19) = "241718"\      &
        VDTE$(20) = "271312"\VDTE$(21) = "280432"\VDTE$(22) = "249540"\      &
        VDTE$(23) = "271098"\VDTE$(24) = "292875"\VDTE$(25) = "242419"\      &
        VDTE$(26) = "268733"\VDTE$(27) = "267336"\VDTE$(28) = "244621"\      &
        VDTE$(29) = "233444"\VDTE$(30) = "242283"\VDTE$(31) = "274631"\      &
        VDTE$(32) = "247181"\VDTE$(33) = "252342"\VDTE$(34) = "242826"\      &
        VDTE$(35) = "242356"\VDTE$(36) = "247161"\VDTE$(37) = "229034"\      &
        VDTE$(38) = "247979"\VDTE$(39) = "233717"\VDTE$(40) = "254269"
837     VDTE$(41) = "248410"\VDTE$(42) = "247216"\VDTE$(43) = "279976"\      &
        VDTE$(44) = "262406"\VDTE$(45) = "254440"\VDTE$(46) = "241757"\      &
        VDTE$(47) = "259615"\VDTE$(48) = "250077"\VDTE$(49) = "280599"\      &
        VDTE$(50) = "254940"\VDTE$(51) = "298219"\VDTE$(52) = "222222"\      &
        VDTE$(53) = "111111"
839     I = 1 \ FOR I = 1 TO 53
841     IF STUDNO$ = VDTE$(I) THEN FLAG7$ = "HIT"
843     NEXT I
845     IF FLAG7$ <> "HIT" THEN GOTO 1150
850      REM BUILD KEY AND VALIDATE STUDENT NUMBER
875      KEYNO$ = STUDNO$ + "0000"
900      GET #2%, KEY #0% EQ KEYNO$
930     PER$ = PRICE$
950      PRICE$ = TRM$(PRICE$) \P% = VAL%(PRICE$) \REM PRICE$ = P% IN 1ST RECORD
975      REM DISPLAY MAIN MENU AND ACCEPT RESPONSE
1000     CALL FDV$CLRSH("MMENU")
1025   CALL FDV$GET(A$,0,"SEL") \ IF A$ = "1" THEN GOTO 1300
1050     IF A$ = "2" THEN GOTO 4825
1075     IF A$ = "3" THEN GOTO 11150
1100     IF A$ = "4" THEN GOTO 16000
1110     IF A$ = "5" THEN GOTO 1150
1125     IF A$ <> "5" THEN GOTO 1200
1150     CALL FDV$LCLOS
1175     CLOSE #2% \ GOTO 21850
1200     CALL FDV$PUTL("CHOICE MUST BE BETWEEN 1 AND 5") \ GOTO 1025
1225     REM
1250     REM
1275     REM
```

```
1300    REM THIS IS THE SALES AND STOCK ANALYSIS BY STYLE SCREEN
1325    CALL FDV$CLRSH("SSAS") \ REM PUT UP SCREEN FORMAT
1350    REM
1375    LET I = 1 \ FOR I = 1 TO 12 \ REM BEGIN JEANS LOOP
1400    KEYNO$ = STUDNO$ + RW$(I)
1425    GET #2%, KEY #0% EQ KEYNO$ \ GOSUB 21100
1450    REM ACCUMULATE STYLE TOTALS
1475    LY$ = SUM$(LY$,AA$) \ REM ADD LAST YEARS SALES
1500    PL$ = SUM$(PL$,BA$) \ REM ADD PLAN SALES
1525    ACT$ = SUM$(ACT$,J1$) \ REM ADD ACTUAL SALES
1550    SLY$ = SUM$(SLY$,CA$) \ REM ADD LAST YEAR STOCK DOLLARS
1575    IF P = 6 THEN EMPL$ = SUM$(EMPL$,"10.0") ELSE EMPL$ = SUM$(EMPL$,DA$)
1600    SACT$ = SUM$(SACT$,K1$) \ REM ADD ACTUAL STOCK DOLLARS
1625    IF I = 4 THEN GOTO 1725
1650    IF I = 8 THEN GOTO 2000
1675    IF I = 12 THEN GOTO 2275
1700    GOTO 2725
1725    OU1$ = DIF$(ACT$,PL$)
1750    OU2$ = DIF$(SACT$,EMPL$)
1775    CALL FDV$PUT(LY$,"V1")
1800    CALL FDV$PUT(PL$,"V2")
1825    CALL FDV$PUT(ACT$,"V3")
1850    CALL FDV$PUT(OU1$,"V4")
1875    CALL FDV$PUT(SLY$,"V5")
1900    CALL FDV$PUT(EMPL$,"V6")
1925    CALL FDV$PUT(SACT$,"V7")
1950    CALL FDV$PUT(OU2$,"V8")
1975    GOTO 2550 \ REM ACCUMULATE CLASS TOTALS
2000    OU1$ = DIF$(ACT$,PL$)
2025    OU2$ = DIF$(SACT$,EMPL$)
2050    CALL FDV$PUT(LY$,"V9")
2075    CALL FDV$PUT(PL$,"V10")
2100    CALL FDV$PUT(ACT$,"V11")
2125    CALL FDV$PUT(OU1$,"V12")
2150    CALL FDV$PUT(SLY$,"V13")
2175    CALL FDV$PUT(EMPL$,"V14")
2200    CALL FDV$PUT(SACT$,"V15")
2225    CALL FDV$PUT(OU2$,"V16")
2250    GOTO 2550
2275    OU1$ = DIF$(ACT$,PL$)
2300    OU2$ = DIF$(SACT$,EMPL$)
2325    CALL FDV$PUT(LY$,"V17")
2350    CALL FDV$PUT(PL$,"V18")
2375    CALL FDV$PUT(ACT$,"V19")
2400    CALL FDV$PUT(OU1$,"V20")
2425    CALL FDV$PUT(SLY$,"V21")
2450    CALL FDV$PUT(EMPL$,"V22")
2475    CALL FDV$PUT(SACT$,"V23")
```

```
2500    CALL FDV$PUT(OU2$,"V24")
2525    GOTO 2550 \ REM ACCUMULATE CLASS TOTALS
2550    REM CLASS TOTALS SUBROUTINE
2575    CLY$ = SUM$(CLY$,LY$) \ LET LY$ = "0"
2600    CPL$ = SUM$(CPL$,PL$) \ PL$ = "0"
2625    CACT$ = SUM$(CACT$,ACT$) \ ACT$ = "0"
2650    CSLY$ = SUM$(CSLY$,SLY$) \ SLY$ = "0"
2675    CEMPL$ = SUM$(CEMPL$,EMPL$) \ EMPL$ = "0"
2700    CSACT$ = SUM$(CSACT$,SACT$) \ SACT$ = "0"
2725    NEXT I
2750    OU1$ = DIF$(CACT$,CPL$)
2775    OU2$ = DIF$(CSACT$,CEMPL$)
2800    CALL FDV$PUT(CLY$,"V25")
2825    CALL FDV$PUT(CPL$,"V26")
2850    CALL FDV$PUT(CACT$,"V27")
2875    CALL FDV$PUT(OU1$,"V28")
2900    CALL FDV$PUT(CSLY$,"V29")
2925    CALL FDV$PUT(CEMPL$,"V30")
2950    CALL FDV$PUT(CSACT$,"V31")
2975    CALL FDV$PUT(OU2$,"V32")
3000    REM  ZERO OUT CLASS TOTAL ACCUMULATORS
3025    CLY$ = "0" \ CPL$ = "0" \ CACT$ = "0"
3050    CSLY$ = "0" \ CEMPL$ = "0" \ CSACT$ = "0"
3075    REM
3100    REM
3125    REM  BEGIN TOPS LOOP
3150    LET I = 13 \ FOR I = 13 TO 30
3175    LET KEYNO$ = STUDNO$ + RW$(I)
3200    GET #2%, KEY #0% EQ KEYNO$  \ GOSUB 21100
3225    REM  ACCUMULATE STYLE TOTALS
3250    LY$ = SUM$(LY$,AA$) \ REM ADD LY SALES
3275    PL$ =  SUM$(PL$,BA$) \ REM ADD PLAN SALES
3300    ACT$ = SUM$(ACT$,J1$) \ REM ADD ACTUAL SALES
3325    SLY$ = SUM$(SLY$,CA$) \ REM ADD LY STOCK DOLLARS
3350    IF F% = 6 THEN EMPL$ = SUM$(EMPL$,"10.0") ELSE EMPL$ = SUM$(EMPL$,DA$)
3375    REM  EMPL$ = SUM$(EMPL$,DA$) \ REM ADD EOM PLAN STOCK DOLLARS
3400    SACT$ = SUM$(SACT$,K1$) \ REM ADD ACTUAL STOCK DOLLARS
3425    IF I = 18 THEN GOTO 3525
3450    IF I = 24 THEN GOTO 3775
3475    IF I = 30 THEN GOTO 4025
3500    GOTO 4425   \ REM GOTO END OF LOOP
3525    OU1$ = DIF$(ACT$,PL$) \ OU2$ = DIF$(SACT$,EMPL$)
3550    CALL FDV$PUT(LY$,"V33")
3575    CALL FDV$PUT(PL$,"V34")
3600    CALL FDV$PUT(ACT$,"V35")
3625    CALL FDV$PUT(OU1$,"V36")
3650    CALL FDV$PUT(SLY$,"V37")
3675    CALL FDV$PUT(EMPL$,"V38")
```

```
3700    CALL FDV$PUT(SACT$,"V39")
3725    CALL FDV$PUT(OU2$,"V40")
3750    GOTO 4275 \ REM CLASS TOTALS SUBROUTINE
3775    OU1$ = DIF$(ACT$,PL$) \ OU2$ = DIF$(SACT$,EMPL$)
3800    CALL FDV$PUT(LY$,"V41")
3825    CALL FDV$PUT(PL$,"V42")
3850    CALL FDV$PUT(ACT$,"V43")
3875    CALL FDV$PUT(OU1$,"V44")
3900    CALL FDV$PUT(SLY$,"V45")
3925    CALL FDV$PUT(EMPL$,"V46")
3950    CALL FDV$PUT(SACT$,"V47")
3975    CALL FDV$PUT(OU2$,"V48")
4000    GOTO 4275  \ REM CLASS TOTALS SUBROUTINE
4025    OU1$ = DIF$(ACT$,PL$) \ OU2$ = DIF$(SACT$,EMPL$)
4050    CALL FDV$PUT(LY$,"V49")
4075    CALL FDV$PUT(PL$,"V50")
4100    CALL FDV$PUT(ACT$,"V51")
4125    CALL FDV$PUT(OU1$,"V52")
4150    CALL FDV$PUT(SLY$,"V53")
4175    CALL FDV$PUT(EMPL$,"V54")
4200    CALL FDV$PUT(SACT$,"V55")
4225    CALL FDV$PUT(OU2$,"V56W")
4250    GOTO 4275 \ REM CLASS TOTALS SUBROUTINE
4275    CLY$ = SUM$(CLY$,LY$) \ LY$ = "0"
4300    CPL$ = SUM$(CPL$,PL$) \ PL$ = "0"
4325    CACT$ = SUM$(CACT$,ACT$) \ ACT$ = "0"
4350    CSLY$ = SUM$(CSLY$,SLY$) \ SLY$ = "0"
4375    CEMPL$ = SUM$(CEMPL$,EMPL$) \ EMPL$ = "0"
4400    CSACT$ = SUM$(CSACT$,SACT$) \ SACT$ = "0"
4425    NEXT I
4450    OU1$ = DIF$(CACT$,CPL$)
4475    OU2$ = DIF$(CSACT$,CEMPL$)
4500    CALL FDV$PUT(CLY$,"V57")
4525    CALL FDV$PUT(CPL$,"V58")
4550    CALL FDV$PUT(CACT$,"V59")
4575    CALL FDV$PUT(OU1$,"V60")
4600    CALL FDV$PUT(CSLY$,"V61")
4625    CALL FDV$PUT(CEMPL$,"V62")
4650    CALL FDV$PUT(CSACT$,"V63")
4675    CALL FDV$PUT(OU2$,"V64")
4680    CALL FDV$PUT(PER$,"PER")
4700    CLY$ = "0" \ CPL$ = "0" \ CACT$ = "0" \ CSLY$ = "0"
4725    CEMPL$ = "0" \ CSACT$ = "0"
4750    CALL FDV$GET(STRIKE,0,"V65")
4775    GOTO 1000 \ REM RETURNS TO MAIN MENU
4800    REM THIS SECTION WILL PRINT STOCK ANALYSIS BY STYLE SIZE COLOR
4825    REM
4850    REM
```

```
4875    CALL FDV$CLRSH("SELEC") \ REM PUT UP SELECTION SCREEN
4877    CALL FDV$GET(CHMM$,0,"SLCT3") \ REM CALL MAIN MENU CHOICE
4879    IF CHMM$ = "Y" THEN GOTO 1000
4900    CALL FDV$GET(CHC$,0,"SLCT1") \ CALL FDV$GET(CHS$,0,"SLCT2")
4950    IF CHC$ = "1" THEN GOTO 5025
4975    IF CHC$ = "2" THEN GOTO 5025
5000    CALL FDV$PUTL("CLASS MUST BE 1 OR 2") \ GOTO 4900
5025    IF CHS$ = "1" THEN GOTO 5125
5050    IF CHS$ = "2" THEN GOTO 5125
5075    IF CHS$ = "3" THEN GOTO 5125
5100    CALL FDV$PUTL("STYLE MUST BE 1, 2, OR 3") \ GOTO 4900
5125    IF CHS$ = "1" THEN STL$ = "BASIC"
5130    IF CHC$ = "1" AND CHS$ = "2" THEN STL$ = "WESTERN"
5135    IF CHC$ = "1" AND CHS$ = "3" THEN STL$ = "FASHION"
5140    IF CHC$ = "2" AND CHS$ = "2" THEN STL$ = "FASHION"
5145    IF CHC$ = "2" AND CHS$ = "3" THEN STL$ = "FAD"
5200    IF CHC$ = "1" THEN GOTO 5250
5225    IF CHC$ = "2" THEN GOTO 7875
5250    LET II = 8
5275    CALL FDV$CLRSH("SSSC") \ REM PUT UP JEANS SCREEN
5300    REM
5325    IF CHS$ = "1" THEN GOTO 5400
5350    IF CHS$ = "2" THEN GOTO 5750
5375    GOTO 6100 \ REM CHS MUST BE "3"
5400    LET I = 1 \ FOR I = 1 TO 4
5425    LET KEYNO$ = STUDNO$ + RW$(I)
5450    GET #2%, KEY #0% EQ KEYNO$ \ GOSUB 21100
5475    REM ACCUMULATE STYLE TOTALS
5500    OHU$ = SUM$(OHU$, L1$) \ REM ADD ON-HAND UNITS
5525    OHPL$ = SUM$(OHPL$,EA$) \ REM ADD PLAN UNITS
5550    OHD$ = SUM$(OHD$,K1$) \ REM ADD ON-HAND DOLLARS
5575    OHPLD$ = SUM$(OHPLD$,DA$) \ REM ADD PLAN DOLLARS
5600    OOU$ = SUM$(OOU$,HA$) \ REM ADD ON-ORDER UNITS
5625    OOD$ = SUM$(OOD$,GA$) \ REM ADD ON-ORDER DOLLARS
5650    LET II = II + 1
5675    GOSUB 6750 \ REM PUT DATA ON SCREEN
5700    NEXT I
5725    GOTO 6500  \ REM TOTALS LINE OF OUTPUT
5750    LET I = 5 \ FOR I = 5 TO 8
5775    LET KEYNO$ = STUDNO$ + RW$(I)
5800    GET #2%, KEY #0% EQ KEYNO$ \ GOSUB 21100
5825    REM ACCUMULATE STYLE TOTALS
5850    OHU$ = SUM$(OHU$,L1$) \ REM ADD ON-HAND UNITS
5875    OHPL$ = SUM$(OHPL$,EA$) \ REM ADD PLANNED UNITS
5900    OHD$ = SUM$(OHD$,K1$) \ REM ADD ON-HAND DOLLARS
5925    OHPLD$ = SUM$(OHPLD$,DA$) \ REM ADD ON-HAND PLAN DOLLARS
5950    OOU$ = SUM$(OOU$,HA$) \ REM ADD ON-ORDER UNITS
5975    OOD$ = SUM$(OOD$,GA$) \ REM ADD ON-ORDER DOLLARS
```

```
6000    LET II = II + 1 \
6025    GOSUB 6750 \ REM PUT DAT ON SCREEN
6050    NEXT I
6075    GOTO 6500 \ REM TOTALS LINE OF OUTPUT
6100    LET I = 9 \ FOR I = 9 TO 12 \ REM BEGIN FASHION LOOP
6125    LET KEYNO$ = STUDNO$ + RW$(I)
6150    GET #2%, KEY #0% EQ KEYNO$ \ GOSUB 21100
6175    REM ACCUMULATE STYLE TOTALS
6200    OHU$ = SUM$(OHU$,L1$) \ REM ADD ON-HAND UNITS
6225    OHPL$ = SUM$(OHPL$,EA$) \ REM ADD PLAN UNITS
6250    OHD$ = SUM$(OHD$,K1$) \ REM ADD ON-HAND DOLLARS
6275    OHPLD$ = SUM$(OHPLD$,DA$) \ REM ADD ON-HAND PLAN DOLLARS
6300    OOU$ = SUM$(OOU$,HA$) \ REM ADD ON ORDER UNITS
6325    OOD$ = SUM$(OOD$,GA$) \ REM ADD ON ORDER DOLLARS
6350    LET II = II + 1
6375    GOSUB 6750 \ REM PUT DATA ON SCREEN
6400    NEXT I
6425    GOTO 6500
6450    REM TOTALS LINE OF OUTPUT
6475    REM
6500    CALL FDV$PUT(OHU$,"R29")
6525    CALL FDV$PUT(OHPL$,"R30")
6550    CALL FDV$PUT(OHD$,"R31")
6575    CALL FDV$PUT(OHPLD$,"R32")
6600    CALL FDV$PUT(OOU$,"R33")
6625    CALL FDV$PUT(OOD$,"R34")
6627    CALL FDV$PUT(PER$,"PER")
6630  OHU$ = "0" \ OHPL$ = "0" \ OHD$ = "0" \ OHPLD$ = "0"
6635  OOU$ = "0" \ OOD$ = "0"
6640  REM PRINT D1$
6641  REM  PRINT DA$
6642  REM  PRINT DB$
6650    CALL FDV$GET(STRIKE,0,"R36")
6675    GOTO 4875 \ REM RETURNS TO SELECTION SCREEN
6700    REM
6725    REM
6750    IF II = 9 THEN GOTO 6850
6775    IF II = 10 THEN GOTO 7100
6800    IF II = 11 THEN GOTO 7325
6825    IF II = 12 THEN GOTO 7575
6850    CALL FDV$PUT(L1$,"R1")
6875    CALL FDV$PUT(EA$,"R2")
6900    CALL FDV$PUT(K1$,"R3")
6925    CALL FDV$PUT(DA$,"R4")
6950    CALL FDV$PUT(HA$,"R5")
6975    CALL FDV$PUT(GA$,"R6")
7000    CALL FDV$PUT(PRICE$,"R7")
7025    GOTO 7800
```

```
7050    REM
7075    REM
7100    CALL FDV$PUT(L1$,"R8")
7125    CALL FDV$PUT(EA$,"R9")
7150    CALL FDV$PUT(K1$,"R10")
7175    CALL FDV$PUT(DA$,"R11")
7200    CALL FDV$PUT(HA$,"R12")
7225    CALL FDV$PUT(GA$,"R13")
7250    CALL FDV$PUT(PRICE$,"R14")
7275    GOTO 7800
7300    REM
7325    REM BEGIN THIRD LINE OF OUTPUT
7350    CALL FDV$PUT(L1$,"R15")
7375    CALL FDV$PUT(EA$,"R16")
7400    CALL FDV$PUT(K1$,"R17")
7425    CALL FDV$PUT(DA$,"R18")
7450    CALL FDV$PUT(HA$,"R19")
7475    CALL FDV$PUT(GA$,"R20")
7500    CALL FDV$PUT(PRICE$,"R21")
7525    GOTO 7800
7550    REM
7575    REM  BEGIN 4TH LINE OF OUTPUT
7600    CALL FDV$PUT(L1$,"R22")
7625    CALL FDV$PUT(EA$,"R23")
7650    CALL FDV$PUT(K1$,"R24")
7675    CALL FDV$PUT(DA$,"R25")
7700    CALL FDV$PUT(HA$,"R26")
7725    CALL FDV$PUT(GA$,"R27")
7750    CALL FDV$PUT(PRICE$,"R28")
7760    CALL FDV$PUT(STL$,"STLE")
7775    REM
7800    RETURN
7825    REM
7850    REM
7875    REM  THIS IS THE TOPS SCREEN FOR THE STOCK ANAL. BY STYL,SIZE,COLOR
7900    CALL FDV$CLRSH("SSST")
7925    LET Z = P% - 1
7950    IF CHS$ = "1" THEN GOTO 8050
7975    IF CHS$ = "2" THEN GOTO 8450
8000    GOTO 8875
8025    REM THIS  IS THE BASIC STYLE LOOP
8050    I = 13 \  II = 0 \ FOR I = 13 TO 18
8075    KEYNO$ = STUDNO$ + RW$(I)
8100    GET #2%, KEY #0% EQ KEYNO$ \ GOSUB 21100
8125    REM  ACCUMULATE STYLE TOTALS
8150    OHU$ = SUM$(OHU$,L1$) \ REM AD ON-HAND UNITS
8175    OHPL$ = SUM$(OHPL$,EA$) \ REM ADD PLAN UNITS
8200    OHD$ = SUM$(OHD$,K1$) \ REM ADD ON - HAND DOLLARS
```

```
8225    OHFLD$ = SUM$(OHFLD$,DA$) \ REM ADD ON-HAND PLAN DOLLARS
8250    OOU$ = SUM$(OOU$,HA$) \ REM ADD ON-ORDER UNITS
8275    OOD$ = SUM$(OOD$,GA$) \ REM ADD ON-ORDER DOLLARS
8300  LET II = II + 1
8325    GOSUB 9625 \ REM PUT DATA ON SCREEN
8350    NEXT I
8375    GOTO 9300 \ REM TOTALS LINE OF OUTPUT
8400    REM
8425    REM
8450    REM  THIS IS THE FASHION STYLE LOOP
8475    LET I = 19 \  II = 0 \ FOR I = 19 TO 24
8500    KEYNO$ = STUDNO$ + RW$(I)
8525    GET #2%, KEY #0% EQ KEYNO$ \ GOSUB 21100
8550    REM  ACCUMULATE STYLE TOTALS
8575    OHU$ = SUM$(OHU$,L1$) \ REM ADD ON-HAND UNITS
8600    OHFL$ = SUM$(OHFL$,EA$) \ REM ADD PLAN UNITS
8625    OHD$ = SUM$(OHD$,K1$) \ REM ADD ON-HAND DOLLARS
8650    OHFLD$ = SUM$(OHFLD$,DA$) \ REM ADD ON-HAND PLAN DOLLARS
8675    OOU$ = SUM$(OOU$,HA$) \ REM ADD ON-ORDER UNITS
8700    OOD$ = SUM$(OOD$,GA$) \ REM ADD ON-ORDER DOLLARS
8725    LET II = II + 1
8750    GOSUB 9625 \ REM PUT DATA ON SCREEN
8775    NEXT I
8800    GOTO 9300 \ REM TOTALS LINNE OF OUTPUT
8825    REM
8850    REM
8875    REM  THIS IS THE FAD STYLE LOOP
8900    LET I = 25 \  II = 0 \ FOR I = 25 TO 30
8925    KEYNO$ = STUDNO$ + RW$(I)
8950    GET #2%, KEY #0% EQ KEYNO$ \ GOSUB 21100
8975    REM  ACCUMULATE STYLE TOTALS
9000    OHU$ = SUM$(OHU$,L1$) \ REM ADD ON-HAND UNITS
9025    OHFL$ = SUM$(OHFL$,EA$) \ REM ADD PLAN UNITS
9050    OHD$ = SUM$(OHD$,K1$) \ REM ADD ON-HAND DOLLARS
9075    OHFLD$ = SUM$(OHFLD$,DA$) \ REM ADD ON-HAND PLAN DOLLARS
9100    OOU$ = SUM$(OOU$,HA$) \ REM ADD ON-ORDER UNITS
9125    OOD$ = SUM$(OOD$,GA$) \ REM ADD ON-ORDER DOLLARS
9150    LET II = II + 1
9175    GOSUB 9625  \ REM PUTDATA ON SCREEN
9200    NEXT I
9225    GOTO 9300  \ REM TOTALS LINE OF OUTPUT
9250    REM
9275    REM
9300    CALL FDV$PUT(OHU$,"J44")
9325    CALL FDV$PUT(OHFL$,"J45")
9350    CALL FDV$PUT(OHD$,"J46")
9375    CALL FDV$PUT(OHFLD$,"J47")
9400    CALL FDV$PUT(OOU$,"J48")
```

```
9425    CALL FDV$PUT(OOD$,"J49")
9430    CALL FDV$PUT(PER$,"PER")
9450    OHU$ = "0" \ OHPL$ = "0" \ OHPLD$ = "0" \ OOU$ = "0" \ OOD$ = "0"
9460  OHD$ = "0"
9475    CALL FDV$GET(RET,0,"J51")
9500    GOTO 4875 \ REM RETURNS TO SELECTION SCREEN
9525    REM
9550    REM
9575    REM
9600    REM BEGIN THE PUT DATA SUBROUTINE
9625    IF II = 1 THEN GOTO 9775
9650    IF II = 2 THEN GOTO 9975
9675    IF II = 3 THEN GOTO 10200
9700    IF II = 4 THEN GOTO 10425
9725    IF II = 5 THEN GOTO 10650
9750    IF II = 6 THEN GOTO 10875
9775    CALL FDV$PUT(L1$,"J2")
9800    CALL FDV$PUT(EA$,"J3")
9825    CALL FDV$PUT(K1$,"J4")
9850    CALL FDV$PUT(DA$,"J5")
9875    CALL FDV$PUT(HA$,"J6")
9900    CALL FDV$PUT(GA$,"J7")
9925    CALL FDV$PUT(PRICE$,"J8")
9950    GOTO 11125
9975    REM BEGIN THE 2ND LINE OF OUTPUT
10000   CALL FDV$PUT(L1$,"J9")
10025   CALL FDV$PUT(EA$,"J10")
10050   CALL FDV$PUT(K1$,"J11")
10075   CALL FDV$PUT(DA$,"J12")
10100   CALL FDV$PUT(HA$,"1JJ13")
10125   CALL FDV$PUT(GA$,"J14")
10150   CALL FDV$PUT(PRICE$,"J15")
10175   GOTO 11125
10200   REM BEGIN THE THIRD LIN OF OUTPUT
10225   CALL FDV$PUT(L1$,"J16")
10250   CALL FDV$PUT(EA$,"J17")
10275   CALL FDV$PUT(K1$,"J18")
10300   CALL FDV$PUT(DA$,"J19")
10325   CALL FDV$PUT(HA$,"J20")
10350   CALL FDV$PUT(GA$,"J21")
10375   CALL FDV$PUT(PRICE$,"J22")
10385    CALL FDV$PUT(STL$,"J1")
10400   GOTO 11125
10425   REM BEGIN THE 4TH LINE OF OUTPUT
10450   CALL FDV$PUT(L1$,"J23")
10475   CALL FDV$PUT(EA$,"J24")
10500   CALL FDV$PUT(K1$,"J25")
10525   CALL FDV$PUT(DA$,"J26")
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```
10550   CALL FDV$PUT(HA$,"J27")
10575   CALL FDV$PUT(GA$,"J28")
10600   CALL FDV$PUT(PRICE$,"J29")
10625   GOTO 11125
10650   REM BEGIN THE 5TH LINE OF OUTPUT
10675   CALL FDV$PUT(L1$,"J30")
10700   CALL FDV$PUT(EA$,"J31")
10725   CALL FDV$PUT(K1$,"J32")
10750   CALL FDV$PUT(DA$,"J33")
10775   CALL FDV$PUT(HA$,"J34")
10800   CALL FDV$PUT(GA$,"J35")
10825   CALL FDV$PUT(PRICE$,"J36")
10850   GOTO 11125
10875   REM BEGIN THE SIXTH LINE OF OUTPUT
10900   CALL FDV$PUT(L1$,"J37")
10925   CALL FDV$PUT(EA$,"J38")
10950   CALL FDV$PUT(K1$,"J39")
10975   CALL FDV$PUT(DA$,"J40")
11000   CALL FDV$PUT(HA$,"J41")
11025   CALL FDV$PUT(GA$,"J42")
11050   CALL FDV$PUT(PRICE$,"J43")
11075   REM
11100   REM
11125   RETURN
11150   REM THIS IS THE OPEN TO BUY PRINT SCREEN
11175   CALL FDV$CLRSH("SELEC2") \ REM PUTS UP SELECTION SCREEN
11200   CALL FDV$GET(CH$,0,"SLCT") \ REM TAKES CLASS CHOICE
11225   REM
11250    IF CH$ <> "1" THEN GOTO 11275
11255    CALL FDV$CLRSH("OTB") \ GOTO 11325
11275    IF CH$ <> "2" THEN GOTO 11285
11280    CALL FDV$CLRSH("OTB") \ GOTO 13000
11285    IF CH$ = "3" THEN GOTO 1000
11300   CALL FDV$PUTL("CHOICE MUST BE 1, 2, OR 3") \ GOTO 11200
11325   Z = P%
11350   T49$ = "JEANS"
11375    I = 1 \ FOR I = 1 TO 12
11400   LET KEYNO$ = STUDNO$ + RW$(I)
11425   GET #2%, KEY #0% EQ KEYNO$
11450   TS1$ = SUM$(TS1$,B1$)
11475   TS2$ = SUM$(TS2$,B2$)
11500   TS3$ = SUM$(TS3$,B3$)
11525   TS4$ = SUM$(TS4$,B4$)
11550   TS5$ = SUM$(TS5$,B5$)
11575   TS6$ = SUM$(TS6$,B6$)
11600   TMD1$ = SUM$(TMD1$,F1$)
11625   TMD2$ = SUM$(TMD2$,F2$)
11650   TMD3$ = SUM$(TMD3$,F3$)
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11675   TMD4$ = SUM$(TMD4$,F4$)
11700   TMD5$ = SUM$(TMD5$,F5$)
11725   TMD6$ = SUM$(TMD6$,F6$)
11750   TBOM1$ = SUM$(TBOM1$,D1$)
11775   TBOM2$ = SUM$(TBOM2$,D2$)
11800   TBOM3$ = SUM$(TBOM3$,D3$)
11825   TBOM4$ = SUM$(TBOM4$,D4$)
11850   TBOM5$ = SUM$(TBOM5$,D5$)
11875   TBOM6$ = SUM$(TBOM6$,D6$)
11900   TEOM1$ = SUM$(TEOM1$,D2$)
11925   TEOM2$ = SUM$(TEOM2$,D3$)
11950   TEOM3$ = SUM$(TEOM3$,D4$)
11975   TEOM4$ = SUM$(TEOM4$,D5$)
12000   TEOM5$ = SUM$(TEOM5$,D6$)
12025   TEOM6$ = SUM$(TEOM6$,"10.0")
12050   TO1$ = SUM$(TO1$,G1$)
12075   TO2$ = SUM$(TO2$,G2$)
12100   TO3$ = SUM$(TO3$,G3$)
12125   TO4$ = SUM$(TO4$,G4$)
12150   TO5$ = SUM$(TO5$,G5$)
12175   TO6$ = SUM$(TO6$,G6$)
12200   NEXT I
12225   REM PERFORM FINAL CALCULATIONS
12250   MN1$ = SUM$(TS1$,TMD1$)
12275   MN1$ = SUM$(MN1$,TEOM1$)
12300   MN2$ = SUM$(TS2$,TMD2$)
12325   MN2$ = SUM$(MN2$,TEOM2$)
12350   MN3$ = SUM$(TS3$,TMD3$)
12375   MN3$ = SUM$(MN3$,TEOM3$)
12400   MN4$ = SUM$(TS4$,TMD4$)
12425   MN4$ = SUM$(MN4$,TEOM4$)
12450   MN5$ = SUM$(TS5$,TMD5$)
12475   MN5$ = SUM$(MN5$,TEOM5$)
12500   MN6$ = SUM$(TS6$,TMD6$)
12525   MN6$ = SUM$(MN6$,TEOM6$)
12550   PP1$ = DIF$(MN1$,TBOM1$)
12575   PP2$ = DIF$(MN2$,TBOM2$)
12600   PP3$ = DIF$(MN3$,TBOM3$)
12625   PP4$ = DIF$(MN4$,TBOM4$)
12650   PP5$ = DIF$(MN5$,TBOM5$)
12675   PP6$ = DIF$(MN6$,TBOM6$)
12700   OTB1$ = DIF$(PP1$,TO1$)
12725   OTB2$ = DIF$(PP2$,TO2$)
12750   OTB3$ = DIF$(PP3$,TO3$)
12775   OTB4$ = DIF$(PP4$,TO4$)
12800   OTB5$ = DIF$(PP5$,TO5$)
12825   OTB6$ = DIF$(PP6$,TO6$)
12850   GOSUB 14750             \ REM PUT DATA ON SCREEN
```

```
12875   CALL FDV$GET(RESP,0,"T50")
12890    GOSUB 21750  \ REM ZERO OUT ACCUMULATORS
12900   GOTO 11175 \ REM RETURN TO SELECTION MENU
12925   REM
12950   REM
12975   REM
13000   REM BEGIN TOPS LOOP OF OPEN TO BUY SCREEN
13025   Z = F%
13050   T49$ ="TOPS"
13075   I = 13 \ FOR I = 13 TO 30
13100   LET KEYNO$ = STUDNO$ + RW$(I)
13125   GET #2%, KEY #0% EQ KEYNO$
13150   TS1$ = SUM$(TS1$,B1$)
13175   TS2$ = SUM$(TS2$,B2$)
13200   TS3$ = SUM$(TS3$,B3$)
13225   TS4$ = SUM$(TS4$,B4$)
13250   TS5$ = SUM$(TS5$,B5$)
13275   TS6$ = SUM$(TS6$,B6$)
13300   TMD1$ = SUM$(TMD1$,F1$)
13325   TMD2$ = SUM$(TMD2$,F2$)
13350   TMD3$ = SUM$(TMD3$,F3$)
13375   TMD4$ = SUM$(TMD4$,F4$)
13400   TMD5$ = SUM$(TMD5$,F5$)
13425   TMD6$ = SUM$(TMD6$,F6$)
13450   TBOM1$ = SUM$(TBOM1$,D1$)
13475   TBOM2$ = SUM$(TBOM2$,D2$)
13500   TBOM3$ = SUM$(TBOM3$,D3$)
13525   TBOM4$ = SUM$(TBOM4$,D4$)
13550   TBOM5$ = SUM$(TBOM5$,D5$)
13575   TBOM6$ = SUM$(TBOM6$,D6$)
13600   TEOM1$ = SUM$(TEOM1$,D2$)
13625   TEOM2$ = SUM$(TEOM2$,D3$)
13650   TEOM3$ = SUM$(TEOM3$,D4$)
13675   TEOM4$ = SUM$(TEOM4$,D5$)
13700   TEOM5$ = SUM$(TEOM5$,D6$)
13725   TEOM6$ = SUM$(TEOM6$,"10.0")
13750   TO1$ = SUM$(TO1$,G1$)
13775   TO2$ = SUM$(TO2$,G2$)
13800   TO3$ = SUM$(TO3$,G3$)
13825   TO4$ = SUM$(TO4$,G4$)
13850   TO5$ = SUM$(TO5$,G5$)
13875   TO6$ = SUM$(TO6$,G6$)
13900   NEXT I
13925   REM
13950   REM
13975   REM  PERFORM FINAL CALCULATIONS
14000   MN1$ = SUM$(TS1$,TMD1$)
14025   MN1$ = SUM$(MN1$,TEOM1$)
```

```
14050   MN2$ = SUM$(TS2$,TMD2$)
14075   MN2$ = SUM$(MN2$,TEOM2$)
14100   MN3$ = SUM$(TS3$,TMD3$)
14125   MN3$ = SUM$(MN3$,TEOM3$)
14150   MN4$ = SUM$(TS4$,TMD4$)
14175   MN4$ = SUM$(MN4$,TEOM4$)
14200   MN5$ = SUM$(TS5$,TMD5$)
14225   MN5$ = SUM$(MN5$,TEOM5$)
14250   MN6$ = SUM$(TS6$,TMD6$)
14275   MN6$ = SUM$(MN6$,TEOM6$)
14300   PP1$ = DIF$(MN1$,TBOM1$)
14325   PP2$ = DIF$(MN2$,TBOM2$)
14350   PP3$ = DIF$(MN3$,TBOM3$)
14375   PP4$ = DIF$(MN4$,TBOM4$)
14400   PP5$ = DIF$(MN5$,TBOM5$)
14425   PP6$ = DIF$(MN6$,TBOM6$)
14450   OTB1$ = DIF$(PP1$,TO1$)
14475   OTB2$ = DIF$(PP2$,TO2$)
14500   OTB3$ = DIF$(PP3$,TO3$)
14525   OTB4$ = DIF$(PP4$,TO4$)
14550   OTB5$ = DIF$(PP5$,TO5$)
14575   OTB6$ = DIF$(PP6$,TO6$)
14600   GOSUB 14750  \ REM PUT DATA ON SCREEN
14625   CALL FDV$GET(RESP,0,"T50")
14630    GOSUB 21750 \ REM ZERO OUT ACCUMULATORS
14650   GOTO 11175 \ REM RETURN TO SELECTION MENU
14675   REM
14700   REM
14725   REM  BEGIN THE "PUT" DATA SUBROUTINE
14750   CALL FDV$PUT(TS1$,"T1")
14775   CALL FDV$PUT(TS2$,"T2")
14800   CALL FDV$PUT(TS3$,"T3")
14825   CALL FDV$PUT(TS4$,"T4")
14850   CALL FDV$PUT(TS5$,"T5")
14875   CALL FDV$PUT(TS6$,"T6")
14900   CALL FDV$PUT(TMD1$,"T7")
14925   CALL FDV$PUT(TMD2$,"T8")
14950   CALL FDV$PUT(TMD3$,"T9")
14975   CALL FDV$PUT(TMD4$,"T10")
15000   CALL FDV$PUT(TMD5$,"T11")
15025   CALL FDV$PUT(TMD6$,"T12")
15050   CALL FDV$PUT(TEOM1$,"T13")
15075   CALL FDV$PUT(TEOM2$,"T14")
15100   CALL FDV$PUT(TEOM3$,"T15")
15125   CALL FDV$PUT(TEOM4$,"T16")
15150   CALL FDV$PUT(TEOM5$,"T17")
15175   CALL FDV$PUT(TEOM6$,"T18")
15200   CALL FDV$PUT(MN1$,"T19")
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```
15225   CALL FDV$PUT(MN2$,"T20")
15250   CALL FDV$PUT(MN3$,"T21")
15275   CALL FDV$PUT(MN4$,"T22")
15300   CALL FDV$PUT(MN5$,"T23")
15325   CALL FDV$PUT(MN6$,"T24")
15350   CALL FDV$PUT(TBOM1$,"T25")
15375   CALL FDV$PUT(TBOM2$,"T26")
15400   CALL FDV$PUT(TBOM3$,"T27")
15425   CALL FDV$PUT(TBOM4$,"T28")
15450   CALL FDV$PUT(TBOM5$,"T29")
15475   CALL FDV$PUT(TBOM6$,"T30")
15500   CALL FDV$PUT(PP1$,"T31")
15525   CALL FDV$PUT(PP2$,"T32")
15550   CALL FDV$PUT(PP3$,"T33")
15575   CALL FDV$PUT(PP4$,"T34")
15600   CALL FDV$PUT(PP5$,"T35")
15625   CALL FDV$PUT(PP6$,"TT36")
15650   CALL FDV$PUT(TO1$,"T37")
15675   CALL FDV$PUT(TO2$,"T38")
15700   CALL FDV$PUT(TO3$,"T39")
15725   CALL FDV$PUT(TO4$,"T40")
15750   CALL FDV$PUT(TO5$,"T41")
15775   CALL FDV$PUT(TO6$,"T42")
15800   CALL FDV$PUT(OTB1$,"T43")
15825   CALL FDV$PUT(OTB2$,"T44")
15850   CALL FDV$PUT(OTB3$,"T45")
15875   CALL FDV$PUT(OTB4$,"T46")
15900   CALL FDV$PUT(OTB5$,"T47")
15925   CALL FDV$PUT(OTB6$,"T48")
15935    CALL FDV$PUT(T49$,"T49")
15940    CALL FDV$PUT(PER$,"PER")
15950   REM
15975   RETURN
16000    REM  THIS BEGINS THE STOCK ORDER SCREEN
16025   CALL FDV$CLRSH("STKORD")
16030    CALL FDV$PUT(PER$,"PER")
16050   CALL FDV$GET(CLAS$,0,"CLAS")
16075   CALL FDV$GET(STYL$,0,"STYL")
16100   CALL FDV$GET(SIZE$,0,"SIZE")
16125   CALL FDV$GET(COLOR$,0,"COLR")
16150   CALL FDV$GET(QUANT$,0,"QUAN")
16175   CALL FDV$GET(PRIC$,0,"PRC")
16200   IF CLAS$ = "1"  OR CLAS$ = "2" THEN GOTO  16250
16225   CALL FDV$PUTL("CLASS MUST BE 1 OR 2") \GOTO 16050
16250   IF STYL$ = "1" OR STYL$ = "2" OR STYL$ = "3" THEN GOTO 16300
16275   CALL FDV$PUTL("STYLE MUST BE 1, 2, OR 3") \ GOTO 16075
16300   IF CLAS$ <> "1" THEN GOTO 16375
16325   IF SIZE$ = "5" OR SIZE$ = "7" OR SIZE$ = "9" OR SIZE$ = "11"  GOTO 16425
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16350   CALL FDV$PUTL("SIZE MUST BE 5, 7, 9, OR 11")\ GOTO 16100
16375   IF SIZE$ = "S" OR SIZE$ = "M" OR SIZE$ = "L" THEN GOTO 16475
16400   CALL FDV$PUTL("SIZE MUST BE S, M, OR L") \ GOTO 16100
16410  IF CLAS$ = "2" THEN GOTO 16475
16425   IF CLAS$ = "1" AND COLOR$ = "1" THEN GOTO 16627
16450   CALL FDV$PUTL("COLOR MUST BE 1") \ GOTO 16125
16475   IF CLAS$ = "2" AND COLOR$ = "1" THEN GOTO 16627
16500   IF CLAS$ = "2" AND COLOR$ = "2" THEN GOTO 16627
16525   CALL FDV$PUTL("COLOR MUST BE 1 OR 2") \ GOTO 16125
16627    FLAG5$ = " " \ I = 1 \ FOR I = 1 TO 3 \ IF SEG$(QUANT$,I,I) = "" THEN
             GOTO 16629
16628    IF SEG$(QUANT$,I,I) < "0" OR SEG$(QUANT$,I,I) > "9" THEN FLAG5$ = "ON"
16629  NEXT I
16631  IF FLAG5$ = "ON" THEN CALL FDV$PUTL("YOU MUST ENTER A NUMBER")
16633  IF FLAG5$ = "ON" THEN GOTO 16150
16635  FLAG5$ = " " \ I% = 1 \ FOR I% = 1 TO 5
16637  IF SEG$(PRIC$,I%,I%) < "0" THEN GOSUB 16648
16639  IF SEG$(PRIC$,I%,I%) > "9" THEN GOSUB 16648
16641  NEXT I%
16643  IF PRIC$ = "" THEN FLAG5$ = "ON"
16645  IF FLAG5$ = "ON" THEN CALL FDV$PUTL("YOU MUST ENTER A NUMBER")
16646  IF FLAG5$ = "ON" THEN GOTO 16175 ELSE GOTO 16670
16648  IF SEG$(PRIC$,I%,I%) = "." THEN GOTO 16652
16650  IF SEG$(PRIC$,I%,I%) = "" THEN GOTO 16652 ELSE FLAG5$ = "ON"
16652  RETURN
16670  SIZE$ = TRM$(SIZE$) \ IF SIZE$ = "S" OR SIZE$ = "5" THEN SIZE$ = "1"
16671  IF SIZE$ = "M" OR SIZE$ = "7" THEN SIZE$ = "2"
16672  IF SIZE$ = "L" OR SIZE$ = "9" THEN SIZE$ = "3"
16673  IF SIZE$ = "11" THEN SIZE$ = "4"
16674    KEYNO$ = STUDNO$ + CLAS$ + STYL$ + SIZE$ + COLOR$
16675   IF LEN(KEYNO$) = 10 THEN GOTO 16680
16677   CALL FDV$PUTL("PLEASE RETYPE THIS ORDER") \ GOTO 16050
16680   GET #2%, KEY #0% EQ KEYNO$
16685    PRICE$ = PRIC$
16725    IF P% = 1 THEN H1$ = SUM$(H1$,QUANT$)\IF P% = 1 THEN G1$ = PROD$(H1$,PR
ICE$,0%) \ IF P% = 1 THEN G1$ = QUO$(G1$,"1000",1%)
16750    IF P% = 2 THEN H2$ = SUM$(H2$,QUANT$)\IF P% = 2 THEN G2$ = PROD$(H2$,PR
ICE$,0%) \ IF P% = 2 THEN G2$ = QUO$(G2$,"1000",1%)
16775    IF P% = 3 THEN H3$ = SUM$(H3$,QUANT$)\IF P% = 3 THEN G3$ = PROD$(H3$,PR
ICE$,0%) \ IF P% = 3 THEN G3$ = QUO$(G3$,"1000",1%)
16800    IF P% = 4 THEN H4$ = SUM$(H4$,QUANT$)\IF P% = 4 THEN G4$ = PROD$(H4$,PR
ICE$,0%) \ IF P% = 4 THEN G4$ = QUO$(G4$,"1000",1%)
16825    IF P% = 5 THEN H5$ = SUM$(H5$,QUANT$)\IF P% = 5 THEN G5$ = PROD$(H5$,PR
ICE$,0%)\ IF P% = 5 THEN G5$ = QUO$(G5$,"1000",1%)
16850  IF P% = 6 THEN H6$ = SUM$(H6$,QUANT$)\IF P% = 6 THEN G6$ = PROD$(H6$,PRIC
E$,0%) \ IF P% = 6 THEN G6$ = QUO$(G6$,"1000",1%)
16875   UPDATE #2%
16880  CLAS$ = ""\ STYL$ = ""\ SIZE$ = ""\ COLOR$ = ""\ QUANT$ = ""\PRIC$ = ""
```

```
16900   CALL FDV$CLRSH("QUES") \ REM QUESTION SCREEN
16925   CALL FDV$GET(CHOIC$,0,"CHC")
16950   IF CHOIC$ = "Y" THEN GOTO 16025
16975   IF CHOIC$ = "N" THEN GOTO 17025
17000   CALL FDV$PUTL("YOU MUST TYPE Y OR N") \ GOTO 16925
17025   CALL FDV$CLRSH("PLEAD") \ REM PLEAD SCREEN
17050   CALL FDV$GET(PLEA$,0,"PL")
17075   IF PLEA$ = "N" THEN GOTO 16025
17100   IF PLEA$ = "Y" THEN GOTO 17150
17125   CALL FDV$PUTL("YOU MUST TYPE Y OR N") \ GOTO 17050
17150   KEYNO$ = STUDNO$ + "0000"
17175   GET #2%, KEY #0% EQ KEYNO$
17200   PRICE$ = SUM$(PRICE$,"1")
17225   UPDATE #2%
17250   REM
17255    CALL FDV$PUTL("SALES ACTIVITY IS BEING SIMULATED.WE'RE PUSHING YOUR GOO
DS,TOOTSIE")
17275   REM
17300   REM
17325   REM BEGIN THE MARKET SIMULATION
17350   DIM TRND$(6,6)
17375   TRND$(0,0) = "2.28"
17400   TRND$(0,1) = "4.09"
17425   TRND$(0,2) = "2.17"
17450   TRND$(0,3) = "1.52"
17475   TRND$(0,4) = "1.59"
17500   TRND$(0,5) = "1.71"
17525   TRND$(1,0) = "1.52"
17550   TRND$(1,1) = "2.73"
17575   TRND$(1,2) = "1.44"
17600   TRND$(1,3) = "1.01"
17625   TRND$(1,4) = "1.06"
17650   TRND$(1,5) = "1.14"
17675   TRND$(2,0) = "1.26"
17700   TRND$(2,1) = "2.27"
17725   TRND$(2,2) = "1.1"
17750   TRND$(2,3) = ".84"
17775   TRND$(2,4) = ".88"
17800   TRND$(2,5) = ".95"
17825   TRND$(3,0) = "3.24"
17850   TRND$(3,1) = "5.82"
17875   TRND$(3,2) = "3.09"
17900   TRND$(3,3) = "2.17"
17925   TRND$(3,4) = "2.26"
17950   TRND$(3,5) = "2.44"
17975   TRND$(4,0) = "3.24"
18000   TRND$(4,1) = "5.82"
18025   TRND$(4,2) = "3.09"
```

```
18050   TRND$(4,3) = "2.17"
18075   TRND$(4,4) = "2.26"
18100   TRND$(4,5) = "2.44"
18125   TRND$(5,0) = "1.62"
18150   TRND$(5,1) = "2.91"
18175   TRND$(5,2) = "1.54"
18200   TRND$(5,3) = "1.08"
18225   TRND$(5,4) = "1.13"
18250   TRND$(5,5) = "1.22"
18275   DIM RETPR$(5)
18300   REM LOAD THE RETAIL PRICE ARRAY
18325   RETPR$(0) = "25"
18350   RETPR$(1) = "18"
18375   RETPR$(2) = "35"
18400   RETPR$(3) = "20"
18425   RETPR$(4) = "25"
18450   RETPR$(5) = "30"
18475   I = 1\ FOR I = 1 TO 30
18500   LET KEYNO$ = STUDNO$ + RW$(I)
18525   GET #2%, KEY #0% EQ KEYNO$
18529    LET COLOR$ = SEG$(RECNO$,10%,10%)
18531    LET CLAS$ = SEG$(RECNO$,7%,7%)
18532    LET STYLE$ = SEG$(RECNO$,8%,8%)
18550   Z = P% - 1
18575   REM  IF Z = 0 THEN Z = 1
18600   IF I > 4 THEN GOTO 18700
18625   LET ZZ$ = TRND$(0,Z)
18650   MKTPR$ = RETPR$(0)
18675    GOTO 19175
18700   IF I > 8 THEN GOTO 18800
18725   LET ZZ$ = TRND$(1,Z)
18750   MKTPR$ = RETPR$(1)
18775    GOTO 19175
18800   IF I > 12 THEN GOTO 18900
18825   LET ZZ$ = TRND$(2,Z)
18850   MKTPR$ = RETPR$(2)
18875    GOTO 19175
18900   IF I > 18 THEN GOTO 19000
18925   LET ZZ$ = TRND$(3,Z)
18950   MKTPR$ = RETPR$(3)
18975    GOTO 19175
19000   IF I > 24 THEN GOTO 19100
19025   LET ZZ$ = TRND$(4,Z)
19050   MKTPR$ = RETPR$(4)
19075    GOTO 19175
19100   ZZ$ = TRND$(5,Z)
19125   MKTPR$ = RETPR$(5)
19150   REM
```

```
19175   REM
19200   DIFF$ = QUO$(PRICE$,MKTPR$,2%)
19225   DIFF$ = DIF$("1",DIFF$)
19250   IF DIFF$ => ".1" THEN GOTO 19350
19275   GOSUB 20875             \ REM GO GET A RANDOM NUMBER
19300   IF RNDOM% => 80 THEN PRDMND$ = "1.2" ELSE PRDMND$ = "1.0"
19325   GOTO 19500    \ REM GOTO END OF PRDMND STUFF
19350   IF DIFF$ => ".4" THEN GOTO 19475
19375   GOSUB 20875             \ REM GO GET A RANDOM NUMBER
19400   IF RNDOM% => 60 THEN PRDMND$ = "1.2" ELSE PRDMND$ = "1.0"
19425   GOTO 19500
19450    GOSUB 20875             \REM GO GET A RANDOM NUMBER
19475   IF RNDOM% => 80 THEN PRDMND$ = "1.0" ELSE PRDMND$ = "1.2"
19477    IF I = 1 OR I = 5 OR I = 9 THEN SIZE$ = "5" \ IF I = 2 OR I = 6 OR I =
           10 THEN SIZE$ = "7"
19479    IF I = 3 OR I = 7 OR I = 11 THEN SIZE$ = "9" \ IF I = 4 OR I = 8 OR I =
           12 THEN SIZE$ = "11"
19481    IF I = 13 OR I = 14 OR I = 19 OR I = 20 OR I = 25 OR I = 26 THEN SIZE$
           = "S"
19483    IF I = 15 OR I = 16 OR I = 21 OR I = 22 OR I = 27 OR I = 28 THEN SIZE$
           = "M"
19485    IF I = 17 OR I = 18 OR I = 23 OR I = 24 OR I = 29 OR I = 30 THEN SIZE$
         = "L"
19500   IF SIZE$ = "S" THEN SIZADJ$ = ".33"
19525   IF SIZE$ = "M" THEN SIZADJ$ = ".5"
19550   IF SIZE$ = "L" THEN SIZADJ$ = ".17"
19575   IF SIZE$ = "5" THEN SIZADJ$ = ".2"
19600   IF SIZE$ = "7" THEN SIZADJ$ = ".3"
19625   IF SIZE$ = "9" THEN SIZADJ$ = ".3"
19650   IF SIZE$ = "11" THEN SIZADJ$ = ".2"
19675   IF COLOR$ = "1" AND CLAS$ = "1" THEN COLADJ$ = "1"
19700   IF COLOR$ = "1" AND CLAS$ = "2" THEN COLADJ$ = ".4"
19725   IF COLOR$ = "2" AND CLAS$ = "2" THEN COLADJ$ = ".6"
19750   IF CLAS$ = "1" AND STYL$ = "1" THEN BAS$ = "22.3"
19775   IF CLAS$ = "1" AND STYL$ = "2" THEN BAS$ = "14.9"
19800   IF CLAS$ = "1" AND STYL$ = "3" THEN BAS$ = "12.4"
19825   IF CLAS$ = "2" AND STYL$ = "1" THEN BAS$ = "27.0"
19850   IF CLAS$ = "2" AND STYL$ = "2" THEN BAS$ = "27.1"
19875   IF CLAS$ = "2" AND STYL$ = "3" THEN BAS$ = "15.9"
19880    BAS$ = "10.0"
19900   GOSUB 20875               \ REM GET A RANDOM NUMBER
19925   IF RNDOM% > 29 THEN GOTO 20000
19950   RNDDMD$ = ".8"
19975   GOTO 20175
20000   IF RNDOM% > 50 THEN GOTO 20075
20025   RNDDMD$ = "1.2"
20050   GOTO 20175
20075   IF RNDOM% > 80 THEN GOTO 20150
```

```
20100   RNDDMD$ = ".95"
20125   GOTO 20175
20150   RNDDMD$ = "1.0"
20175   REM
20200   REM
20225   DEMAND$ = PROD$(BAS$,ZZ$,1%)
20250   DEMAND$ = PROD$(DEMAND$,PRDMND$,1%)
20275   DEMAND$ = PROD$(DEMAND$,SIZADJ$,1%)
20300   DEMAND$ = PROD$(DEMAND$,COLADJ$,1%)
20325   DEMAND$ = PROD$(DEMAND$,RNDDMD$,1%)
20327  REM PRINT BAS$ ,PRDMND$ ,SIZADJ$ ,COLADJ$ ,RNDDMD$ ,DEMAND$
20330  REM  ADD ON ORDER STOCK TO AVAILABLE STOCK
20335  IF P% = 2 THEN K1$ = SUM$(K1$,G1$) \ IF P% = 2 THEN L1$ = SUM$(H1$,L1$)
20337  IF P% = 3 THEN K1$ = SUM$(K1$,G2$) \ IF P% = 3 THEN L1$ = SUM$(H2$,L1$)
20339  IF P% = 4 THEN K1$ = SUM$(K1$,G3$) \ IF P% = 4 THEN L1$ = SUM$(H3$,L1$)
20341  IF P% = 5 THEN K1$ = SUM$(K1$,G4$) \ IF P% = 5 THEN L1$ = SUM$(H4$,L1$)
20343  IF P% = 6 THEN K1$ = SUM$(K1$,G5$) \ IF P% = 6 THEN L1$ = SUM$(H5$,L1$)
20345  REM IF P% = 6 THEN K1$ = SUM$(K1$,G6$) \ IF P% = 6 THEN L1$ = SUM$(H6$,L1
$)
20350   REM
20375   REM THIS IS THE SECTION TO MODIFY RECORDS AFTER THE SIM IS THROUGH
20400   CURSTOCK$ = DIF$(K1$,DEMAND$) \ REM GET NEW CURRENT STOCK IN DOLLARS
20425    IF VAL(CURSTOCK$) < 0 THEN CURSTOCK$ = "0.0"
20450    CURUNITS$ = QUO$(CURSTOCK$,PRICE$,3%)\CURUNITS$ = PROD$(CURUNITS$,"1000
",0%)
20525    IF VAL(CURSTOCK$) > 0 THEN J1$ = DEMAND$
20527    IF VAL(CURSTOCK$) <= 0 THEN J1$ = K1$
20550   L1$ = CURUNITS$
20575   K1$ = CURSTOCK$
20600   IF P% = 1 THEN D1$ = K1$
20625   IF P% = 2 THEN D2$ = K1$
20650   IF P% = 3 THEN D3$ = K1$
20675   IF P% = 4 THEN D4$ = K1$
20700   IF P% = 5 THEN D5$ = K1$
20725   IF P% = 6 THEN D6$ = K1$
20730    REM  PRINT DEMAND$ ,J1$ ,K1$ ,L1$ ,D2$ ,CURUNITS$ ,CURSTOCK$
20750   UPDATE #2%
20775   NEXT I
20780    LET P% = P% + 1 \ LET PER$ = SUM$(PER$,"1")
20800   GOTO 1000 \ REM RETURN TO MAIN MENU
20825   REM
20850   REM
20875   REM
20900   RANDOMIZE
20925   RNDOM% = RND * 100 \ RANNUM$ = STR$(RNDOM%)
20950   RANNUM$ = PLACE$(RANNUM$,10000%)
20975   RNDOM% = VAL%(RANNUM$)
21000   RETURN
```

```
21025   REM
21050   REM
21075   REM
21100   IF P% <> 1 THEN GOTO 21200
21125   AA$ = A1$ \ AB$ = A1$ \ BA$ = B1$ \ BB$ = B1$ \ CA$ = C1$ \ CB$ = C1$
21150   DA$ = D1$ \ DB$ = D1$ \ EA$ = E1$ \ EB$ = E1$ \ FA$ = F1$ \ FB$ = F1$
21175   GA$ = G1$ \ HA$ = H1$ \ HB$ = H1$ \ GB$ = G1$
21200   IF P% <> 2 THEN GOTO 21300
21225   AA$ = A2$ \ AB$ = A1$ \ BA$ = B2$ \ BB$ = B1$ \ CA$ =C2$ \ CB$ = C1$
21250   DA$ = D2$ \ DB$ = D1$ \ EA$ = E2$ \ EB$ = E1$ \ FA$ = F2$ \ FB$ = F1$
21275   GA$ = G2$ \ GB$ = G1$ \ HA$ = H2$ \ HB$ = H1$
21300   IF P% <> 3 THEN GOTO 21400
21325   AA$ = A3$ \ AB$ = A2$ \ BA$ = B3$ \ BB$ = B2$ \ CA$ = C3$ \ CB$ = C2$
21350   DA$ = D3$ \ DB$ = D2$ \ EA$ = E3$ \ EB$ = E2$ \ FA$ = F3$ \ FB$ = F2$
21375   GA$ = G3$ \ GB$ = G2$ \ HA$ = H3$ \ HB$ = H2$
21400   IF P% <> 4 THEN GOTO 21500
21425   AA$ = A4$ \ AB$ = A3$ \ BA$ = B4$ \ BB$ = B3$ \ CA$ = C4$ \ CB$ = C3$
21450   DA$ = D4$ \ DB$ = D3$ \ EA$ = E4$ \ EB$ = E3$ \ FA$ = F4$ \ FB$ = F3$
21475   GA$ = G4$ \ GB$ = G3$ \ HA$ = H4$ \ HB$ = H3$
21500   IF P% <> 5 THEN GOTO 21600
21525   AA$ = A5$ \ AB$ = A4$ \ BA$ = B5$ \ BB$ = B4$ \ CA$ = C5$ \ CB$ = C4$
21550   DA$ = D5$ \ DB$ = D4$ \ EA$ = E5$ \ EB$ = E4$ \ FA$ = F5$ \ FB$ = F4$
21575   GA$ = G5$ \ GB$ = G4$ \ HA$ = H5$ \ HB$ = H4$
21600   IF P% <> 6 THEN GOTO 21700
21625   AA$ = A6$ \ AB$ = A5$ \ BA$ = B6$ \ BB$ = B5$ \ CA$ = C6$ \ CB$ = C5$
21650   DA$ = D6$ \ DB$ = D5$ \ EA$ = E6$ \ EB$ = E5$ \ FA$ = F6$ \ FB$ = F5$
21675   GA$ = G6$ \ GB$ = G5$ \ HA$ = H6$ \ HB$ = H5$
21700   RETURN
21725   REM
21750    TS1$ = "0"\TS2$ = "0"\TS3$ = "0"\TS4$ = "0"\TS5$ = "0"\TS6$ = "0"
21760    TMD1$ = "0"\TMD2$ = "0"\TMD3$ = "0"\TMD4$ = "0"\TMD5$ = "0"\TMD6$ = "0"
21770    TBOM1$ = "0"\TBOM2$ = "0"\TBOM3$ = "0"\TBOM4$ = "0"\TBOM5$ = "0"\TBOM6$
         = "0"
21775   REM
21780    TEOM1$ = "0"\TEOM2$ = "0"\TEOM3$ = "0"\TEOM4$ = "0"\TEOM5$ = "0"\
           TEOM6$ = "0"
21790    TO1$ = "0"\TO2$ = "0"\TO3$ = "0"\TO4$ = "0"\TO5$ = "0"\TO6$ = "0"
21800    MN1$ = "0"\MN2$ = "0"\MN3$ = "0"\MN4$ = "0"\MN5$ = "0"\MN6$ = "0"
21810    PP1$ = "0"\PP2$ = "0"\PP3$ = "0"\PP4$ = "0"\PP5$ = "0"\PP6$ = "0"
21820    OTB1$ = "0"\OTB2$ = "0"\OTB3$ = "0"\OTB4$ = "0"\OTB5$ = "0"\OTB6$ = "0"
21825   REM
21830    RETURN
21850   I = 1 \ FOR I = 1 TO 25
21875    PRINT \ NEXT I
21900    I = 1 \ FOR I = 1 TO 12\ PRINT \ NEXT I
21925    PRINT "THANKS FOR PLAYING RETAIL SIMULATION I - UNIT AND DOLLAR CONTROL
"
21950    PRINT "REMEMBER TO TURN OFF THE TERMINAL"
21975    END
```

Load Program for the Unit and Dollar Control Simulation

```
      LDFIL.BAS
100     REM  THIS IS THE SIMULATION I LOAD PROGRAM.  IT PUTS INITIAL VALUES
125     REM  INTO FIELDS AND WRITES RECORDS FOR EACH PARTICIPANT.
150     REM  BEGIN BY PERFORMING HOUSEKEEPING DUTIES.
175    MAP(LDREC) KEYNO$ = 10% , PRICE$ = 5% , A1$ = 5% , B1$ = 5%          &
           , C1$ = 5% , D1$ = 5% , E1$ = 5% , F1$ = 5% , G1$ = 5%          &
           , H1$ = 5% , A2$ = 5% , B2$ = 5% , C2$ = 5% , D2$ = 5%          &
           , E2$ = 5% , F2$ = 5% , G2$ = 5% , H2$ = 5% , A3$ = 5%          &
           , B3$ = 5% , C3$ = 5% , D3$ = 5% , E3$ = 5% , F3$ = 5%          &
           , G3$ = 5% , H3$ = 5% , A4$ = 5% , B4$ = 5% , C4$ = 5%          &
           , D4$ = 5% , E4$ = 5% , F4$ = 5% , G4$ = 5% , H4$ = 5%          &
           , A5$ = 5% , B5$ = 5% , C5$ = 5% , D5$ = 5% , E5$ = 5%          &
           ,F5$ = 5% , G5$ = 5%  , H5$ = 5% , A6$ = 5% , B6$ = 5%          &
           , C6$ = 5% , D6$ = 5% , E6$ = 5%          &
           , F6$ = 5% , G6$ = 5% , H6$ = 5% , I1$ = 5% , J1$ = 5%          &
           , K1$ = 5% , L1$ = 5%
200     OPEN "STOR.VLT" FOR OUTPUT AS FILE  #1%                             &
            ,ORGANIZATION INDEXED FIXED                          &
            ,ACCESS MODIFY , ALLOW MODIFY                          &
            ,MAP LDREC , PRIMARY KEY KEYNO$
225     REM LOAD ARRAYS
250     DIM RW$(30)
275     RW$(1)  = "1111" \RW$(2) = "1121"  \RW$(3) = "1131" \RW$(4) = "1141"
300     RW$(5) = "1211" \RW$(6) = "1221" \RW$(7) = "1231" \RW$(8) = "1241"
325     RW$(9) = "1311" \RW$(10) = "1321" \RW$(11) = "1331" \RW$(12) = "1341"
350     RW$(13) = "2111" \RW$(14) = "2112" \RW$(15) = "2121" \RW$(16) = "2122"
375     RW$(17) = "2131" \RW$(18) = "2132" \RW$(19) = "2211" \RW$(20) = "2212"
400     RW$(21) = "2221" \RW$(22) = "2222" \RW$(23) = "2231" \RW$(24) = "2232"
425     RW$(25) = "2311" \RW$(26) = "2312" \RW$(27) = "2321" \RW$(28) = "2322"
450     RW$(29) = "2331" \RW$(30) = "2332"
455   REM ************************************************************
457   REM ************************************************************
459    REM  GOTO 7100
475     REM LOAD PLAN SALES ARRAY
500     DIM PS$(12)
525     REM 1ST SIX SPACES ARE JEANS - NEXT SIX ARE TOPS
550     PS$(1) = "50.8"
575     PS$(2) = "91.0"
600     PS$(3) = "48.3"
625     PS$(4) = "34.0"
650     PS$(5) = "35.4"
```

```
675     PS$(6) = "38.2"
700     PS$(7) = "81.2"
725     PS$(8) = "145.6"
750     PS$(9) = "77.3"
775     PS$(10) = "54.3"
800     PS$(11) = "56.6"
825     PS$(12) = "61.0"
850     REM
875     REM
900     REM  LOAD LAST YEAR SALES
925     DIM LYS$(12)
950   LYS$(1) = "43.3"
975   LYS$(2) = "74.5"
1000   LYS$(3) = "44.0"
1025   LYS$(4) = "43.2"
1050   LYS$(5) = "35.7"
1075   LYS$(6) = "47.7"
1100   LYS$(7) = "69.2"
1125   LYS$(8) = "81.5"
1150   LYS$(9) = "43.3"
1175   LYS$(10) = "54.7"
1200   LYS$(11) = "57.1"
1225   LYS$(12) = "76.3"
1250    REM
1275    REM
1300    REM LOAD PLANNED EOM ARRAY
1325    DIM PEOM$(12)
1350    PEOM$(1) = "203.8"
1375    PEOM$(2) = "161.1"
1400    PEOM$(3) = "146.8"
1425    PEOM$(4) = "148.2"
1450    PEOM$(5) = "151.0"
1475    PEOM$(6) = "146.6"
1500    PEOM$(7) = "326.1"
1525    PEOM$(8) = "257.8"
1550    PEOM$(9) = "234.8"
1575    PEOM$(10) = "237.0"
1600    PEOM$(11) = "241.5"
1625    PEOM$(12) = "234.5"
1650    REM
1675    REM
1700    REM LOAD LAST YEAR'S END OF MONTH
1725    DIM LYEOM$(12)
1750    LYEOM$(1) = "106.2"
1775    LYEOM$(2) = "142.1"
1800    LYEOM$(3) = "118.3"
1825    LYEOM$(4) = "100.3"
1850    LYEOM$(5) = "118.0"
```

```
1875    LYEOM$(6) = "140.1"
1900    LYEOM$(7) = "170.0"
1925    LYEOM$(8) = "227.3"
1950    LYEOM$(9) = "189.2"
1975    LYEOM$(10) = "160.5"
2000    LYEOM$(11) = "188.7"
2025    LYEOM$(12) = "224.1"
2050    REM
2075    REM
2100    REM  LOAD PLANNED REDUCTIONS ARRAY
2125    DIM PRED$(12)
2150    PRED$(1) = "7.7"
2175    PRED$(2) = "13.7"
2200    PRED$(3) = "8.1"
2225    PRED$(4) = "6.3"
2250    PRED$(5) = "6.5"
2275    PRED$(6) = "8.4"
2300    PRED$(7) = "12.3"
2325    PRED$(8) = "21.8"
2350    PRED$(9) = "12.9"
2375    PRED$(10) = "10.1"
2400    PRED$(11) = "10.4"
2425    PRED$(12) = "13.4"
2450    REM
2475    REM
2500    REM  LOAD PLANNED BOM ARRAY
2525    DIM PBOM$(12)
2550    PBOM$(1) = "163.6"
2575    PBOM$(2) = "203.8"
2600    PBOM$(3) = "161.1"
2625    PBOM$(4) = "146.8"
2650    PBOM$(5) = "148.2"
2675    PBOM$(6) = "141.0"
2700    PBOM$(7) = "261.7"
2725    PBOM$(8) = "326.1"
2750    PBOM$(9) = "257.8"
2775    PBOM$(10) = "234.8"
2800    PBOM$(11) = "237.0"
2825    PBOM$(12) = "221.0"
2850    REM
2875    REM
2900    REM  LOAD LAST YEAR BOM ARRAY
2925    DIM LYBOM$(12)
2950    LYBOM$(1) = "89.9"
2975    LYBOM$(2) = "106.2"
3000    LYBOM$(3) = "142.1"
3025    LYBOM$(4) = "118.3"
3050    LYBOM$(5) = "100.3"
```

```
3075    LYBOM$(6) = "118.0"
3100    LYBOM$(7) = "143.8"
3125    LYBOM$(8) = "170.0"
3150    LYBOM$(9) = "227.3"
3175    LYBOM$(10) = "189.2"
3200    LYBOM$(11) = "160.6"
3225    LYBOM$(12) = "188.7"
3250    REM
3275    REM
3300    REM LOAD PLANNED PURCHASES ARRAY
3325    DIM PPUR$(12)
3350    PPUR$(1) = "91.0"
3375    PPUR$(2) = "48.3"
3400    PPUR$(3) = "34.0"
3425    PPUR$(4) = "35.4"
3450    PPUR$(5) = "38.2"
3475    PPUR$(6) = "33.8"
3500    PPUR$(7) = "145.6"
3525    PPUR$(8) = "77.3"
3550    PPUR$(9) = "54.3"
3575    PPUR$(10) = "56.6"
3600    PPUR$(11) = "61.0"
3625    PPUR$(12) = "54.0"
3650    REM
3675    REM
3700    REM LOAD LAST YEAR'S PURCHASES ARRAY
3725    DIM LYPUR$(12)
3750    LYPUR$(1) = "80.4"
3775    LYPUR$(2) = "117.3"
3800    LYPUR$(3) = "39.2"
3825    LYPUR$(4) = "25.1"
3850    LYPUR$(5) = "59.1"
3875    LYPUR$(6) = "77.0"
3900    LYPUR$(7) = "128.7"
3925    LYPUR$(8) = "187.7"
3950    LYPUR$(9) = "62.7"
3975    LYPUR$(10) = "40.1"
4000    LYPUR$(11) = "94.6"
4025    LYPUR$(12) = "123.3"
4050    REM
4075    REM
4100    REM SET ON ORDER UNITS AND DOLLARS TO ZERO
4125    DIM ONORD$(12)
4150    ONORD$(1) = "72.8"
4175    ONORD$(2) = "38.6"
4200    ONORD$(3) = "27.2"
4225    ONORD$(4) = "28.3"
4250    ONORD$(5) = "30.5"
```

```
4275    UNORD$(6) = "20.0"
4300    UNORD$(7) = "116.5"
4325    UNORD$(8) = "61.8"
4350    UNORD$(9) = "43.5"
4375    UNORD$(10) = "45.2"
4400    UNORD$(11) = "48.8"
4410    UNORD$(12) = "30.0"
4425    J1$ = "00000"
4450    K1$ = "00000"
4475    L1$ = "00000"
4500    REM
4525    REM
4550    REM BEGIN ACCEPTING STUDENT NUMBERS
4575    PRINT "ENTER ALL ZEROS TO EXIT"
4600    INPUT "PLEASE KEY IN A STUDENT NUMBER";STUDNO$
4625    FLAG1$ = " "
4650    LET Z% = 1 \ FOR Z% = 1 TO 6
4675    IF SEG$(STUDNO$,Z%,Z%) < "0" OR SEG$(STUDNO$,Z%,Z%) > "9" THEN FLAG1$ =
"ON"
4700    NEXT Z%
4725    IF FLAG1$ = "ON" THEN PRINT "TRY AGAIN"
4750    IF FLAG1$ = "ON" THEN GOTO 4575
4760  IF STUDNO$ = "000000" THEN GOTO 7100
4765  PRICE$ = "1" \ KEYNO$ = STUDNO$ + "0000"
4770  PUT #1%
4775    I = 1 \ FOR I = 1 TO 30
4800    REM
4825    REM BEGIN THE RECORD WRITING LOOP
4850    IF I <= 4 THEN PRICE$ = "25.00"
4875    IF I > 4 AND I <= 8 THEN PRICE$ = "18.00"
4900    IF I > 8 AND I <= 12 THEN PRICE$ = "35.00"
4925    IF I > 12 AND I <= 18 THEN PRICE$ = "20.00"
4950    IF I > 18 AND I <= 24 THEN PRICE$ = "25.00"
4975    IF I > 24 THEN PRICE$ = "30.00"
5000    I1$ = PROD$(PRICE$,".5",2%)
5020    PRICE1$ = QUO$(PRICE$,"1000",3%)
5025    REM
5050    REM
5075    REM DETERMINE THE ADJUSTMENT PERCENTAGE
5100    IF I = 1 THEN ADJST$ = ".09"
5125    IF I = 2 THEN ADJST$ = ".135"
5150    IF I = 3 THEN ADJST$ = ".135"
5175    IF I = 4 THEN ADJST$ = ".09"
5200    IF I = 5 THEN ADJST$ = ".06"
5225    IF I = 6 THEN ADJST$ = ".09"
5250    IF I = 7 THEN ADJST$ = ".09"
5275    IF I = 8 THEN ADJST$ = ".06"
5300    IF I = 9 THEN ADJST$ = ".05"
```

```
5425    IF I = 10 THEN ADJST$ = ".075"
5450    IF I = 11 THEN ADJST$ = ".075"
5475    IF I = 12 THEN ADJST$ = ".05"
5500    IF I = 13 THEN ADJST$ = ".0726"
5525    IF I = 14 THEN ADJST$ = ".0594"
5550    IF I = 15 THEN ADJST$ = ".11"
5575    IF I = 16 THEN ADJST$ = ".09"
5600    IF I = 17 THEN ADJST$ = ".0374"
5625    IF I = 18 THEN ADJST$ = ".0306"
5650    IF I = 19 THEN ADJST$ = ".0726"
5675    IF I = 20 THEN ADJST$ = ".0594"
5700    IF I = 21 THEN ADJST$ = ".11"
5725    IF I = 22 THEN ADJST$ = ".09"
5750    IF I = 23 THEN ADJST$ = ".0374"
5775    IF I = 24 THEN ADJST$ = ".0306"
5800    IF I = 25 THEN ADJST$ = ".0363"
5825    IF I = 26 THEN ADJST$ = ".0297"
5850    IF I = 27 THEN ADJST$ = ".055"
5875    IF I = 28 THEN ADJST$ = ".045"
5900    IF I = 29 THEN ADJST$ = ".0187"
5925    IF I = 30 THEN ADJST$ = ".0153"
5950    REM
5975    REM
6000  IF I > 12 THEN X = 7 ELSE X = 1
6025    A1$ = PROD$(ADJST$,LYS$(X),1%)
6050    A2$ = PROD$(ADJST$,LYS$(X+1),1%)
6075    A3$ = PROD$(ADJST$,LYS$(X+2),1%)
6100    A4$ = PROD$(ADJST$,LYS$(X+3),1%)
6125    A5$ = PROD$(ADJST$,LYS$(X+4),1%)
6150    A6$ = PROD$(ADJST$,LYS$(X+5),1%)
6175    B1$ = PROD$(ADJST$,PS$(X),1%)
6200    B2$ = PROD$(ADJST$,PS$(X+1),1%)
6225    B3$ = PROD$(ADJST$,PS$(X+2),1%)
6250    B4$ = PROD$(ADJST$,PS$(X+3),1%)
6275    B5$ = PROD$(ADJST$,PS$(X+4),1%)
6300    B6$ = PROD$(ADJST$,PS$(X+5),1%)
6325    C1$ = PROD$(ADJST$,LYEOM$(X),1%)
6350    C2$ = PROD$(ADJST$,LYEOM$(X+1),1%)
6375    C3$ = PROD$(ADJST$,LYEOM$(X+2),1%)
6400    C4$ = PROD$(ADJST$,LYEOM$(X+3),1%)
6425    C5$ = PROD$(ADJST$,LYEOM$(X+4),1%)
6450    C6$ = PROD$(ADJST$,LYEOM$(X+5),1%)
6475    D1$ = PROD$(ADJST$,PBOM$(X),1%)
6500    D2$ = PROD$(ADJST$,PBOM$(X+1),1%)
6525    D3$ = PROD$(ADJST$,PBOM$(X+2),1%)
6550    D4$ = PROD$(ADJST$,PBOM$(X+3),1%)
6575    D5$ = PROD$(ADJST$,PBOM$(X+4),1%)
6600    D6$ = PROD$(ADJST$,PBOM$(X+5),1%)
```

```
6525    E1$ = QUO$(D1$,PRICE1$,1%)
6550  E2$ = QUO$(D2$,PRICE1$,1%)
6575  E3$ = QUO$(D3$,PRICE1$,1%)
6600  E4$ = QUO$(D4$,PRICE1$,1%)
6625  E5$ = QUO$(D5$,PRICE1$,1%)
6650  E6$ = QUO$(D6$,PRICE1$,1%)
6675    F1$ = PROD$(ADJST$,PRED$(X),1%)
6700    F2$ = PROD$(ADJST$,PRED$(X+1),1%)
6725    F3$ = PROD$(ADJST$,PRED$(X+2),1%)
6750    F4$ = PROD$(ADJST$,PRED$(X+3),1%)
6775    F5$ = PROD$(ADJST$,PRED$(X+4),1%)
6800    F6$ = PROD$(ADJST$,PRED$(X+5),1%)
6805    G1$ = PROD$(ADJST$,ONORD$(X),1%)
6810    G2$ = PROD$(ADJST$,ONORD$(X+1),1%)
6815    G3$ = PROD$(ADJST$,ONORD$(X+2),1%)
6820    G4$ = PROD$(ADJST$,ONORD$(X+3),1%)
6825    G5$ = PROD$(ADJST$,ONORD$(X+4),1%)
6830    G6$ = PROD$(ADJST$,ONORD$(X+5),1%)
6835    H1$ = QUO$(G1$,PRICE1$,0%)
6840    H2$ = QUO$(G2$,PRICE1$,0%)
6845    H3$ = QUO$(G3$,PRICE1$,0%)
6850    H4$ = QUO$(G4$,PRICE1$,0%)
6855    H5$ = QUO$(G5$,PRICE1$,0%)
6860    H6$ = QUO$(G6$,PRICE1$,0%)
6865    K1$ = PROD$(ADJST$,ONORD$(X),1%)
6870    L1$ = QUO$(K1$,PRICE1$,0%)
6872    J1$ = PROD$(LYS$(X),"1.03",1%) \ J1$ = PROD$(J1$,ADJST$,1%)
6875    REM PREPARE TO WRITE THE RECORD
6900    LET KEYNO$ = STUDNO$ + RW$(I)
6925    PUT #1%
6950    NEXT I
6975    GOTO 4575              \REM RETURN TO BEGINNING PROMPT
7000    REM  CLOSE 31%
7100  REM  THIS IS AN ADD ON SECTION TO PRINT THE RESULTS OF THE SIMULATION
7125  REM  GAME.
7150  REM  OPEN OUTPUT FILE AND PRINT HEADINGS
7175    MAP(LOUT) SEG1$ = 10% , SEG2$ = 10% , SEG3$ = 10% , SEG4$ = 10%,    &
                  SEG5$ = 10% , SEG6$ = 10% , SEG7$ = 10% , SEG8$ = 10%,    &
                  SEG9$ = 10% , SEG10$ = 10% , SEG11$ = 10% , SEG12$ = 10%
7200    OPEN "LIN.PRT" FOR OUTPUT AS FILE #3%                    &
            ,ORGANIZATION SEQUENTIAL                             &
            ,ACCESS WRITE                        &
            ,MAP LOUT
7225    LET SEG5$ = "POST      "
7250    LET SEG6$ = "SIMULATION"
7275    LET SEG7$ = "   RESULTS"
7300    SEG1$ = ""\SEG2$ = " "\SEG3$ = " "\SEG4$ = " "\SEG8$ = " "\SEG9$ = " "
7325    SEG10$ = " "\SEG11$ = " "\SEG12$ = " "
```

```
/350     PUT #3%
/375     SEG5$ = " " \ SEG6$ = " "\SEG7$ = " "
/400     PUT #3%
/425     PUT #3%
/450     REM     BEGIN PRINT LOOP
/475     PRINT "ENTER ALL ZEROS TO EXIT"
/500     INPUT "PLEASE KEY IN A STUDENT NUMBER";STUDNO$
/525     IF STUDNO$ = "000000" THEN GOTO 7675
/550     LET KEYNO$ = STUDNO$ + "0000"
/560     PRINT STUDNO$ , KEYNO$
/575     GET #1%, KEY #0% EQ KEYNO$
/600     SEG3$ = STUDNO$ \ SEG5$ = PRICE$
/625     PUT #3%
/650     GOTO 7475
/675     CLOSE #1%
/700     END
```

BASIC Program Listing for the Six-Month Planning Simulation

```
      SMPLAN.BAS
100     REM BEGIN THE SIX MONTH PLAN SIMULATION GAME
150     REM
200  CALL FDV$INIT(I%(),2000%)
250  CALL FDV$LCHAN(6%)
300  CALL FDV$LOPEN("PLAN")
350     REM
400     REM
410  CALL FDV$CLRSH("INTRO3")\SLEEP 5%
420  CALL FDV$CLRSH("INTRO4")\SLEEP 10%
450     REM
500     REM  CALL A RANDOMIZATION ROUTINE AND DECIDE ON INITIAL DATA
550     RANDOMIZE
600     RNDNUM = RND
650         IF RNDNUM > .33 THEN GOTO 700 ELSE GOSUB 6000
660      GOTO 800
700      IF RNDNUM > .66 THEN GOTO 750 ELSE  GOSUB 7900
710   GOTO 800
750  GOSUB 9550
800     REM  PUT UP DATA ONTO SCREEN
825  CALL FDV$SHOW("SMP")
830  CALL FDV$PUT(NETSLS$,"NS")
850     CALL FDV$PUT(SA$,"S1")
900     CALL FDV$PUT(SB$,"S2")
950     CALL FDV$PUT(SC$,"S3")
1000    CALL FDV$PUT(SD$,"S4")
1050    CALL FDV$PUT(SE$,"S5")
1100    CALL FDV$PUT(SF$,"S6")
1150    CALL FDV$PUT(EOMA$,"EOM1")
1200    CALL FDV$PUT(EOMB$,"EOM2")
1250    CALL FDV$PUT(EOMC$,"EOM3")
1300  CALL FDV$PUT(EOMD$,"EOM4")
1350  CALL FDV$PUT(EOME$,"EOM5")
1400  CALL FDV$PUT(EOMF$,"EOM6")
1450  CALL FDV$PUT(REDA$,"RED1")
1500  CALL FDV$PUT(REDB$,"RED2")
1550  CALL FDV$PUT(REDC$,"RED3")
1600  CALL FDV$PUT(REDD$,"RED4")
1650  CALL FDV$PUT(REDE$,"RED5")
1700  CALL FDV$PUT(REDF$,"RED6")
1750  CALL FDV$PUT(BOMA$,"BOM1")
```

```
1800  CALL FDV$PUT(BOMB$,"BOM2")
1850  CALL FDV$PUT(BOMC$,"BOM3")
1900  CALL FDV$PUT(BOMD$,"BOM4")
1950  CALL FDV$PUT(BOME$,"BOM5")
2000  CALL FDV$PUT(BOMF$,"BOM6")
2050  CALL FDV$PUT(PURA$,"PUR1")
2100  CALL FDV$PUT(PURB$,"PUR2")
2150  CALL FDV$PUT(PURC$,"PUR3")
2200  CALL FDV$PUT(PURD$,"PUR4")
2250  CALL FDV$PUT(PURE$,"PUR5")
2300  CALL FDV$PUT(PURF$,"PUR6")
2350  CALL FDV$PUT(GMA$,"GM1")
2400  CALL FDV$PUT(GMB$,"GM2")
2450  CALL FDV$PUT(GMC$,"GM3")
2500  CALL FDV$PUT(GMD$,"GM4")
2550  CALL FDV$PUT(GME$,"GM5")
2600  CALL FDV$PUT(GMF$,"GM6")
2620  REM  IF FLAG1$ <> "ON" THEN GOTO 2650
2625  REM  RETURN
2650    REM
2700    REM  BEGIN MAJOR CONTROLLING LOOP
2750    CALL FDV$GET(F$,1,"FL")\REM  GET THE FIELD CHOICE
2760    IF F$ = "Z" THEN GOTO 12000
2770    IF F$ = "Y" THEN GOTO 16000
2790  FLAG9$ = " "
2800    CALL FDV$GET(AMOUNT$,0,"AMT")\REM  GET THE DOLLAR AMOUNT
2810  I% = 1 \ FOR I% = 1 TO 5
2815  IF SEG$(AMOUNT$,I%,I%) < "0" THEN GOSUB 2830
2817  IF SEG$(AMOUNT$,I%,I%) > "9" THEN GOSUB 2830
2820  NEXT I%
2822  IF AMOUNT$ = "" THEN FLAG9$ = "ON"
2825  IF FLAG9$ = "ON" THEN CALL FDV$PUTL("YOU MUST ENTER A NUMBER")
2827  IF FLAG9$ = "ON" THEN GOTO 2790 ELSE GOTO 2845
2830  IF SEG$(AMOUNT$,I%,I%) = "." THEN GOTO 2835
2832  IF SEG$(AMOUNT$,I%,I%) = "" THEN GOTO 2835 ELSE FLAG9$ = "ON"
2835  RETURN
2845  FLAG9$ = " "
2900  IF F$ <> "A" THEN GOTO 2950 ELSE SA$ = AMOUNT$
2925  GOTO 5000
2950  IF F$ <> "E" THEN GOTO 3000 ELSE SB$ = AMOUNT$
2975  GOTO 5000
3000  IF F$ <> "I" THEN GOTO 3050 ELSE SC$ = AMOUNT$
3025  GOTO 5000
3050  IF F$ <> "M" THEN GOTO 3100 ELSE SD$ = AMOUNT$
3075  GOTO 5000
3100  IF F$ <> "Q" THEN GOTO 3150 ELSE SE$ = AMOUNT$
3125  GOTO 5000
3150  IF F$ <> "U" THEN GOTO 3200 ELSE SF$ = AMOUNT$
```

```
3175  GOTO 5000
3200  IF F$ <> "B" THEN GOTO 3250 ELSE EOMA$ = AMOUNT$
3225  BOMB$ = EOMA$ \ GOTO 5000
3250  IF F$ <> "F" THEN GOTO 3300 ELSE EOMB$ = AMOUNT$
3275  BOMC$ = EOMB$ \ GOTO 5000
3300  IF F$ <> "J" THEN GOTO 3350 ELSE EOMC$ = AMOUNT$
3325  BOMD$ = EOMC$ \ GOTO 5000
3350  IF F$ <> "N" THEN GOTO 3400 ELSE EOMD$ = AMOUNT$
3375  BOME$ = EOMD$ \ GOTO 5000
3400  IF F$ <> "R" THEN GOTO 3450 ELSE EOME$ = AMOUNT$
3425  BOMF$ = EOME$ \ GOTO 5000
3450  IF F$ <> "V" THEN GOTO 3500 ELSE EOMF$ = AMOUNT$
3475  GOTO 5000
3500  IF F$ <> "C" THEN GOTO 3550  ELSE REDA$ = AMOUNT$
3525  GOTO 5000
3550  IF F$ <> "G" THEN GOTO 3600 ELSE REDB$ = AMOUNT$
3575  GOTO 5000
3600  IF F$ <> "K" THEN GOTO 3650 ELSE REDC$ = AMOUNT$
3625  GOTO 5000
3650  IF F$ <> "O" THEN GOTO 3700 ELSE REDD$ = AMOUNT$
3675  GOTO 5000
3700  IF F$ <> "S" THEN GOTO 3750  ELSE REDE$ = AMOUNT$
3725  GOTO 5000
3750  IF F$ <> "W" THEN GOTO 3800 ELSE REDF$ = AMOUNT$
3775  GOTO 5000
3800  IF F$ <> "D" THEN GOTO 3850 ELSE BOMA$ = AMOUNT$
3825  GOTO 5000
3850  IF F$ <> "H" THEN GOTO 3900 ELSE BOMB$ = AMOUNT$
3875  EOMA$ = BOMB$ \ GOTO 5000
3900  IF F$ <> "L" THEN GOTO 3950  ELSE BOMC$ = AMOUNT$
3925  EOMB$ = BOMC$ \ GOTO 5000
3950  IF F$ <> "P" THEN GOTO 4000 ELSE BOMD$ = AMOUNT$
3975  EOMC$ = BOMD$  \ GOTO 5000
4000  IF F$ <> "T" THEN GOTO 4050 ELSE BOME$ = AMOUNT$
4025  EOMD$ = BOME$ \ GOTO 5000
4050  IF F$ <> "X" THEN GOTO 4100 ELSE BOMF$ = AMOUNT$
4075  EOME$ = BOMF$ \ GOTO 5000
4100    CALL FDV$PUTL("YOU MUST CHOOSE A LETTER BETWEEN A AND X")\GOTO 2750
4150    REM
4200    REM
4250    REM
4300    REM
4350    REM
4400    REM
4450    REM
4500    REM
4550  REM
4600    REM
```

```
4650    REM
4700    REM
4750    REM
4800    REM
4850  REM
4900    REM
4950    REM
5000  LET PURA$ = SUM$(SA$,EOMA$)
5005  LET PURA$ = SUM$(PURA$,REDA$)
5025  PURA$ = DIF$(PURA$,BOMA$)
5030  IF VAL(PURA$) < 0 THEN PURA$ = "000.0"
5050  LET PURB$ = SUM$(SB$,EOMB$)
5055  LET PURB$ = SUM$(PURB$,REDB$)
5075  PURB$ = DIF$(PURB$,BOMB$)
5080  IF VAL(PURB$) < 0 THEN PURB$ = "000.0"
5100  LET PURC$ = SUM$(SC$,EOMC$)
5105  LET PURC$ = SUM$(PURC$,REDC$)
5125  PURC$ = DIF$(PURC$,BOMC$)
5130  IF VAL(PURC$) < 0 THEN PURC$ = "000.0"
5132  IF VAL(SA$) = 0 THEN SA$ = ".1"
5134  IF VAL(SB$) = 0 THEN SB$ = ".1"
5136  IF VAL(SC$) = 0 THEN SC$ = ".1"
5138  IF VAL(SD$) = 0 THEN SD$ = ".1"
5140  IF VAL(SE$) = 0 THEN SE$ = ".1"
5142  IF VAL(SF$) = 0 THEN SF$ = ".1"
5150  LET PURD$ = SUM$(SD$,EOMD$)
5155  LET PURD$ = SUM$(PURD$,REDD$)
5175  PURD$ = DIF$(PURD$,BOMD$)
5180  IF VAL(PURD$) < 0 THEN PURD$ = "000.0"
5200  LET PURE$ = SUM$(SE$,EOME$)
5205  LET PURE$ = SUM$(PURE$,REDE$)
5225  PURE$ = DIF$(PURE$,BOME$)
5230  IF VAL(PURE$) < 0 THEN PURE$ = "000.0"
5250  PURF$ = SUM$(SF$,EOMF$)
5255  PURF$ = SUM$(PURF$,REDF$)
5275  PURF$ = DIF$(PURF$,BOMF$)
5280  IF VAL(PURF$) < 0 THEN PURF$ = "000.0"
5285  GMA$ = SUM$(SA$,REDA$)
5300  GMA$ = PROD$(GMA$,OGM$,3%)
5310  GMA$ = DIF$(GMA$,REDA$)
5320  GMA$ = QUO$(GMA$,SA$,3%)
5322  GMA$ = PROD$(GMA$,"100",1%)
5325  GMB$ = SUM$(SB$,REDB$)
5350  GMB$ = PROD$(GMB$,OGM$,3%)
5360  GMB$ = DIF$(GMB$,REDB$)
5370  GMB$ = QUO$(GMB$,SB$,3%)
5375  GMB$ = PROD$(GMB$,"100",1%)
5390  GMC$ = SUM$(SC$,REDC$)
```

```
5400  GMC$ = PROD$(GMC$,OGM$,3%)
5410  GMC$ = DIF$(GMC$,REDC$)
5420  GMC$ = QUO$(GMC$,SC$,3%)
5425  GMC$ = PROD$(GMC$,"100",1%)
5430  GMD$ = SUM$(SD$,REDD$)
5450  GMD$ = PROD$(GMD$,OGM$,3%)
5460  GMD$ = DIF$(GMD$,REDD$)
5470  GMD$ = QUO$(GMD$,SD$,3%)
5475  GMD$ = PROD$(GMD$,"100",1%)
5490  GME$ = SUM$(SE$,REDE$)
5500  GME$ = PROD$(GME$,OGM$,3%)
5510  GME$ = DIF$(GME$,REDE$)
5520  GME$ = QUO$(GME$,SE$,3%)
5525  GME$ = PROD$(GME$,"100",1%)
5540  GMF$ = SUM$(SF$,REDF$)
5550  GMF$ = PROD$(GMF$,OGM$,3%)
5560  GMF$ = DIF$(GMF$,REDF$)
5570  GMF$ = QUO$(GMF$,SF$,3%)
5575  GMF$ = PROD$(GMF$,"100",1%)
5600    LET FLAG1$ = "ON"
5650  GOSUB 800
5660  LET F$ = " "
5670  LET AMOUNT$ = " "
5700  GOTO 2750
5750    REM
5800    REM
5850    REM
5900    REM
5950    REM
6000  SA$ = "145.0"
6050  SB$ = "260.0"
6100  SC$ = "138.0"
6150  SD$ = "97.0"
6200  SE$ = "101.0"
6250  SF$ = "150.0"
6300  EOMA$ = "582.3"
6350  EOMB$ = "460.3"
6400  EOMC$ = "419.3"
6450  EOMD$ = "423.3"
6500  EOME$ = "431.3"
6550  EOMF$ = "418.8"
6600  BOMA$ = "467.3"
6650  BOMB$ = "582.3"
6700  BOMC$ = "460.3"
6750  BOMD$ = "419.3"
6800  BOME$ = "423.3"
6850  BOMF$ = "431.3"
6900  REDA$ = "22.0"
```

```
6950  REDB$ = "39.0"
7000  REDC$ = "23.0"
7050  REDD$ = "18.0"
7100  REDE$ = "18.5"
7150  REDF$ = "24.0"
7200  PURA$ = SUM$(SA$,EOMA$)
7205  PURA$ = SUM$(PURA$,REDA$)
7225  PURA$ = DIF$(PURA$,BOMA$)
7250  PURB$ = SUM$(SB$,EOMB$)
7255  PURB$ = SUM$(PURB$,REDB$)
7275  PURB$ = DIF$(PURB$,BOMB$)
7300  PURC$ = SUM$(SC$,EOMC$)
7305  PURC$ = SUM$(PURC$,REDC$)
7325  PURC$ = DIF$(PURC$,BOMC$)
7350  PURD$ = SUM$(SD$,EOMD$)
7355  PURD$ = SUM$(PURD$,REDD$)
7375  PURD$ = DIF$(PURD$,BOMD$)
7400  PURE$ = SUM$(SE$,EOME$)
7405  PURE$ = SUM$(PURE$,REDE$)
7425  PURE$ = DIF$(PURE$,BOME$)
7450  PURF$ = SUM$(SF$,EOMF$)
7455  PURF$ = SUM$(PURF$,REDF$)
7475  PURF$ = DIF$(PURF$,BOMF$)
7500  OGM$ = ".47"
7525  NETSLS$ = "900.0"
7530  GMA$ = SUM$(SA$,REDA$)
7550  GMA$ = PROD$(GMA$,OGM$,3%)
7560  GMA$ = DIF$(GMA$,REDA$)
7570  GMA$ = QUO$(GMA$,SA$,3%)
7575  GMA$ = PROD$(GMA$,"100",1%)
7590  GMB$ = SUM$(SB$,REDB$)
7600  GMB$ = PROD$(GMB$,OGM$,3%)
7610  GMB$ = DIF$(GMB$,REDB$)
7620  GMB$ = QUO$(GMB$,SB$,3%)
7625  GMB$ = PROD$(GMB$,"100",1%)
7630  GMC$ = SUM$(SC$,REDC$)
7650  GMC$ = PROD$(GMC$,OGM$,3%)
7660  GMC$ = DIF$(GMC$,REDC$)
7670  GMC$ = QUO$(GMC$,SC$,3%)
7675  GMC$ = PROD$(GMC$,"100",1%)
7680  GMD$ = SUM$(SD$,REDD$)
7700  GMD$ = PROD$(GMD$,OGM$,3%)
7710  GMD$ = DIF$(GMD$,REDD$)
7720  GMD$ = QUO$(GMD$,SD$,3%)
7725  GMD$ = PROD$(GMD$,"100",1%)
7730  GME$ = SUM$(SE$,REDE$)
7750  GME$ = PROD$(GME$,OGM$,3%)
7760  GME$ = DIF$(GME$,REDE$)
```

```
7770   GME$ = QUO$(GME$,SE$,3%)
7775   GME$ = PROD$(GME$,"100",1%)
7780   GMF$ = SUM$(SF$,REDF$)
7800   GMF$ = PROD$(GMF$,OGM$,3%)
7810   GMF$ = DIF$(GMF$,REDF$)
7820   GMF$ = QUO$(GMF$,SF$,3%)
7825   GMF$ = PROD$(GMF$,"100",1%)
7850     RETURN
7900   SA$ = "159.5"
7950   SB$ = "286.0"
8000   SC$ = "151.8"
8050   SD$ = "106.7"
8100   SE$ = "111.1"
8150   SF$ = "119.9"
8200   BOMA$ = "514.0"
8250   BOMB$ = "640.5"
8300   BOMC$ = "506.3"
8350   BOMD$ = "461.2"
8400   BOME$ = "465.6"
8450   BOMF$ = "474.4"
8500   EOMA$ = "640.5"
8550   EOMB$ = "506.3"
8600   EOMC$ = "461.2"
8650   EOMD$ = "465.6"
8700   EOME$ = "474.4"
8750   EOMF$ = "460.6"
8800   REDA$ = "24.2"
8850   REDB$ = "42.9"
8900   REDC$ = "25.3"
8950   REDD$ = "19.8"
9000   REDE$ = "20.4"
9050   REDF$ = "26.4"
9100   PURA$ = SUM$(SA$,EOMA$)
9105   PURA$ = SUM$(PURA$,REDA$)
9125   PURA$ = DIF$(PURA$,BOMA$)
9150   PURB$ = SUM$(SB$,EOMB$)
9155   PURB$ = SUM$(PURB$,REDB$)
9175   PURB$ = DIF$(PURB$,BOMB$)
9200   PURC$ = SUM$(SC$,EOMC$)
9205   PURC$ = SUM$(PURC$,REDC$)
9225   PURC$ = DIF$(PURC$,BOMC$)
9250   PURD$ = SUM$(SD$,EOMD$)
9255   PURD$ = SUM$(PURD$,REDD$)
9275   PURD$ = DIF$(PURD$,BOMD$)
9300   PURE$ = SUM$(SE$,EOME$)
9305   PURE$ = SUM$(PURE$,REDE$)
9325   PURE$ = DIF$(PURE$,BOME$)
9350   PURF$ = SUM$(SF$,EOMF$)
```

```
 9355  PURF$ = SUM$(PURF$,REDF$)
 9375  PURF$ = DIF$(PURF$,BOMF$)
 9400  OGM$ = ".47"
 9425  NETSLS$ = "950.0"
 9450    GOSUB 7530
 9500    RETURN
 9550  SA$ = "130.5"
 9600  SB$ = "280.0"
 9650  SC$ = "124.2"
 9700  SD$ = "87.3"
 9750  SE$ = "90.9"
 9800  SF$ = "98.1"
 9850  EOMA$ = "524.0"
 9900  EOMB$ = "414.2"
 9950  EOMC$ = "377.3"
10000  EOMD$  = "380.9"
10050  EOME$ = "388.1"
10100  EOMF$ = "376.9"
10150  BOMA$ = "420.5"
10200  BOMB$ = "524.0"
10250  BOMC$ = "414.2"
10300  BOMD$ = "377.3"
10350  BOME$ = "320.0"
10400  BOMF$ = "388.1"
10450  REDA$ = "19.8"
10500  REDB$ = "35.1"
10550  REDC$ = "20.7"
10600  REDD$ = "16.2"
10650  REDE$ = "15.0"
10700  REDF$ = "21.6"
10750  PURA$ = SUM$(SA$,EOMA$)
10755  PURA$ = SUM$(PURA$,REDA$)
10775  PURA$ = DIF$(PURA$,BOMA$)
10800  PURB$ = SUM$(SB$,EOMB$)
10805  PURB$ = SUM$(PURB$,REDB$)
10825  PURB$ = DIF$(PURB$,BOMB$)
10850  PURC$ = SUM$(SC$,EOMC$)
10855  PURC$ = SUM$(PURC$,REDC$)
10875  PURC$ = DIF$(PURC$,BOMC$)
10900  PURD$ = SUM$(SD$,EOMD$)
10905  PURD$ = SUM$(PURD$,REDD$)
10925  PURD$ = DIF$(PURD$,BOMD$)
10950  PURE$ = SUM$(SE$,EOME$)
10955  PURE$ = SUM$(PURE$,REDE$)
10975  PURE$ = DIF$(PURE$,BOME$)
11000  PURF$ = SUM$(SF$,EOMF$)
11005  PURF$ = SUM$(PURF$,REDF$)
11025  PURF$ = DIF$(PURF$,BOMF$)
```

```
11050  OGM$ =  ".47"
11075  NETSLS$ = "765.0"
11100   GOSUB 7530
11150   RETURN
11200  REM
11250   REM
11300   REM
11350   REM
11400   REM
11450   REM
11500   REM
11550  REM
11600   REM
11650   REM
11700   REM
11750   REM
11800   REM
11850   REM
11900   REM
11950   REM
12000   REM  BEGIN THE MANAGEMENT COMMENTS SECTION
12050  TSALES$ = SUM$(SA$,SB$)
12060  TSALES$ = SUM$(TSALES$,SC$)
12070  TSALES$ = SUM$(TSALES$,SD$)
12080  TSALES$ = SUM$(TSALES$,SE$)
12090  TSALES$ = SUM$(TSALES$,SF$)
12100  REM IF DIF$(TSALES$,NETSLS$) <= "-3.0" THEN FLAG2$ = "ON"
12110  REM IF DIF$(TSALES$,NETSLS$) => "3.0" THEN FLAG2$ = "ON"
12125  DIFFA = VAL(NETSLS$) * .171 \ DIFFA = VAL(SA$) - DIFFA
12150  DIFFB = VAL(NETSLS$) * .306 \ DIFFB = VAL(SB$) - DIFFB
12175  DIFFC = VAL(NETSLS$) * .162 \ DIFFC = VAL(SC$) - DIFFC
12200 DIFFD = VAL(NETSLS$) * .114 \ DIFFD = VAL(SD$) - DIFFD
12225 DIFFE = VAL(NETSLS$) * .119 \ DIFFE = VAL(SE$) - DIFFE
12250  DIFFF = VAL(NETSLS$) * .128 \ DIFFF = VAL(SF$) - DIFFF
12275  IF DIFFA < -3 OR DIFFA > 3 THEN FLAG2$ = "ON"
12300  IF DIFFB < -3 OR DIFFB > 3 THEN FLAG2$ = "ON"
12325  IF DIFFC < -3 OR DIFFC > 3 THEN FLAG2$ = "ON"
12350  IF DIFFD < -3 OR DIFFD > 3 THEN FLAG2$ = "ON"
12375  IF DIFFE < -3 OR DIFFE > 3 THEN FLAG2$ = "ON"
12400  IF DIFFF < -3 OR DIFFF > 3 THEN FLAG2$ = "ON"
12425  SSRA = (VAL(BOMA$) / VAL(SA$))
12450  SSRB = (VAL(BOMB$) / VAL(SB$))
12475  SSRC = (VAL(BOMC$) /VAL(SC$))
12500  SSRD = (VAL(BOMD$) / VAL(SD$))
12525  SSRE = (VAL(BOME$) / VAL(SE$))
12550  SSRF = (VAL(BOMF$) / VAL(SF$))
12575  IF (SSRA - 3.2) <= -.1 OR (SSRA - 3.2) => .1 THEN FLAG3$ = "ON"
12600  IF (SSRB - 2.2) <= -.1 OR (SSRB - 2.2) => .1 THEN FLAG3$ = "ON"
```

```
12625  IF (SSRC - 3.3) <= -.1 OR (SSRC - 3.3) => .1 THEN FLAG3$ = "ON"
12650  IF (SSRD - 4.3) <= -.1 OR (SSRD - 4.3) => .1 THEN FLAG3$ = "ON"
12675  IF (SSRE - 4.1) <= -.1 OR (SSRE - 4.1) => .1 THEN FLAG3$ = "ON"
12700  IF (SSRF - 3.9) <= -.1 OR (SSRF - 3.9) => .1 THEN FLAG3$ = "ON"
12725  REDDIF$ = SUM$(REDA$,REDB$)
12750  REDDIF$ = SUM$(REDDIF$,REDC$)
12775  REDDIF$ = SUM$(REDDIF$,REDD$)
12800  REDDIF$ = SUM$(REDDIF$,REDE$)
12825  REDDIF$ = SUM$(REDDIF$,REDF$)
12850  IF (VAL(REDDIF$) - (VAL(NETSLS$) * .17)) < -1 OR (VAL(REDDIF$) -
       (VAL(NETSLS$) * .17)) > 1 THEN FLAG4$ = "ON"
12875  MMA$ = SUM$(SA$,REDA$)
12900  MMA$ = PROD$(MMA$,OGM$,1%)
12925  MMA$ = DIF$(MMA$,REDA$)
12950  MMA$ = QUO$(MMA$,SA$,3%)
12975  MMB$ = SUM$(SB$,REDB$)
13000  MMB$ = PROD$(MMB$,OGM$,1%)
13025  MMB$ = DIF$(MMB$,REDB$)
13050  MMB$ = QUO$(MMB$,SB$,3%)
13075  MMC$ = SUM$(SC$,REDC$)
13100  MMC$ = PROD$(MMC$,OGM$,1%)
13125  MMC$ = DIF$(MMC$,REDC$)
13150  MMC$ = QUO$(MMC$,SC$,3%)
13175  MMD$ = SUM$(SD$,REDD$)
13200  MMD$ = PROD$(MMD$,OGM$,1%)
13225  MMD$ = DIF$(MMD$,REDD$)
13250  MMD$ = QUO$(MMD$,SD$,3%)
13275  MME$ = SUM$(SE$,REDE$)
13300  MME$ = PROD$(MME$,OGM$,1%)
13325  MME$ = DIF$(MME$,REDE$)
13350  MME$ = QUO$(MME$,SE$,3%)
13375  MMF$ = SUM$(SF$,REDF$)
13400  MMF$ = PROD$(MMF$,OGM$,1%)
13425  MMF$ = DIF$(MMF$,REDF$)
13450  MMF$ = QUO$(MMF$,SF$,3%)
13475  IF VAL(MMA$) < .35 OR VAL(MMA$) > .4 THEN FLAG5$ = "ON"
13500  IF VAL(MMB$) < .35 OR VAL(MMB$) > .4 THEN FLAG5$ = "ON"
13525  IF VAL(MMC$) < .35 OR VAL(MMC$) > .4 THEN FLAG5$ = "ON"
13550  IF VAL(MMD$) < .35 OR VAL(MMD$) > .4 THEN FLAG5$ = "ON"
13575  IF VAL(MME$) < .35 OR VAL(MME$) > .4 THEN FLAG5$ = "ON"
13600  IF VAL(MMF$) < .35 OR VAL(MMF$) > .4 THEN FLAG5$ = "ON"
13605  IF FLAG2$ = "ON" THEN WIND1$ = "PLEASE CHECK YOUR MONTHLY PLANNED SALES."
13610  IF FLAG3$ = "ON" THEN WIND2$ = "ARE PLANNED STOCK/SALES RATIOS BEING MET?
 PLEASE REVIEW."
13615  IF FLAG4$ = "ON" THEN WIND3$ = "MONTHLY REDUCTION FIGURES SEEM UNREALISTI
C. PLEASE CHECK."
13620  IF FLAG5$ = "ON" THEN WIND4$ = "ARE PLANNED GM%'S BEING MET? BETTER DOUBL
E CHECK."
```

```
13625  IF FLAG2$ <> "ON" AND FLAG3$ <> "ON" AND FLAG4$ <> "ON"    &
           AND FLAG5$ <> "ON" THEN GOTO 13980
13650  IF FLAG2$ = "ON" THEN CALL FDV$PUT(WIND1$,"WIN1")
13675  IF FLAG2$ = "ON" AND FLAG3$ = "ON" THEN CALL FDV$PUT(WIND2$,"WIN2")
13700  IF FLAG2$ <> "ON" AND FLAG3$ = "ON" THEN CALL FDV$PUT(WIND2$,"WIN1")
13725  IF FLAG2$ = "ON" AND FLAG3$ = "ON" AND FLAG4$ = "ON" THEN CALL
       FDV$PUT(WIND3$,"WIN3")
13750  IF FLAG2$ <> "ON" AND FLAG3$ = "ON" AND FLAG4$ = "ON" THEN CALL
       FDV$PUT(WIND3$,"WIN2")
13775  IF FLAG2$ = "ON" AND FLAG3$ <> "ON" AND FLAG4$ = "ON" THEN CALL
       FDV$PUT(WIND3$,"WIN2")
13777  IF FLAG2$ <> "ON" AND FLAG3$ <> "ON" AND FLAG4$ = "ON" THEN CALL
       FDV$PUT(WIND3$,"WIN2")
13800  IF FLAG2$ = "ON" AND FLAG3$ = "ON" AND FLAG4$ = "ON" THEN GOTO 14350
13850  IF FLAG5$ = "ON" THEN CALL FDV$PUT(WIND4$,"WIN3")
13978  GOTO 14000
13980  WIND1$ = "VERY GOOD!! THIS PLAN MEETS MANAGEMENT'S CRITERIA."
13982  WIND2$ = "THE ECONOMY IS UNCERTAIN. SALES AND REDUCTIONS MAY RISE"
13984  WIND3$ = "OR FALL. MAKE CHANGES TO SEE HOW YOUR PLAN MIGHT VARY."
13986  CALL FDV$PUT(WIND1$,"WIN1")\CALL FDV$PUT(WIND2$,"WIN2")\CALL FDV$PUT(WIND
3$,"WIN3")
13988  SLEEP 15%\ WIND1$ = "Take a few minutes to CHANGE some of the figures on
the"
13991  WIND2$ = "plan. Can you predict the effect your changes will have"
13993  WIND3$ = "on the other figures?"
13995  CALL FDV$PUT(WIND1$,"WIN1")\CALL FDV$PUT(WIND2$,"WIN2")\CALL FDV$PUT(WIND
3$,"WIN3")
13997  SLEEP 15% \ GOTO 14500
14000  REM
14350   CALL FDV$PUTL("JOT DOWN THE RECOMMENDATIONS.YOU HAVE 25 SECONDS")
14400    SLEEP 25%
14450   CALL FDV$PUTL("                                                    ")
14500   REM WE ARE GOING TO BLANK OUT THE SCREEN WINDOW
14550   WIND1$ = SPACE$(57%)
14600   WIND2$ = SPACE$(57%)
14650   WIND3$ = SPACE$(57%)
14700   WIND4$ = SPACE$(57%)
14750   WIND5$ = SPACE$(57%)
14800   FLAG2$ = "  "\FLAG3$ = "  "\FLAG4$ = "  "\FLAG5$ = "  "
14850   CALL FDV$PUT(WIND1$,"WIN1")
14900   CALL FDV$PUT(WIND1$,"WIN2")
14950   CALL FDV$PUT(WIND1$,"WIN3")
15000  GOTO 800
15050   REM
15100   REM
15150   REM
15200   REM
15250   REM
```

```
15300   REM
15350   REM
15400   REM
15450   REM
15500   REM
15550   REM
15600   REM
15650   REM
15700   REM
15750   REM
15800   REM
15850   REM
15900   REM
15950   REM
16000   CALL FDV$LCLOS
16010  I = 1 \ FOR I = 1 TO 30
16020  PRINT
16030  NEXT I
16035  PRINT "THANKS FOR PLAYING RETAIL SIMULATION II- SIX MONTH PLANNING"
16040  PRINT
16045  REM PRINT "REMEMBER TO LOGOUT BEFORE YOU LEAVE"
16046  I = 1 \ FOR I = 1 TO 8
16047  PRINT
16048  NEXT I
16050   END
```

APPENDIX G

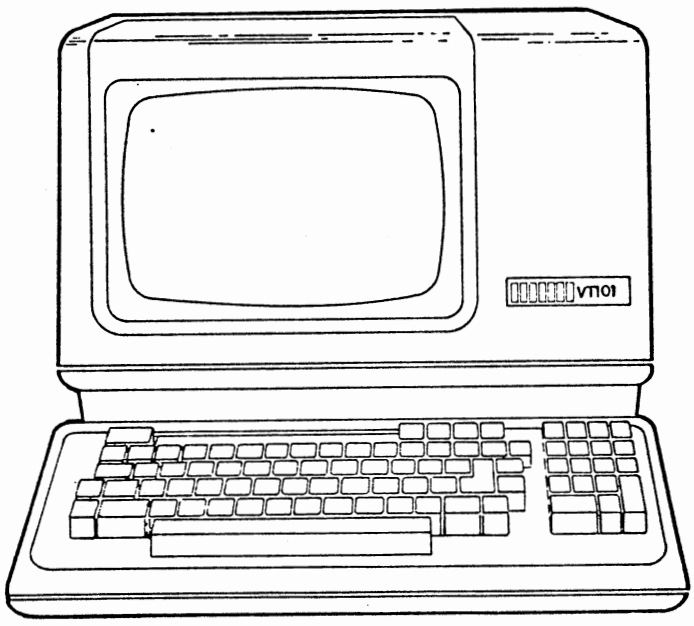
STUDENT GUIDES FOR THE TWO SIMULATIONS

```
**************************************************************
*                                                            *
*                                                            *
*          R E T A I L  S I M U L A T I O N                  *
*                                                            *
*          S I X - M O N T H  P L A N N I N G                *
*                                                            *
**************************************************************
```

Welcome to the Retail Simulation Game--Six-Month Planning! The purpose of this simulation is to allow you to apply the principles of merchandise planning in a hypothetical but life-like environment. You will be given a six-month planning situation which occurred in a department store named Albert J. Jolly Dry Goods. You must analyze the situation and determine if sales, reductions, gross margin figures, and stock-to-sales ratios meet the criteria set by the management of Albert J. Jolly Dry Goods.

You will use a Digital VT101 computer terminal (see photo) to play the simulation. These terminals are located in Home Economics West 039, AG Hall room 241, and in the basement of the Business Administration building room 09. You will also need a calculator.

PLEASE READ THE SITUATION AND ALL OF THE INSTRUCTIONS FOR USING THE COMPUTER. THEN BEGIN THE SIMULATION.



VT101

HERE IS THE SITUATION

Located in Tulsa, Oklahoma, Albert J. Jolly Dry Goods was started 50 years ago by a dashing young entrepreneur by the name of Albert J. Jolly. Under his leadership the store has grown to occupy several stories of a prestigious building downtown. You are currently the assistant buyer in the junior sportswear department. You have been in this position for a little over a year and feel confident about your ability to merchandise this department.

The buyer of the junior sportswear department resigned last week to take a job as a sales representative at the Dallas Apparel Mart. Her timing could not have been worse. Merchandise plans for the Fall-Winter season are to be submitted to the divisional merchandise manager in two weeks and the department is without a buyer.

Several buyers from other departments are interested in the position. However, management approaches YOU with the offer of a promotion from assistant buyer to buyer of the junior sportswear department. You accept the promotion and begin to plan for the upcoming Fall-Winter season.

The previous buyer had entered a tentative six-month plan into the store's computerized planning system. Your divisional merchandise manager suggests that you evaluate the plan and make corrections as needed. Specific criteria have been set by the store management to guide you in the planning process. You must determine if sales, reductions, gross margin figures and stock-to-sales ratios meet the criteria set by management. You may make changes to the plan by keying your decisions into the computerized system. Instructions follow for logging on the computer, playing the simulation, and keying changes into the computer.

INSTRUCTIONS FOR LOGGING ON THE COMPUTER

If the terminal is not on, and it probably will not be, the switch is located on the back of the terminal on the left side. Move the switch from the downward position to the upward position. The terminal should beep as it is turned on. Allow 5 to 10 seconds for the blinking cursor to appear in the top left corner of the screen.

If you use a terminal in the basement of Home Economics West, follow the instructions taped on the desk to the left of the terminal. If you are using a terminal in Ag Hall or in the Business Building, hold down the keys CTRL and T, then release and hit the RETURN key. The following message will appear on the screen:

OKLAHOMA STATE UNIVERSITY COMPUTER NETWORK

ENTER SYSTEM NAME IN CAPITAL LETTERS (VAX,VAX300,IBM, OR IBMAPL)

You will type VAX in capital letters and hit the RETURN key. The computer will respond with the message COM. You will hit the RETURN

key again. Next, the computer will ask for a Username. You will type in one of these usernames: U0009AA, U0009AB, U0009AC, U0009AD, or U0009AE and then hit the RETURN key. If the username you type in is busy, try another username. The computer will now ask for a Password. You will type in the letters RSIM and hit the RETURN key.

INSTRUCTIONS FOR PLAYING THE SIMULATION

After you have keyed in the username and the password the simulation begins. A title screen will appear on the terminal and then a screen which briefly describes the simulation scenario will appear. Next, the tentative six month plan entered by the previous buyer will appear. Your planned sales figure will appear in the right hand corner of the screen. Your monthly figures should be based on this amount. You will begin interaction with the simulation at this point.

Use the MANAGEMENT CRITERIA (example on following page) to evaluate the plan. If you find that the criteria are not being met by the plan, you may make changes to correct it. Changes are made by 1) selecting the item to be changed, 2) deciding the new dollar amount for the item, and 3) keying these decisions into the computer. Refer to your textbook for formulas if needed.

KEYING CHANGES INTO THE COMPUTER

You may make one change at a time. To make a change, enter the capital letter corresponding to the item you would like to change. You will see a blinking cursor next to the question FIELD LETTER? Key in the capital letter for the item you would like to change. Do Not Hit the RETURN key. The computer automatically tabs over to the question AMOUNT? Enter the new dollar amount in thousands using a decimal point where needed. For example, $210,000 would be keyed in as 210.0 and $20,500 would be keyed in as 20.5. After you have entered the new dollar amount, hit the RETURN key.

You may make as many changes as you like. Each time a change is made the screen disappears and then reappears with updated figures.

When you are confident that the plan meets management criteria you may submit it for management evaluation. To do this, enter the letter "Z" after the question FIELD LETTER? You will have 25 seconds to review the management comments. The screen will disappear and then reappear. You may then make other changes as needed.

After your plan has been approved by management, you will be asked to change some of your figures to determine the effect the changes will have on your plan. For example, decrease the reduction figure for August by $3,000 to determine the effect the change will have on planned purchases. Does planned purchases increase or decrease? Continue to change figures on the plan until you feel confident in predicting the probable effect the change will have. Feel free to make as many changes

as you like. You do not have to submit your plan for management comments again.

To end the simulation, enter the letter "Y" after the question FIELD LETTER? You have now finished a session with the six-month planning simulation. Please turn off the computer terminal before you leave. If you are in Home Economics West, follow the instructions taped to the desk for logging out.

* *

If you have questions about the six month planning simulation or about using the computer, please call Laura Jolly at X5036. Leave your name and phone number and specify a time that you can be reached during the day.

* *
* ALBERT J. JOLLY - MANAGEMENT CRITERIA *
* *

GROSS MARGIN - 35%-40%
INITIAL MARKUP - 47%

REDUCTIONS - 17%

	Planned Sales %'s	Planned Reduction %'s
AUG.	17.1%	15.2%
SEPT.	30.6%	26.9%
OCT.	16.2%	15.9%
NOV.	11.4%	12.4%
DEC.	11.9%	12.8%
JAN.	12.8%	16.6%

	Planned BOM Stock-to-Sales Ratios
AUG.	3.2
SEPT.	2.2
OCT.	3.3
NOV.	4.3
DEC.	4.1
JAN.	3.9

NOTE: The planned sales figure will appear in the upper right hand corner of the screen. Your monthly figures should be based on this amount.

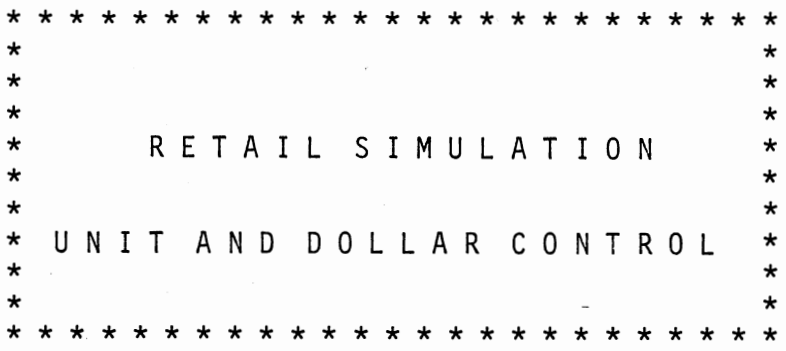
EXAMPLE

ALBERT J. JOLLY DRY GOODS - SIX MONTH PLAN NET SALES = 525.4

	AUG	SEPT	OCT	NOV	DEC	JAN
SALES	A) 68.3	E) 78.8	I) 94.5	M) 100.0	Q) 105.0	U) 78.8
+ EOM	B) 236.2	F) 302.4	J) 359.1	N) 315.0	R) 220.5	V) 175.0
+ REDUCT	C) 6.9	G) 3.5	K) 4.6	O) 8.1	S) 14.4	W) 20.2
- BOM	D) 177.5	H) 236.2	L) 302.4	P) 359.1	T) 315.0	X) 220.5
= PURCH	133.9	148.5	155.8	64.0	24.9	53.5
G M %	41.6%	44.6%	44.4%	42.7%	39.7%	33.4%

FIELD LETTER ? AMOUNT ?

ENTER A FIELD LETTER OF 'Z' TO RECEIVE MANAGEMENT COMMENTS, A 'Y' TO EXIT.

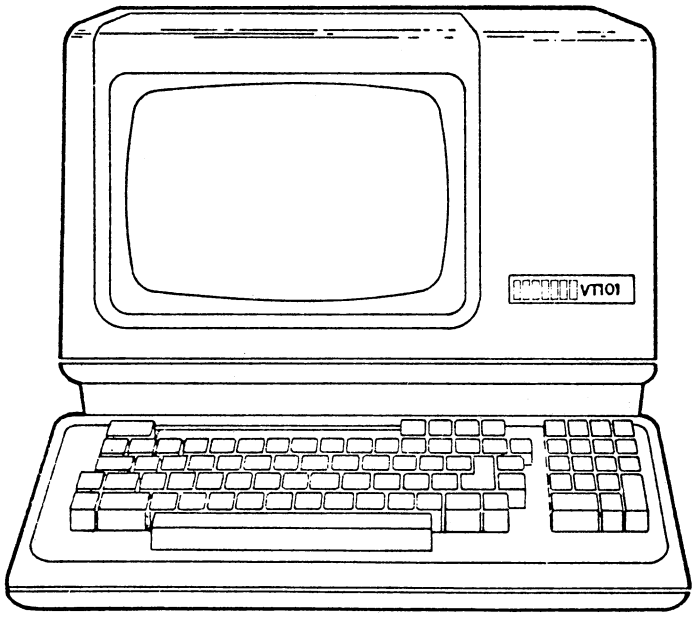

RETAIL SIMULATION
UNIT AND DOLLAR CONTROL

Welcome to the Retail Simulation Game -- Unit and Dollar Control! The purpose of this simulation game is to allow you to make stock reorder and price change decisions in a hypothetical but life-like environment. You will monitor the stock and sales for two classifications in the junior sportswear department of Albert J. Jolly Dry Goods for a six month season.

To play the game you will have to:

1) Read the Manual
2) Analyze past stock and sales information
3) Project future sales
4) Make decisions to maintain adequate stock in the jeans and tops classifications

You will use a Digital VT101 computer terminal (see photo) to play the simulation. These terminals are located in Home Economics West 039, Ag Hall room 241 and the basement of the Business Administration building room 09. You will also need a calculator.



Albert J. Jolly Dry Goods - A Brief History

Albert J. Jolly Dry Goods is a medium-to-large sized department store located in the central business district of a large city. The store was founded 50 years ago by a dashing young entrepreneur named Albert J. Jolly. Under his leadership the store has grown to occupy several stories of a prestigious building downtown. Albert J. Jolly Dry Goods has also gained acclaim as the fashion leader in the city.

Your Role at Albert J. Jolly Dry Goods

You have just been promoted to the assistant buyer position in the Junior Sportswear Department of Albert J. Jolly Dry Goods. The buyer for the department has been to market and has purchased merchandise for the department based on the season's six-month plan. You are in charge of monitoring stock and sales levels for the tops and jeans classifications. There are 30 stockkeeping units (SKUs) for which you are directly responsible. A chart detailing the SKUs is presented on page 10. Please take a moment to review the chart.

As the new assistant buyer you have three major responsibilities:

1) To make sure that actual sales levels meet planned sales levels
2) To maintain adequate stock to support planned sales
3) To achieve a maintained markup that meets or exceeds the 40 percent minimum maintained markup set by store management.

The tools that you have to carry out these responsibilities are:

1) The authority to order additional stock to meet customer demand
2) The authority to change an SKU's price to stimulate sales or strengthen the maintained markup.

HOW TO PLAY THE GAME

Most games require a set of instructions and this one is no exception. The purpose of this section of the manual is to provide an overview of the game, show you how to get valuable information about stock and sales levels from the computer and to show you how to enter your decisions.

Overview of the Game

Let's start with the basics of the game. First, the game will last for six periods. Each of these periods represents a month. Each of these periods, or months, is characterized by a three-step process:

1) Analyzing the SKUs to determine the need for reordering stock or changing prices
2) Entering orders or price changes into the computer
3) Instructing the computer to simulate a month of sales activity

The most important part of the game, and of managing a real-life department is doing a good job of analyzing the stock and sales figures (#1 above). To help you with your analysis, projected six-month plans are included as well as market and department information. The next section will explain how to use the computer to help you analyze your stock and sales condition.

HOW TO GET VALUABLE INFORMATION FROM THE COMPUTER

After you have performed the tasks to logon the computer and have keyed in your student number, you will be looking at a screen entitled MAIN MENU (Exhibit 1).

Exhibit 1

ALBERT J. JOLLY DRY GOODS

M A I N M E N U

SELECTION	DESCRIPTION
1.	SALES/STOCK ANALYSIS BY STYLE
2.	STOCK ANALYSIS BY STYLE/SIZE/COLOR
3.	OPEN-TO-BUY STATUS
4.	STOCK ORDER SCREEN
5.	END PROGRAM

PLEASE ENTER THE NUMBER OF YOUR SELECTION AND HIT RETURN.

This screen lists the choices available to you. The first three choices offer information to help you analyze and view your stock status from different perspectives. The fourth choice leads you to the stock order and price change screen. The fifth choice allows you to end the simulation and logoff. You may make one selection at a time. To make a selection, type the number corresponding to your choice and hit the RETURN key.

Let's discuss the first three options, since they can help you determine whether you are overstocked, understocked, or adequately stocked. Let's take each choice and discuss it in greater detail.

Stock Analysis By Style

The Stock Analysis By Style screen provides a summary of the department's stock and sales situation. Looking at Exhibit 2, you can see that the information is broken down first by class (i.e. Jeans and Tops), and then by style within class. All of the figures you will see on the screen are for the period just ended. For example, if you are in period 4, April, the figures on the screen are the result of sales activity in period 3, March.

Under the sales heading, then, are planned sales during March of this year, actual sales during March of this year, and the amount that actual sales are over or under planned sales. As you can see similar information is presented for stock levels. Remember that the figures will be in thousands. If a figure appears on the screen as 100.5, it really means $100,500.

Exhibit 2

ALBERT J. JOLLY DRY GOODS
SALES AND STOCK ANALYSIS BY STYLE

		--------SALES (000'S)--------				--------STOCK (000'S)--------			
CLASS	STYLE	LY	PLAN	ACTUAL	OVER UNDER	LY	EOM PLAN	ACTUAL	OVER UNDER
JEANS	BASIC								
	WESTERN								
	FASHION								
TOTAL	JEANS								
TOPS	BASIC								
	FASHION								
	FAD								
TOTAL	TOPS								

TO RETURN TO THE MAIN MENU, STRIKE ANY KEY AND HIT RETURN

When you have finished viewing the information on the screen, strike any character and hit the RETURN key. This will return you to the Main Menu where you may make another selection.

Stock Analysis By Style, Size, Color

The Stock Analysis By Style, Size, Color screen provides more detailed information than the Stock Analysis By Style Screen. When you select this option on the Main Menu a "selection" screen appears (Exhibit 3). This screen merely asks you to select the class and style whose stock status you would like to view. Enter the number of the class that you want to view (Jeans = 1, Tops = 2) and hit RETURN. Next enter the number of the style you want and hit RETURN. The Stock Analysis By Style, Size, Color screen will then appear with the class/style information you requested.

Exhibit 3

```
        STOCK ANALYSIS BY STYLE / SIZE / COLOR

                    SELECTION MENU

  CLASS                                          CLASS

JEANS = 1                                      TOPS = 2

  STYLE                                          STYLE

BASIC = 1                                      BASIC = 1
WESTERN = 2                                    FASHION = 2
FASHION = 3                                    FAD = 3

ENTER A "Y" TO RETURN TO THE MAIN MENU, OR HIT RETURN TO MAKE A
CLASS AND STYLE CHOICE.

ENTER YOUR "CLASS" CHOICE (type 1 or 2)

ENTER YOUR "STYLE" CHOICE (type 1, 2, or 3)
```

Exhibit 4 is an example of the Stock Analysis By Style, Size, Color screen. The information on the screen includes on-hand and planned stock units, the on-hand and planned dollar value of that stock, the number of units and the dollar amount of the stock on-order, and the retail price of each SKU in the style. This screen is helpful in monitoring the stock condition of particular SKUs in a style.

When you have finished viewing the information on the screen, strike any character and hit the RETURN key. This will return you to the Selection Menu, where you may choose another class/style combination or return to the Main Menu.

Exhibit 4

```
                    ALBERT J. JOLLY DRY GOODS
                STOCK ANALYSIS BY STYLE/SIZE/COLOR

                    CLASS = JEANS     STYLE =

                  -----UNITS----      ---DOLLARS----    -----ON ORDER--   RETAIL
SIZE    COLOR     ON HAND / PLAN      ON HAND / PLAN    UNITS / DOLLARS   PRICE

  5     BLUE

  7     BLUE

  9     BLUE

 11     BLUE

STYLE TOTAL

        TO RETURN TO THE SELECTION MENU, STRIKE ANY KEY AND HIT RETURN.
```

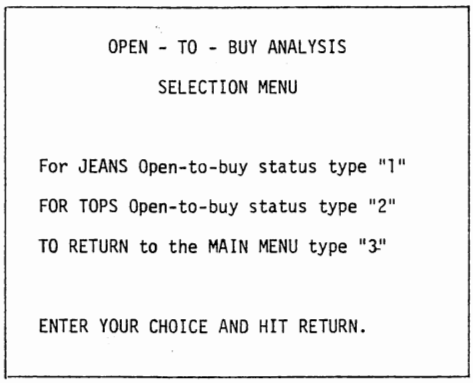
Open-To-Buy

When you select the open-to-buy option from the Main Menu a "selection" screen appears (Exhibit 5). This selection menu provides you with 3 options:

1) You may view the open-to-buy status for the jeans class
2) You may view the open-to-buy status for the Tops class
3) You may return to the Main Menu

Enter the number of your choice (1, 2, or 3) and hit the RETURN key. Depending on your choice, you will either get an open-to-buy screen or the Main Menu.

Exhibit 5



The Open-To-Buy screen provides a summary of the open-to-buy status of your department for the entire merchandising season. As you can see in Exhibit 6 all of the figures for the six periods are planned figures. However, as the game progresses planned figures in previous periods get replaced with actual figures. Again, all of the figures are in thousands, so a 78.5 really means $78,500.

When you have finished viewing the information on the open-to-buy screen, type any character and hit RETURN. This will return you to the selection screen.

Exhibit 6

ALBERT J. JOLLY DRY GOODS
OPEN-TO-BUY STATUS

CLASS =

	PERIOD 1	PERIOD 2	PERIOD 3	PERIOD 4	PERIOD 5	PERIOD 6
PLANNED SALES						
+ REDUCTIONS						
+ PLANNED EOM						
	----	----	----	----	----	----
= MERCH NEEDED						
- PLANNED BOM	----	----	----	----	----	----
	----	----	----	----	----	----
=PLN PURCHASES						
- ON ORDER						
	----	----	----	----	----	----
= OPEN-TO-BUY						

TO RETURN TO THE SELECTION MENU, STRIKE ANY KEY AND HIT RETURN.

REORDERING STOCK AND MAKING PRICE CHANGES

After you have analyzed the sales and stock information, formulate a plan for maintaining the desired stock to sales balance. You may reorder or change the price for each SKU. However, if the stock to sales balance is in line with the six-month plan then you may choose to leave things as they are. Be sure that you have adequately analyzed the sales and stock information before you select the stock reorder screen. When you are ready to enter your reorder or price change decisions select the stock reorder screen (selection number 4 on the Main Menu). Type in the number "4" and hit RETURN. The stock order screen will appear (Exhibit 7).

Exhibit 7

ALBERT J. JOLLY DRY GOODS
STOCK ORDER SCREEN

PERIOD

CLASS STYLE SIZE COLOR QUANTITY RETAIL PRICE

TO ORDER A JEANS ITEM:

Type a "1" under CLASS, Hit RETURN.
Type a number under STYLE, Hit RETURN.
Your choices are: Basic = 1
Western = 2
Fashion = 3
Type a number under SIZE, Hit RETURN.
Your choices are: 5, 7, 9, or 11
Type a "1" under COLOR, Hit RETURN.
Type the QUANTITY in units, Hit RETURN.
Type the RETAIL PRICE in dollars and cents (e.g. 25.00). Hit RETURN.

TO ORDER A TOPS ITEM:

Type a "2" under CLASS, Hit RETURN.
Type a number under STYLE, Hit RETURN.
Your choices are: Basic = 1
Fashion = 2
Fad = 3
Type a letter under SIZE, Hit RETURN.
Your choices are: S, M, or L
Type a number under COLOR, Hit RETURN.
Your choices are: Blue = 1, Beige = 2
Type the QUANTITY in units, Hit RETURN.
Type the RETAIL PRICE in dollars and cents (e.g. 25.00), Hit RETURN.

You must enter the class code, style code, size, color code, quantity in units, and price in dollars and cents for each order or price change. Once your order is accepted a selection screen will allow you to choose whether you wish to place another order or let the computer simulate a month of sales activity. Type "Y" if you wish to place another order, or type "N" if you have finished ordering. If you choose to place another order, the stock reorder and price change screen will appear. If you do not wish to place another order a screen will appear to ask if you are CERTAIN that you are finished ordering. Type "Y" if you have finished ordering, or type "N" if you wish to place another order. If you typed "N" you will be returned to the stock reorder and price change screen, otherwise a month of sales activity will be simulated by the computer. This process takes about 30 seconds. After the simulation, the Main Menu screen will appear. At this point, you may end the program by typing "5" or continue the program by selecting another menu item.

General Information/Helpful Hints

1) Demand is made up of many factors. Demand is influenced by the sales trend, price, consumer demographics and random consumer preference. You can control the price of each SKU and therefore have some influence on demand. Demand for each SKU is generated independently. Study the past sales trends to help you anticipate future demand.

2) You may change the price of any stock-keeping unit (SKU) at any time. The price change will take effect for the upcoming period. Price sensitivity varies by product, but as you would expect, the greater the markdown - the greater the sales for the product should be.

3) Merchandise ordered in a period will be available for sale during the next period.

4) Market and department information (page 12) should help you project sales for the various stock-keeping units.

5) Management requires that all SKU prices within a style be the same. However, prices may vary between styles.

6) Feel free to take notes, write down important figures or results, make charts, or use any other tools to help you keep track of your SKUs.

7) To get the dollar amount of your reductions for a style, use the following formula:

$$\frac{\text{Sales for Style}}{\text{Current Price}} = \text{Units Sold}$$

Units sold (original price - new price) = Reductions

INSTRUCTIONS FOR LOGGING ON THE COMPUTER

If the terminal is not on, and it probably will not be, the switch is located on the back of the terminal on the left side. Move the switch from the downward position to the upward position. The terminal should beep as it is turned on. Allow 5 to 10 seconds for the blinking cursor to appear in the top left corner of the screen.

If you use a terminal in the basement of Home Economics West, follow the instructions taped on the desk to the left of the terminal. If you are using a terminal in Ag Hall or in the Business building, hold down the keys CTRL and T, then release and hit the RETURN key.

The following message will appear on the screen:

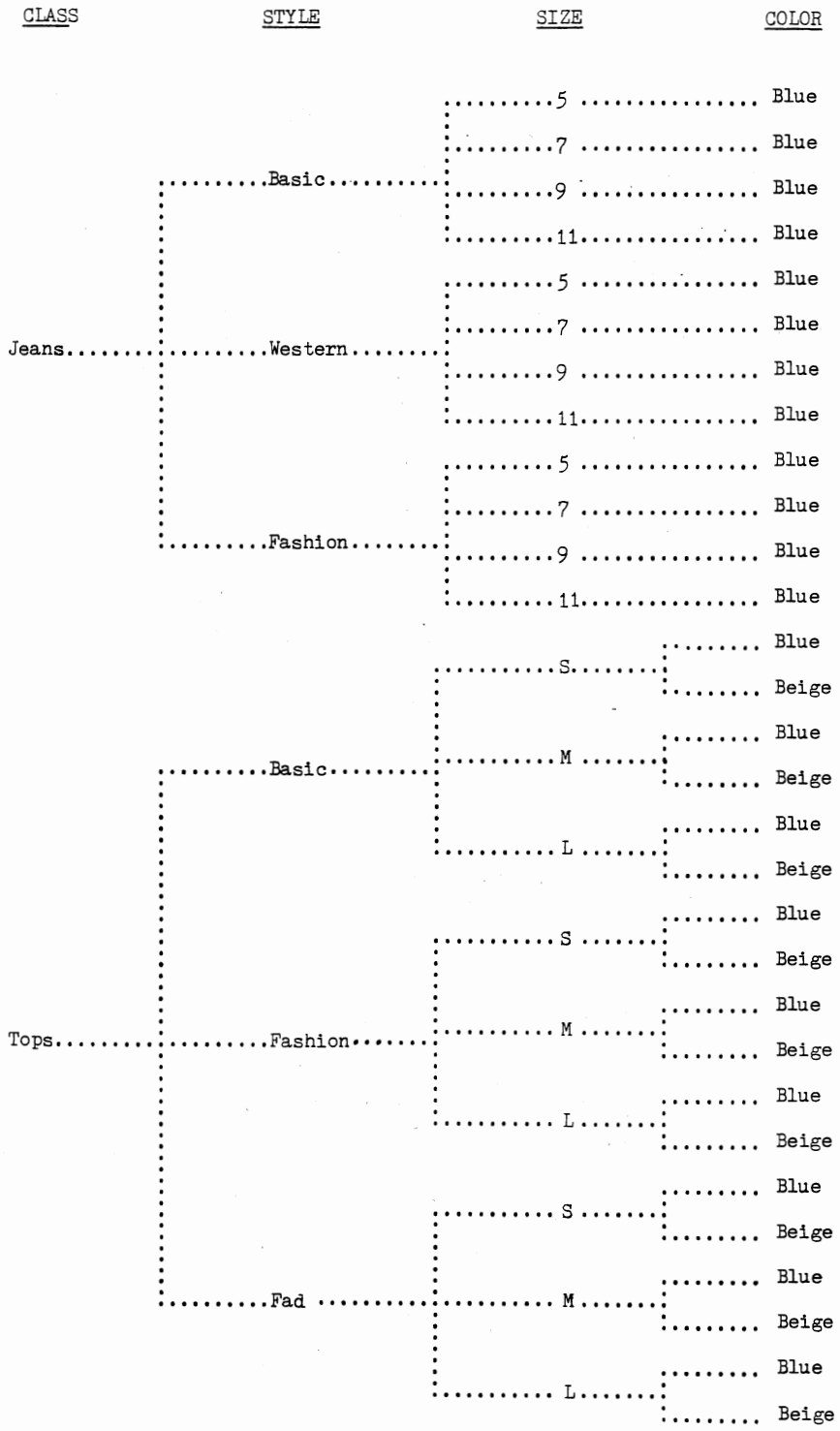
OKLAHOMA STATE UNIVERSITY COMPUTER NETWORK
ENTER SYSTEM NAME IN CAPITAL LETTERS (VAX, VAX300, IBM, OR IBMAPL)

You will type VAX in capital letters and hit the RETURN key. The computer will respond with the message COM. You will hit the RETURN key again. Next, the computer will ask for a Username. You will type in your assigned Username: _____and then hit the RETURN key. The computer will now ask for a Password. You will type in the letters RSIM and hit the RETURN key.

A title screen will appear on the terminal and then a screen which briefly describes the simulation scenario will appear. Next, the computer will prompt you to enter your student I.D. number. Type in the number and hit the RETURN key.

* *

If you have questions about the unit and dollar control simulation or about using the computer, please call Laura Jolly at X5036. Leave your name and phone number and specify a time that you can be reached during the day.


CLASS
STYLE
SIZE
COLOR
Jeans
Basic
5
Blue
7
Blue
9
Blue
11
Blue
Western
5
Blue
7
Blue
9
Blue
11
Blue
Fashion
5
Blue
7
Blue
9
Blue
11
Blue
Tops
Basic
S
Blue
Beige
M
Blue
Beige
L
Blue
Beige
Fashion
S
Blue
Beige
M
Blue
Beige
L
Blue
Beige
Fad
S
Blue
Beige
M
Blue
Beige
L
Blue
Beige

SIX MONTH PLAN - JEANS CLASSIFICATION

	PERIOD 1	PERIOD 2	PERIOD 3	PERIOD 4	PERIOD 5	PERIOD 6
SALES	$ 50,750	$ 91,000	$ 48,300	$ 33,950	$ 35,350	$38,150
EOM	203,805	161,105	146,755	148,155	150,955	146,580
RED	7,700	13,650	8,050	6,300	6,475	8,400
BOM	163,555	203,805	161,105	146,755	148,155	150,955
PURCH	91,000	48,300	33,950	35,350	38,150	33,775

SIX MONTH PLAN - TOPS CLASSIFICATION

	PERIOD 1	PERIOD 2	PERIOD 3	PERIOD 4	PERIOD 5	PERIOD 6
SALES	$ 81,200	$145,600	$ 77,280	$54,320	$56,560	$ 61,040
EOM	326,088	257,768	234,808	237,048	241,528	234,528
RED	12,320	21,840	12,880	10,080	10,360	13,440
BOM	261,688	326,088	257,768	234,808	237,048	241,528
PURCH	145,600	77,280	54,320	56,560	61,040	54,040

MARKET AND DEPARTMENT INFORMATION

Based on the sales results from previous years, the projected breakdown of sales by style within the jeans and tops classifications is as follows:

JEANS		TOPS	
Basic	= 45%	Basic	= 40%
Western	= 30%	Fashion	= 50%
Fashion	= 25%	Fad	= 17%

The projected breakdown of sales for each size is as follows:

JEANS		TOPS	
S	= 33%	5	= 20%
M	= 50%	7	= 30%
L	= 17%	9	= 30%
		11	= 20%

The projected breakdown of sales for the color choices in the tops classification is as follows:

BLUE = 40% BEIGE = 60%

Price varies by style for each classification. The price structure is as follows:

CLASS	STYLE	COST	RETAIL
Jeans	Basic	$12.50	$25.00
Jeans	Western	9.00	18.00
Jeans	Fashion	17.50	35.00
Tops	Basic	$10.00	$20.00
Tops	Fashion	12.50	25.00
Tops	Fad	15.00	30.00

JEANS		TOPS	
LY Sales by Month		LY Sales by Month	
Period 1	$ 43.3	Period 1	$ 69.2
Period 2	74.4	Period 2	81.5
Period 3	44.0	Period 3	43.3
Period 4	34.2	Period 4	54.7
Period 5	35.7	Period 5	57.1
Period 6	47.7	Period 6	76.3

APPENDIX H

GREENBLAT'S (1973) PROPOSITIONS AND SHERRELL AND BURNS (1982) FACTOR ANALYSIS RESULTS CONCERNING THE PEDAGOGICAL EFFECTS OF SIMULATIONS

Some Propositions on the Pedagogical Effects of Simulations (Greenblat, 1973)

1. Motivation and Interest
   a. Participation in simulation games is itself interesting and involving.
   b. Participation in simulation games increases interest in the topics simulated.
   c. Participation in simulation games increases interest in the course in which the simulation is employed.
   d. Participation in simulation games increases interest, enthusiasm, and commitment to learning in general.

2. Cognitive Learning
   a. Participants in simulation games gain factual information.
   b. Participants in simulation games learn procedural sequences.
   c. Participants in simulation games learn general principles of the subject matter simulated.
   d. Simulation games provide simplified worlds from which students can stand back and understand the structure of the everyday 'real' world.
   e. Participants in simulation games gain in explicitness: "The capacity to identify consciously elements of a problem in an analytic or technical sense."
   f. Participants in simulation games learn a systematic analytical approach.
   g. Participants in simulation games learn better decision-making skills.
   h. Participants in simulation games learn 'winning strategies' in those situations simulated

3. Changes in the Character of Later Course Work
   a. Participation in simulation games makes later work (e.g., lectures, reading) more meaningful.
   b. Participation and simulation games leads students to more sophisticated and relevant inquiry, for discussion of the simulation leads to questions about real-world analogies.
   c. Class discussions following a simulation will involve greater participation by class members, as they will have had a shared experience.

4. Affective Learning Re Subject Matter
   a. Participation in simulation games leads to changed perspectives and orientations (e.g., attitudes toward various public and world issues, attitudes toward the importance of collective versus individual action, attitudes toward deviant life styles).
   b. Participation in simulation games leads to increased empathy for others (e.g., national decision makers, ghetto residents) and increased insight into the way the world is seen by them.
   c. Participation in simulation games leads to increased insight into the predicaments, pressures, uncertainties, and moral and intellectual difficulties of others.

5. General Affective Learning
   a. Participants in simulation games gain increased self-awareness.
   b. Participants in simulation games gain a greater sense of personal efficacy and potency.

6. Changes in Classroom Structure and Relations
   a. Use of simulation games promotes better student-teacher relations.
   b. Use of simulation games leads students to perceive greater freedom to explore ideas.
   c. Use of simulation games leads to students' becoming more autonomous, thus changing teacher-student relationships.
   d. Use of simulation games leads to students perceiving teachers more positively.
   e. Use of simulation games produces more relaxed, natural exchange between students and teachers.
   f. Use of simulation games leads to increased knowledge of other students (by students) and greater peer acceptance.
   g. Use of simulation games involves a diminishing of the teacher's role as judge and jury.
   h. Use of simulation games leads to teachers perceiving students more positively.

Attitude Scale Factor Analysis Results
(Sherrell and Burns, 1982)

Factor 1 - Perceived Knowledge
Gained insight into decision problem
Increased awareness of difficulties involved
Gained insight into pressures faced by decision makers
Learned the procedures of location analysis
Aided understanding of location analysis
Increased appreciation of problems faced
Learned general principles involved
Increased awareness of uncertainties faced
Gained actual information from exercise

Factor 2 - Enjoyment
Exercise was interesting
Exercise increased my interest
Exercise was fun
Exercise was enjoyable
Exercise increased my enthusiasm to learn
Exercise will make other coursework enjoyable
Exercises was boring
Exercise increased my interest in course
Exercise leads to more student independence
Exercise leads to more relaxed exchange between students and teachers

Factor 3 - Perceived Benefits
- Increased my sense of my personal abilities
- Increased my awareness of my own potential
- Helped increase my own self-awareness
- Would lead me to participate more in related class discussions
- Increased my interest in learning in general

Factor 4 - Student/Teacher Relations
- Leads teachers to perceive students more positively in general
- Promotes better student/teacher relationships
- Leads to greater peer acceptance
- Helps students perceive teachers more positively

Factor 5 - Decision Skills
- Exercise was too low-level
- Changed my perspective on some parts of marketing
- Gained better decision skills

APPENDIX I

ATTITUDE SCALES FOR THE TWO EXPERIMENTS

Your Name: _____ 1 ___
2 ___
ID #: _____ 3 ___

Exercise: ___ 4 ___

SIX-MONTH PLANNING
EXERCISE RATING SCALE

INSTRUCTIONS: For each of the following statements please indicate the degree to which you agree or disagree by circling the appropriate number. The response category options range from "strongly disagree" to "strongly agree." Please consider each statement individually and think only in terms of the exercise which you have just completed.

	DEGREE OF AGREEMENT OR DISAGREEMENT						
	STRONGLY DISAGREE				STRONGLY AGREE		
The exercise was interesting.	1	2	3	4	5	5	___
I gained better decision-making skills.	1	2	3	4	5	6	___
Exercises such as this one lead students to be more independent, thus changing student-teacher relationships.	1	2	3	4	5	7	
The exercise was involving.	1	2	3	4	5	8	___
The exercise helped me to learn "winning strategies."	1	2	3	4	5	9	___
Exercises such as this one help students perceive teachers in a more positive light.	1	2	3	4	5	10	___
The exercise increased my interest in the topic.	1	2	3	4	5	11	___
I believe that the exercise will make other work in the course more meaningful.	1	2	3	4	5	12	___
Exercises such as this one provide a relaxed, natural exchange between students and teachers.	1	2	3	4	5	13	___
The exercise increased my interest in this course.	1	2	3	4	5	14	___
I believe the exercise would lead me to asking better questions.	1	2	3	4	5	15	___
The exercise increased my interest in learning in general.	1	2	3	4	5	16	___
I believe the exercise would lead me to participate more in a class discussion on this topic.	1	2	3	4	5	17	___
The exercise increased my enthusiasm to learn in general.	1	2	3	4	5	18	___
The exercise changed my perspective on some part of retailing.	1	2	3	4	5	19	___
Exercises such as this one reduce the necessity of the teacher to judge learning.	1	2	3	4	5	20	___
The exercise increased my commitment to learn in general.	1	2	3	4	5	21	___
The exercise increased my appreciation for those problems involved in six month planning.	1	2	3	4	5	22	___
Exercises such as this one lead teachers to perceiving students more positively in general.	1	2	3	4	5	23	___
I gained actual information from the exercise.	1	2	3	4	5	24	___
The exercise increased my insight into the ways in which people who make retail store decisions see the world.	1	2	3	4	5	25	___
The exercise was enjoyable.	1	2	3	4	5	26	___

	STRONGLY DISAGREE				STRONGLY AGREE		
I learned the procedures of six month planning.	1	2	3	4	5	27	___
The exercise gave me insight into the pressures faced by those making six month planning decisions.	1	2	3	4	5	28	___
The exercise was fun.	1	2	3	4	5	29	___
I learned the general principles involved in six month planning.	1	2	3	4	5	30	___
The exercise increased my awareness of the uncertainties faced by those involved in six month planning decisions.	1	2	3	4	5	31	___
The exercise made me feel uncomfortable.	1	2	3	4	5	32	___
The exercise helped me to better understand the structure of the everyday, "real world."	1	2	3	4	5	33	___
The exercise increased my awareness of the difficulties in general of those involved with six month planning.	1	2	3	4	5	34	___
The exercise took too long.	1	2	3	4	5	35	___
The exercise helped me to understand and identify various elements in six month planning.	1	2	3	4	5	36	___
The exercise helped me to increase my own self awareness.	1	2	3	4	5	37	___
The exercise was boring.	1	2	3	4	5	38	___
I learned a systematic and analytical approach to six month planning.	1	2	3	4	5	39	___
The exercise increased my sense of my personal abilities.	1	2	3	4	5	40	___
The exercise was too low-level.	1	2	3	4	5	41	___
The exercise increased my awareness of my own potential.	1	2	3	4	5	42	___
The exercise was too unstructured.	1	2	3	4	5	43	___
An exercise such as this one promotes better student-teacher relationships.	1	2	3	4	5	44	___
An exercise such as this one provides greater freedom for students to explore ideas.	1	2	3	4	5	45	___

Your Name: _____ 1 ___
2 ___
ID #: _____ 3 ___

Exercise: ___ 4 ___

UNIT AND DOLLAR CONTROL
EXERCISE RATING SCALE

INSTRUCTIONS: For each of the following statements please indicate the degree to which you agree or disagree by circling the appropriate number. The response category options range from "strongly disagree" to "strongly agree." Please consider each statement individually and think only in terms of the exercise which you have just completed.

	DEGREE OF AGREEMENT OR DISAGREEMENT						
	STRONGLY DISAGREE				STRONGLY AGREE		
The exercise was interesting.	1	2	3	4	5	5	___
I gained better decision-making skills.	1	2	3	4	5	6	___
Exercises such as this one lead students to be more independent, thus changing student-teacher relationships.	1	2	3	4	5	7	
The exercise was involving.	1	2	3	4	5	8	___
The exercise helped me to learn "winning strategies."	1	2	3	4	5	9	___
Exercises such as this one help students perceive teachers in a more positive light.	1	2	3	4	5	10	___
The exercise increased my interest in the topic.	1	2	3	4	5	11	___
I believe that the exercise will make other work in the course more meaningful.	1	2	3	4	5	12	___
Exercises such as this one provide a relaxed, natural exchange between students and teachers.	1	2	3	4	5	13	___
The exercise increased my interest in this course.	1	2	3	4	5	14	___
I believe the exercise would lead me to asking better questions.	1	2	3	4	5	15	___
The exercise increased my interest in learning in general.	1	2	3	4	5	16	___
I believe the exercise would lead me to participate more in a class discussion on this topic.	1	2	3	4	5	17	___
The exercise increased my enthusiasm to learn in general.	1	2	3	4	5	18	___
The exercise changed my perspective on some part of retailing.	1	2	3	4	5	19	___
Exercises such as this one reduce the necessity of the teacher to judge learning.	1	2	3	4	5	20	___
The exercise increased my commitment to learn in general.	1	2	3	4	5	21	___
The exercise increased my appreciation for those problems involved in unit and dollar control.	1	2	3	4	5	22	___
Exercises such as this one lead teachers to perceiving students more positively in general.	1	2	3	4	5	23	___
I gained actual information from the exercise.	1	2	3	4	5	24	___
The exercise increased my insight into the ways in which people who make retail store decisions see the world.	1	2	3	4	5	25	___
The exercise was enjoyable.	1	2	3	4	5	26	___

	STRONGLY DISAGREE				STRONGLY AGREE		
I learned the procedures of unit and dollar control.	1	2	3	4	5	27	___
The exercise gave me insight into the pressures faced by those making unit and dollar control decisions.	1	2	3	4	5	28	___
The exercise was fun.	1	2	3	4	5	29	___
I learned the general principles involved in unit and dollar control.	1	2	3	4	5	30	___
The exercise increased my awareness of the uncertainties faced by those involved in unit and dollar control decisions.	1	2	3	4	5	31	___
The exercise made me feel uncomfortable.	1	2	3	4	5	32	___
The exercise helped me to better understand the structure of the everyday, "real world."	1	2	3	4	5	33	___
The exercise increased my awareness of the difficulties in general of those involved with unit and dollar control.	1	2	3	4	5	34	___
The exercise took too long.	1	2	3	4	5	35	___
The exercise helped me to understand and identify various elements in unit and dollar control.	1	2	3	4	5	36	___
The exercise helped me to increase my own self awareness.	1	2	3	4	5	37	___
The exercise was boring.	1	2	3	4	5	38	___
I learned a systematic and analytical approach to unit and dollar control.	1	2	3	4	5	39	___
The exercise increased my sense of my personal abilities.	1	2	3	4	5	40	___
The exercise was too low-level.	1	2	3	4	5	41	___
The exercise increased my awareness of my own potential.	1	2	3	4	5	42	___
The exercise was too unstructured.	1	2	3	4	5	43	___
An exercise such as this one promotes better student-teacher relationships.	1	2	3	4	5	44	___
An exercise such as this one provides greater freedom for students to explore ideas.	1	2	3	4	5	45	___

APPENDIX J

PRETESTS AND POSTTESTS FOR THE TWO EXPERIMENTS

PRETEST
SIX-MONTH PLANNING

PART I:
DIRECTIONS: Use the given control data to evaluate the six month plan. Answer the questions by placing a check (✓) in the blank to the left of the correct answer. If the correct answer is not given, write the correct answer in the blank provided.

CONTROL DATA

PLANNED SALES = $300,000 REDUCTIONS = 15%

INITIAL MARKUP = 47% TURNOVER = 3

	% Sales by Month	% Reduction by Month	BOM Stock-to-Sales Ratios
AUG.	12%	10%	2.5
SEPT.	14%	11%	3.2
OCT.	16%	14%	3.2
NOV.	21%	19%	3.6
DEC.	20%	21%	3.0
JAN.	17%	25%	2.5

SIX MONTH PLAN

	AUG	SEPT	OCT	NOV	DEC	JAN
SALES	$ 36,000	$ 42,000	$ 48,000	$ 63,000	$ 60,000	$ 51,000
EOM	134,500	153,600	226,800	180,000	127,500	100,000
RED	4,500	6,300	6,300	8,550	9,450	11,250
BOM	90,000	134,400	153,600	226,800	180,000	132,600
PURCH	84,900	66,150	127,500	118,350	16,950	34,750

1. What should sales for August be?
   _____$39,000
   _____$36,000
   _____$42,000
   _____None of the above, but the correct answer is _____

2. What should the reduction dollars for September be?
   _____$4,950
   _____$6,300
   _____$4,620
   _____None of the above, but the correct answer is _____

3. What should the BOM stock dollars for January be?
   _____$153,000
   _____$100,000
   _____$132,600
   _____None of the above, but the correct answer is _____

4. What should the planned purchase dollars be for November?
   _____$118,350
   _____$109,800
   _____$24,750
   _____None of the above, but the correct answer is _____

PART II:

DIRECTIONS: Place a check (✓) in the blank to the left of the correct answer.

1. What effect would a decrease in sales for a month have on the BOM stock-to-sales ratio for the month?
   _____Increase the BOM stock-to-sales ratio
   _____Decrease the BOM stock-to-sales ratio
   _____Have no effect on the BOM stock-to-sales ratio

2. What effect would an increase in sales have on the gross margin percent?
   _____Increase the gross margin percent
   _____Decrease the gross margin percent
   _____Have no effect on the gross margin percent

3. What effect would an increase in sales for a month have on the EOM stock-to-sales ratio for the month?
   _____Increase the EOM stock-to-sales ratio
   _____Decrease the EOM stock-to-sales ratio
   _____Have no effect on the EOM stock-to-sales ratio

4. What effect would a decrease in sales for a month have on the planned purchases for the month?
   _____Increase the planned purchases
   _____Decrease the planned purchases
   _____Have no effect on the planned purchases

5. What effect would an increase in reductions have on the gross margin percent?
   _____Increase the gross margin percent
   _____Decrease the gross margin percent
   _____Have no effect on the gross margin percent

6. What effect would an increase in reductions for a month have on the EOM stock-to-sales ratio for the month?
   _____Increase the EOM stock-to-sales ratio
   _____Decrease the EOM stock-to-sales ratio
   _____Have no effect on the EOM stock-to-sales ratio

7. What effect would a decrease in reductions for a month have on the planned purchases for the month?
   _____Increase the planned purchases figure
   _____Decrease the planned purchases figure
   _____Have no effect on the planned purchases figure

8. What effect would a decrease in reductions for a month have on the BOM stock-to-sales ratio for the month?
   _____Increase the BOM stock-to-sales ratio
   _____Decrease the BOM stock-to-sales ratio
   _____Have no effect on the BOM stock-to-sales ratio

PART III:

DIRECTIONS: Use the figures on the six-month plan and the control data as a basis for any needed calculations. Answer the questions by placing a check (✓) in the blank to the left of the correct answer. If the correct answer is not given, write the correct answer in the blank provided.

SIX-MONTH PLAN

	AUG	SEPT	OCT	NOV	DEC	JAN
SALES	$ 65,000	$ 75,000	$ 90,000	$ 95,000	$100,000	$ 75,000
EOM	225,000	288,000	342,000	300,000	210,000	166,667
RED	6,600	3,300	4,400	7,700	13,750	19,250
BOM	169,000	225,000	288,000	342,000	300,000	210,000
PURCH	127,600	141,300	148,400	60,700	23,750	50,917

CONTROL DATA

TOTAL PLANNED SALES = $500,000

REDUCTIONS = 11%

INITIAL MARKUP = 47%

STOCK TURNOVER = 3

	% Sales by Month	% Reduction by Month	BOM Stock-to-Sales Ratios
AUG.	13%	12%	2.6
SEPT.	15%	6%	3.0
OCT.	18%	8%	3.2
NOV.	19%	14%	3.6
DEC.	20%	25%	3.0
JAN.	15%	35%	2.8

NOTE: You may detach this sheet to answer the questions in Part III if necessary.

PART III:

1. If sales for January increased by $5,000, what would the planned purchases be for January?
   _____$55,917
   _____$45,917
   _____$50,917
   _____None of the above, but the correct answer is _____

2. If sales for December decreased by $8,000, what would the EOM stock-to-sales ratio be for December?
   _____2.1
   _____2.28
   _____1.94
   _____None of the above, but the correct answer is _____

3. If sales for November increased by $10,000, what would the BOM stock-to-sales ratio be for November?
   _____3.25
   _____4.0
   _____3.6
   _____None of the above, but the correct answer is _____

4. If sales decreased by $10,000 in September, what would the gross margin percent be in September
   _____44.9%
   _____44.7%
   _____44.3%
   _____None of the above, but the correct answer is _____

5. If reductions increased by $500 in November, what would the planned purchases be for November?
   _____$60,700
   _____$61,700
   _____$60,200
   _____None of the above, but the correct answer is _____

6. If reductions were decreased by 5% in January, what would the EOM stock-to-sales ratio be for January?
   _____2.1
   _____2.2
   _____2.3
   _____None of the above, but the correct answer is _____

7. If reductions were decreased by $1,000 in November, what would the gross margin percent be in November?
   _____43.3
   _____42.1
   _____42.7
   _____None of the above, but the correct answer is _____

8. If reductions increased by $1,000 in October, what would the BOM stock-to-sales ratio be for October?
   _____3.0
   _____3.5
   _____3.2
   _____None of the above, but the correct answer is _____

PRETEST

UNIT AND DOLLAR CONTROL

Name _____

Score _____

Part I:

DIRECTIONS: Use the given data as a basis for answering the questions presented below.

A local retailer wants to hold the firm's inventory to a monthly stock-to-sales ratio of 3. Estimated sales are as follows:

MONTH	SALES
January	$15,600
February	$20,800
March	$23,000
April	$24,500
May	$27,000
June	$25,400

How much inventory should the firm have on hand on the following dates?

January _____ May 1 _____

February 1 _____ June _____

April 1 _____

Part II:

DIRECTIONS: Use the given data to determine the dollar amount of merchandise needed for each style. Assume that a stock-to-sales ratio of 3 is planned. Write the dollar amount of the merchandise needed in the spaces provided.

	- - - - - SALES - - - - -		- - - - STOCK - - - -	
	LY ACTUAL	/ TY PLANNED	ON-ORDER	/ ON-HAND
1	$1,000	$1,100	$ 800	$2,000
2	1,500	1,900	1,000	2,900
3	1,500	1,300	900	1,600
4	950	1,100	800	1,200
5	1,200	1,500	1,000	2,000
	$6,150	$6,000	$4,500	$9,700

STYLE 1 _____ STYLE 4 _____

STYLE 2 _____ STYLE 5 _____

STYLE 3 _____

Part III:

DIRECTIONS: Use the given data as a basis for answering the questions. Answer the questions by placing a style number(s) in the blank to the left of the question.

STYLE	- - PERIOD 1 - - Planned Sales	Actual Sales	- - PERIOD 2 - - Planned Sales	Actual Sales	- - PERIOD 3 - - Planned Sales	Actual Sales	- - PERIOD 4 - - Planned Sales	Actual Sales
1	$ 960	$ 912	$1,008	$ 948	$1,078	$1,025	$1,335	$1,125
2	1,080	1,058	1,155	1.213	1,224	1,235	1,359	1.386
3	1,020	1,009	1,081	1,060	1,135	1,113	1,249	1,237
4	948	1,043	995	1,094	1,065	1,150	1,182	1,195
5	1,044	1,054	1,096	1,121	1,151	1,164	1,278	1,287

_____ Which style is the best seller in relation to its planned sales?

_____ Which style is the slowest seller in relation to its planned sales?

_____ Which style(s) is performing better than expected?

_____ Which style(s) is performing worse than expected?

_____ The store management requires that styles be marked down if actual sales are less than 85% of the planned sales. Given this criteria, which style(s) in Period 4 should be marked down?

Answer the following question by writing Yes or No in the blank provided.

_____ Considering all styles, did the department meet its planned sales goal for the four months presented?

Part IV:

DIRECTIONS: Study the sales and stock figures presented. Use the data to answer the following questions.

APRIL - STOCK AND SALES RESULTS

STYLE	--BOM Stock--- UNITS	/ DOLLARS	---Sales--- UNITS	/ DOLLARS	--EOM Stock--- UNITS	/ DOLLARS	--On Order--- UNITS	/ DOLLARS
1	111	$1,665	44	$ 660	67	$1,005	56	$ 840
2	169	2,535	67	1,005	102	1,530	84	1,260
3	79	1,185	23	345	56	840	52	780
	289	5,383	134	2,010	225	3,375	192	2,880

MAY PLANNED SALES

STYLE	--Sales--- Units	/ Dollars
1	49	$ 735
2	90	1,350
3	30	450
	169	$2,535

ASSUMPTIONS: 1) Merchandise on-order in April will be received in May.
2) The store management insists on a stock-to-sales ratio of 3.
3) Assume a retail price of $15.00.

1. If May sales for style 3 are 10% above the planned level, style 3 will be:
   _____ adequately stocked
   _____ under-stocked
   _____ over-stocked

2. If May sales for style 2 are 20% below the planned level, style 2 will be:
   _____ adequately stocked
   _____ under-stocked
   _____ over-stocked

3. Assume that every 5% reduction in price increases unit sales by 10%. If the price for style 3 is reduced by 10%, style 3 will be:
   _____ adequately stocked
   _____ under-stocked
   _____ over-stocked

4. If May sales occur as planned, style 1 will be:
   _____ adequately stocked
   _____ under-stocked
   _____ over-stocked

5. If the April on-order dollar figure for style 1 was reduced by $90.00, what will the BOM stock figure for style 1 be in May? _____

Part V:

DIRECTIONS: Use the given data as a basis for answering the questions.

OPEN-TO-BUY ANALYSIS

Planned Sales	$ 25,000
+ Markdowns	3,750
+ Planned EOM	114,000
= Merchandise Needed	142,750
- Merchandise Available	75,000
= Planned Purchases	67,750
- On-Order	54,200
= Open-to-Buy	$ 13,550

1. Forecasters are predicting a decrease in retail sales for the upcoming month. The management of the store you work for expects sales to drop by 20%. You have used the projected open-to-buy dollars in your department to purchase a new line of swimwear. You purchased 20 dozen swimsuits at a retail price of $35.00 each. If sales decrease by 20%, will your planned open-to-buy dollars cover this purchase?

   _____YES _____NO

   If YES, what would the open-to-buy be after the purchase? _____
   If NO, how much would the open-to-buy need to increase to cover the purchase? _____

2. Management insists that you reorder 3 dozen T-shirt dresses which retail at $55.00 each. According to the original data, is the open-to-buy figure large enough to cover this purchase?

   _____YES _____NO

   If YES, what would the open-to-buy be after the purchase? _____
   If NO, how much would the open-to-buy need to increase to cover the purchase? _____

3. Management insists that you order 50 Aztec sundresses which sell for $65.00 each at retail. However, your merchandise available increased by 5%. According to the original data, is the open-to-buy figure large enough to cover this purchase?

   _____YES _____NO

   If YES, what would the open-to-buy be after the purchase? _____
   If NO, how much would the open-to-buy need to increase to cover the purchase? _____

4. An analysis of the stock and sales results for the past month shows that additional merchandise is needed in the amount of $15,900. According to the original data, is the open-to-buy figure large enough to cover this order?

   _____YES _____NO

   If YES, what would the open-to-buy be after the purchase? _____
   If NO, how much would the open-to-buy need to increase to cover the purchase? _____

POSTTEST
SIX-MONTH PLANNING

PART I:

DIRECTIONS: Use the given control data to evaluate the six month plan. Answer the questions by placing a check (✓) in the blank to the left of the correct answer. If the correct answer is not given, write the correct answer in the blank provided.

CONTROL DATA

TOTAL PLANNED SALES = $600,000 REDUCTIONS = 22%

INITIAL MARKUP = 48% STOCK TURNOVER = 3

	% Sales by Month	% Reduction by Month	BOM Stock-to-Sales Ratios
AUG.	12%	12%	2.8
SEPT.	13%	11%	2.8
OCT.	17%	12%	3.0
NOV.	20%	14%	3.2
DEC.	22%	25%	3.2
JAN.	16%	26%	2.8

SIX MONTH PLAN

	AUG	SEPT	OCT	NOV	DEC	JAN
SALES	$ 72,000	$ 78,000	$120,000	$120,000	$132,000	$ 96,000
EOM	218,400	306,000	384,000	462,000	268,000	200,000
RED	15,840	14,520	15,840	18,480	33,000	24,960
BOM	201,600	218,400	306,000	384,000	422,400	268,800
PURCH	110,640	180,120	195,840	216,480	11,400	61,520

1. What should the reduction dollars be for January?
   _____$24,960
   _____$34,320
   _____$33,000
   _____None of the above, but the correct answer is _____

2. What should the sales for October be?
   _____$102,000
   _____$120,000
   _____$132,000
   _____None of the above, but the correct answer is _____

3. What should the planned purchase dollars be for August?
   _____$110,640
   _____$ 72,960
   _____$ 71,040
   _____None of the above, but the correct answer is _____

4. What should the BOM stock dollars be for November?
   _____$360,000
   _____$384,000
   _____$323,520
   _____None of the above, but the correct answer is _____

PART II:

DIRECTIONS: Place a check (✓) in the blank to the left of the correct answer.

1. What effect would a decrease in reductions have on the gross margin percent?
   _____Increase the gross margin percent
   _____Decrease the gross margin percent
   _____Have no effect on the gross margin percent

2. What effect would an increase in sales for a month have on the BOM stock-to-sales ratio for the month?
   _____Increase the BOM stock-to-sales ratio
   _____Decrease the BOM stock-to-sales ratio
   _____Have no effect on the BOM stock-to-sales ratio

3. What effect would a decrease in sales have on the gross margin percent?
   _____Increase the gross margin percent
   _____Decrease the gross margin percent
   _____Have no effect on the gross margin percent

4. What effect would an increase in reductions for a month have on the BOM stock-to-sales ratio for the month?
   _____Increase the BOM stock-to-sales ratio
   _____Decrease the BOM stock-to-sales ratio
   _____Have no effect on the BOM stock-to-sales ratio

5. What effect would an increase in sales for a month have on the planned purchases for the month?
   _____Increase the planned purchases
   _____Decrease the planned purchases
   _____Have no effect on the planned purchases

6. What effect would an increase in reductions for a month have on the planned purchases for the month?
   _____Increase the planned purchases
   _____Decrease the planned purchases
   _____Have no effect on the planned purchases

7. What effect would a decrease in reductions for a month have on the EOM stock-to-sales ratio for the month?
   _____Increase the EOM stock-to-sales ratio
   _____Decrease the EOM stock-to-sales ratio
   _____Have no effect on the EOM stock-to-sales ratio

8. What effect would a decrease in sales for a month have on the EOM stock-to-sales ratio for the month?
   _____Increase the EOM stock-to-sales ratio
   _____Decrease the EOM stock-to-sales ratio
   _____Have no effect on the EOM stock-to-sales ratio

PART III:

DIRECTIONS: Use the figures on the six month plan and the control data as a basis for any needed calculations. Answer the questions by placing a check (✓) in the blank to the left of the correct answer. If the correct answer is not given write the correct answer in the blank provided.

SIX MONTH PLAN

	AUG	SEPT	OCT	NOV	DEC	JAN
SALES	$ 38,500	$ 45,500	$ 52,500	$ 70,000	$ 80,500	$ 63,000
EOM	113,750	157,500	224,000	281,750	176,400	116,667
RED	7,315	7,980	8,645	11,970	13,300	17,290
BOM	84,700	113,750	157,500	224,000	257,600	176,400
PURCH	74,865	97,230	127,645	139,720	12,600	20,557

CONTROL DATA

TOTAL PLANNED SALES = $350,000

REDUCTIONS = 19%

INITIAL MARKUP = 49%

STOCK TURNOVER = 3

	% Sales by Month	% Reduction by Month	BOM Stock-to-Sales Ratios
AUG.	11%	11%	2.2
SEPT.	13%	12%	2.5
OCT.	15%	13%	3.0
NOV.	20%	18%	3.2
DEC.	23%	20%	3.2
JAN.	18%	26%	2.8

NOTE: You may detach this sheet to answer the questions in Part III if necessary.

PART III:

1. If sales for November decreased by $10,000, what would the BOM stock-to-sales ratio be for November?
   _____3.2
   _____3.73
   _____4.0
   _____None of the above, but the correct answer is _____

2. If reductions increased by $2,000 in September, what would the EOM stock-to-sales ratio be for September?
   _____3.6
   _____3.3
   _____3.46
   _____None of the above, but the correct answer is _____

3. If sales for December increased by $8,000, what would the EOM stock-to-sales ratio be for December?
   _____2.0
   _____2.3
   _____2.19
   _____None of the above, but the correct answer is _____

4. If reductions decreased by $250 in October, what would the planned purchases be for October?
   _____$127,645
   _____$127,895
   _____$127,395
   _____None of the above, but the correct answer is _____

5. If reductions increased by 5% in September, what would the gross margin percent be for September?
   _____39.6%
   _____40%
   _____40.5%
   _____None of the above, but the correct answer is _____

6. If sales increased by $5,000 in January, what would the gross margin percent be for January?
   _____37%
   _____35%
   _____33.8%
   _____None of the above, but the correct answer is _____

7. If reductions decreased by $1,000 in August, what would the BOM stock-to-sales ratio be for August?
   _____2.2
   _____2.9
   _____2.4
   _____None of the above, but the correct answer is _____

8. If sales decreased by $8,000 in December, what would the BOM stock-to-sales ratio be for December?
   _____$20,600
   _____$12,600
   _____$4,600
   _____None of the above, but the correct answer is _____

POSTTEST
UNIT AND DOLLAR CONTROL

PART I:

DIRECTIONS: Use the given data as a basis for answering the questions presented below:

A local retailer wants to hold the firm's inventory to a monthly stock-to-sales ratio of 3.5. Estimated sales are as follows:

MONTH	SALES
July	$24,000
August	28,500
September	23,200
October	21,100
November	27,200
December	30,150

How much inventory should the firm have on hand on the following dates?

July 1 _____ October 1 _____

August 1 _____ December 1 _____

September 1 _____

PART II:

DIRECTIONS: Use the given data to determine the dollar amount of merchandise needed for each style. Assume that a stock-to-sales ratio of 2.5 is planned. Write the dollar amount of the merchandise needed in the spaces provided.

STYLE	LY ACTUAL	TY PLANNED	ON-ORDER	ON-HAND
1	$ 3,000	$ 3,300	$ 1,500	$ 5,775
2	4,500	4,950	2,800	9,250
3	3,200	3,520	1,300	6,600
4	3,800	4,180	2,500	7,315
5	4,000	4,400	2,400	8,250
	18,500	20,350	10,500	37,190

STYLE 1 _____ STYLE 4 _____

STYLE 2 _____ STYLE 5 _____

STYLE 3 _____

PART III:

DIRECTIONS: Use the given data as a basis for answering the questions. Answer the questions by placing a style number(s) in the blank to the left of the question.

	----PERIOD 1----		----PERIOD 2----		----PERIOD 3----		----PERIOD 4----	
STYLE	Planned Sales	/ Actual Sales	Planned Sales	/ Actual Sales	Planned Sales	/ Actual Sales	Planned Sales	/ Actual Sales
1	$1,100	$ 900	$1,400	$1,000	$1,500	$1,300	$1,800	$2,100
2	2,300	2,200	2,500	2,100	2,400	2,300	2,200	1,800
3	3,300	4,100	3,200	3,000	3,300	3,500	3,100	2,900
4	2,100	2,000	2,200	2,500	2,600	2,800	2,500	2,350
5	1,900	1,500	1,900	1,800	1,600	1,400	1,600	1,500

_____Which style is the best seller in relation to its planned sales?

_____Which style is the slowest seller in relation to its planned sales?

_____Which style(s) is performing better than expected?

_____Which style(s) is performing worse than expected?

_____The store management requires that styles be marked down if actual sales are less than 85% of the planned sales. Given this criteria, which style(s) in Period 4 should be marked down?

Answer the following question by writing Yes or No in the blank provided.

_____Considering all styles, did the department meet its planned sales goal for the four months presented?

PART IV:

DIRECTIONS: Study the sales and stock figures presented. Use the data to answer the following questions:

FEBRUARY - STOCK AND SALES RESULTS

STYLE	-- BOM Stock -- Units	/ Dollars	---- Sales ---- Units	/ Dollars	-- EOM Stock -- Units	/ Dollars	---On-Order--- Units	/ Dollars
1	65	$2,600	17	$ 680	48	$1,920	15	$ 600
2	71	2,840	25	1,000	46	1,840	16	640
3	33	1,320	9	360	24	960	6	240
	169	6,760	51	2,040	118	4,720	37	1,480

MARCH PLANNED SALES

STYLE	---- SALES ---- Units	/ Dollars
1	21	$ 840
2	31	1,240
3	12	480

ASSUMPTIONS: 1) Merchandise on-order in February will be received in March.
2) The store management insists on a stock-to-sales ratio of 2.5.
3) Assume a retail price of $40.00.

1. If March sales for style 3 are 20% above the planned level, style 3 will be:
_____adequately stocked
_____under-stocked
_____over-stocked

2. If March sales for style 1 are 10% below the planned level, style 1 will be:
_____adequately stocked
_____under-stocked
_____over-stocked

3. Assume that every 5% reduction in price increases unit sales by 10%. If the price for style 1 is reduced by 10%, style 1 will be:
_____adequately stocked
_____under-stocked
_____over-stocked

4. If March sales occur as planned, style 2 will be:
_____adequately stocked
_____under-stocked
_____over-stocked

5. If the February on-order dollar figure for style 2 was reduced by $200, what would the BOM stock figure for style 2 be in March? _____

PART V:

DIRECTIONS: Use the given data as a basis for answering the following questions.

Planned Sales	$ 20,000
+ Markdowns	3,000
+ Planned EOM	91,200
= Merchandise Needed	114,200
- Merchandise Available	60,000
= Planned Purchases	54,200
- On-Order	43,360
= Open-to-Buy	10,840

1. Forecasters are predicting a decrease in retail sales for the upcoming month. The management of the store you work for expects sales to drop by 20%. You have used the projected open-to-buy dollars in your department to purchase a new line of clutch purses. You purchased 5 dozen purses at a retail price of $40.00 each. If sales decrease by 20%, will your planned open-to-buy dollars cover this purchase?

   _____Yes _____No

   If YES, what would the open-to-buy be after the purchase?
   If NO, how much would the open-to-buy need to increase to cover the purchase? _____

2. Management insists that you order 4 dozen ski sweaters which retail at $50.00 each. According to the original data, is the open-to-buy figure large enough to cover the purchase?

   _____Yes _____No

   If YES, what would the open-to-buy be after the purchase? _____
   If NO, how much would the open-to-buy need to increase to cover the purchase? _____

3. Management insists that you order 50 classic blazers which sell for $75.00 each at retail. However, your merchandise available increased by 5%. According to the original data, is the open-to-buy figure large enough to cover this purchase?

   _____Yes _____No

   If YES, what would the open-to-buy be after the purchase? _____
   If NO, how much would the open-to-buy need to increase to cover the purchase? _____

4. An analysis of the stock and sales results for the past month shows that additional merchandise is needed in the amount of $13,000. According to the original data, is the open-to-buy figure large enough to cover this order?

   _____Yes _____No

   If YES, what would the open-to-buy be after the purchase? _____
   If NO, how much would the open-to-buy need to increase to cover the purchase? _____

APPENDIX K

CASE STUDIES FOR THE TWO EXPERIMENTS

RETAIL CASE STUDY

SIX-MONTH PLANNING

SIX-MONTH PLANNING - CASE STUDY

Southern Originals is a women's specialty shop located in a shopping mall in Tuscaloosa, Alabama. Southern Originals has been the focal point for summer apparel purchases by many residents since it was opened in 1969. During the Spring-Summer season Southern Originals carries a wide assortment of swimwear and sun dresses in addition to its usual lines. These always draw customers from throughout the area.

Yet these two product categories have the buyer worried. The buyer knows that the Spring-Summer profit often depends on how well swimwear and sun dresses sell. So much depends on the ability to forecast sales correctly.

Over the preceding ten years, Southern Originals sales volume increased at an average annual rate of 5 percent, and last year total sales reached the $300,000 mark. Over 50 percent of the yearly sales were realized in the Spring-Summer season and 60 percent of that figure came from swimwear and sun dresses.

Assume that you are the buyer for Southern Originals and that you have completed your six month plan for the Spring-Summer season. The owner of the store decides to increase the sales forecast for the season and to reconsider the current stock-to-sales ratios and reduction figures. A memo detailing the projected sales increase, the stock-to-sales ratios, and the estimated reduction percentages is attached (see following page). You must change your plan to meet the expectations of the owner. The owner would also like for you to be prepared to explain the probable effect of increases or decreases in the planned figures. USE THE BLANK FORM ON THE FOLLOWING PAGE TO RECORD YOUR UPDATED PLAN.

MEMO:

TO: Buyer, Southern Originals

FROM: B. Allen, Owner Southern Originals

RE: Spring-Summer Six-Month Plan

Since sales have been increasing at an annual rate of 5 percent I believe that Southern Originals can achieve a sales increase of 7 percent over last year's sales. Therefore, your plans for the six month season must be changed to compensate for the sales increase.

I also believe that reductions could be cut by 2 percent. This change should also be reflected in your plan.

Stock-to-sales ratios also need to be reconsidered. Please use the ratios that I have listed below. I have also listed the sales percentages and reduction percentages for each month. Please use these figures to update your plan.

Be prepared to explain the probable effect of increases or decreases in the planned figures. For example, if we do not meet our sales goal in August, what effect will that have on our planned purchases?

B. Allen

* *

LAST YEAR'S SALES TOTAL - $300,000 LAST YEAR'S REDUCTIONS - 20%
LY SPRING-SUMMER SALES - $165,000 OR 55% of the ANNUAL SALES
TURNOVER - 2.5 INITIAL MARKUP = 47%

	SALES % BY MO.	RED. % BY MO.	BOM STOCK-TO-SALES RATIOS
FEB.	10%	10.5%	2.5
MARCH	14%	13.5%	3.0
APRIL	15.5%	15.5%	3.0
MAY	19.5%	18.5%	3.5
JUNE	23%	20%	3.0
JULY	18%	22%	2.5

	FEB.	MARCH	APRIL	MAY	JUNE	JULY
SALES						
EOM						
RED						
BOM						
PURCH						
GM%						

RETAIL CASE STUDY

UNIT AND DOLLAR CONTROL

John and Carol Ann Dunn operate Sportique, a fashionable, high quality sports apparel shop in Jackson, Mississippi. They have been operating the shop for seven years and have a strong base of loyal customers.

As with most apparel stores, Sportique's Christmas season is the most profitable. Sportique is two months into the fall selling season. The Dunns' want to review the current stock for fill-ins and inventory building for the upcoming Christmas season. John feels that a careful analysis of last year's holiday sales is needed to determine the past year's best selling items. He feels that the analysis might reveal information helpful in monitoring item, style, color, and size assortments during the upcoming season. The bulk of the Christmas buying has been done, but fill-in merchandise can still be obtained.

The analysis of last year's holiday sales revealed that men's and women's warm-up suits were the best selling items. John decided to carefully monitor the sales and stock levels for these items to ensure that a balanced assortment would be available throughout the holiday season.

John has asked YOU to assist him in monitoring the sales and stock levels for men's and women's warm-up suits. The following information is available to help you with this task:

1) Last year's sales results for men's and women's warm-up suits
2) This year's six-month plan for men's and women's warm-up suits
3) Actual sales and stock results for August and September
4) Planned merchandise on-hand and on-order reports
5) Projected open-to-buy figures for the remaining months in the season
6) Percentage breakdown of sales by size and color

Specifically, you have been asked to present a plan for maintaining the stock and sales balance for the upcoming season. This plan may involve increasing or decreasing the on-order dollars for an item or lowering the price of an item to stimulate sales. The plan is up to you. Use the given information as a basis for your plan.

WOMEN'S WARM-UP SUITS

LAST YEAR'S SALES BY MONTH

August	$2,403
September	2,804
October	3,404
November	3,594
December	4,258
January	3,204

WOMEN'S WARM-UP SUITS

THIS YEAR'S SIX MONTH PLAN

	AUG	SEPT	OCT	NOV	DEC	JAN
SALES	$ 2,670	$ 3,115	$ 3,782	$ 4,228	$ 4,895	$ 3,560
EOM	8,722	11,348	12,683	13,706	7,120	7,417
REDUC.	334	222	223	222	445	779
BOM	6,675	8,722	11,348	12,683	12,238	7,120
PURCH	5,051	5,963	5,340	5,473	222	4,636

WOMEN'S WARM-UP SUITS

ACTUAL SALES AND STOCK RESULTS

		------ A U G U S T ---------			--- S E P T E M B E R ------		
SIZE	COLOR	EOM STOCK $	UNITS	SALES $	EOM STOCK $	UNITS	SALES $
S	1	$ 862	6	$ 330	$1,006	7	$ 385
M	1	1,307	10	550	1,525	11	605
L	1	444	3	165	519	3	165
TOTAL		2,613	19	1,045	3,050	21	1,155
S	2	986	7	385	1,150	8	440
M	2	1,493	11	605	1,743	12	660
L	2	508	4	220	593	4	220
TOTAL		2,987	21	1,155	3,486	24	1,320
S	3	616	4	220	719	5	275
M	3	934	7	385	1,090	7	385
L	3	317	2	110	370	3	165
TOTAL		1,867	13	715	2,179	15	825
GRAND TOTAL		7,467	53	2,915	8,715	60	3,300

WOMEN'S WARM-UP SUITS

PLANNED MERCHANDISE ON-HAND AND ON-ORDER REPORT

		----OCTOBER----		----NOVEMBER----		----DECEMBER----		----JANUARY----	
SIZE	COLOR	ON-HAND	ON-ORDER	ON-HAND	ON-ORDER	ON-HAND	ON-ORDER	ON-HAND	ON-ORDER
S	1	$1,311	$ 493	$1,465	$ 525	$1,413	$ 27	$ 822	$ 471
M	1	1,986	748	2,219	795	2,142	27	1,246	714
L	1	675	254	755	270	728	24	424	243
		3,972	1,495	4,439	1,590	4,283	78	2,492	1,428
S	2	1,498	564	1,674	599	1,615	27	940	539
M	2	2,269	855	2,537	909	2,448	35	1,424	816
L	2	772	290	862	309	832	27	484	277
		4,539	1,709	5,073	1,817	4,895	89	2,848	1,632
S	3	936	352	1,046	375	1,010	27	587	337
M	3	1,419	534	1,586	568	1,530	28	890	510
L	3	482	182	539	193	520	0	303	173
		2,837	1,068	3,171	1,136	3,060	55	1,780	1,020

WOMEN'S WARM-UP SUITS

PLANNED OPEN-TO-BUY

		OCTOBER	NOVEMBER	DECEMBER	JANUARY
	PLANNED SALES	$ 3,782	$ 4,228	$ 4,895	$ 3,560
+	MARKDOWNS	223	222	445	779
+	PLANNED EOM	12,683	13,706	7,120	7,417
=	MERCH NEEDED	16,688	18,156	12,460	11,756
-	PLANNED BOM	11,348	12,683	12,238	7,120
=	PLANNED PURCH	5,340	5,473	222	4,636
-	ON-ORDER	4,272	4,543	222	4,080
=	OPEN-TO-BUY	1,068	930	0	556

MEN'S WARM-UP SUITS

LAST YEAR'S SALES BY MONTH

Aug	$ 2,700
Sept	3,115
Oct	3,825
Nov	4,038
Dec	4,785
Jan	3,600

MEN'S WARM-UP SUITS

THIS YEAR'S SIX MONTH PLAN

	AUG	SEPT	OCT	NOV	DEC	JAN
SALES	$ 3,000	$ 3,500	$ 4,250	$ 4,750	$ 5,500	$ 4,000
EOM	9,800	12,750	14,250	13,750	8,000	8,333
REDUC.	375	250	250	250	500	875
BOM	7,500	9,800	12,750	14,250	13,750	8,000
PURCH	5,675	6,700	6,000	4,500	250	5,208

MEN'S WARM-UP SUITS

ACTUAL SALES AND STOCK RESULTS

		------ A U G U S T ------			--- S E P T E M B E R ---		
SIZE	COLOR	EOM STOCK $	UNITS	SALES $	EOM STOCK $	UNITS	SALES $
S	1	$ 502	3	$ 195	$ 626	3	$ 195
M	1	2,511	11	715	3,130	12	780
L	1	2,009	8	520	2,503	9	585
Total		5,022	22	1,430	6,259	24	1,560
S	2	411	2	130	512	2	130
M	2	2,054	8	520	2,561	10	650
L	2	1,643	7	455	2,048	8	520
Total		4,108	17	1,105	5,121	20	1,300
Grand Total		9,130	39	2,535	11,380	44	2,860

MEN'S WARM-UP SUITS

PLANNED MERCHANDISE ON-HAND AND ON-ORDER REPORT

		---- OCTOBER ----		--- NOVEMBER ---		--- DECEMBER ---		---- JANUARY ----	
SIZE	COLOR	ON-HAND	ON-ORDER	ON-HAND	ON-ORDER	ON-HAND	ON-ORDER	ON-HAND	ON-ORDER
S	1	$ 701	$ 264	$ 784	$ 198	$ 756	$ 14	$ 440	$ 252
M	1	3,507	1,320	3,919	990	3,781	68	2,200	1,261
L	1	2,805	1,056	3,135	792	3,025	55	1,760	1,008
		7,013	2,640	7,838	1,980	7,562	137	4,400	2,521
S	2	574	216	641	162	619	11	360	206
M	2	2,868	1,080	3,206	810	3,094	57	1,800	1,031
L	2	2,295	864	2,565	648	2,475	45	1,440	825
		5,737	4,800	6,412	1,620	6,188	113	3,600	2,062

MEN'S WARM-UP SUITS

PLANNED OPEN-TO-BUY

	OCTOBER	NOVEMBER	DECEMBER	JANUARY
PLANNED SALES	$ 4,250	$ 4,750	$ 5,500	$ 4,000
MARKDOWNS	250	250	500	875
PLANNED EOM	14,250	13,750	8,000	8,333
MERCH NEEDED	18,750	18,750	14,000	13,208
PLANNED BOM	12,750	14,250	13,750	8,000
PLANNED PURCH	6,000	4,500	250	5,208
ON-ORDER	4,800	3,600	250	4,583
OPEN-TO-BUY	1,200	900	0	625

PERCENTAGE BREAKDOWN OF SALES BY SIZE AND COLOR

Based on the sales results from previous years, the projected breakdown of sales by size and color for men's and women's warm-up suits is as follows:

Women's Warm-Up Suits

SIZE	COLOR
S = 33%	1 = pink = 40%
M = 50%	2 = yellow = 35%
L = 17%	3 = navy = 25%

Men's Warm-Up Suits

SIZE	COLOR
S = 10%	1 = navy = 55%
M = 50%	2 = maroon = 45%
L = 40%	

The price structure for men's and women's warm-up suits is as follows:

	COST	RETAIL
Women's warm-up suits	$27.50	$55.00
Men's warm-up suits	$32.50	$65.00

APPENDIX L

COMPARISON OF COMPOSITE SCORES FOR EACH OF THE SEVEN ATTITUDE CATEGORIES IN THE SIX-MONTH PLANNING EXPERIMENT

TABLE XXIII

COMPARISON OF COMPOSITE SCORES FOR EACH OF THE SEVEN ATTITUDE CATEGORIES IN THE SIX-MONTH PLANNING EXPERIMENT

	Course				Teaching Method			
Item	CTM Mean (N=27)	MKTG Mean (N=46)	F Value	Level of Significance	Study Mean (N=36)	Computer Simulation Mean (N=37)	F Value	Level of Significance
Motivation and Interest	2.8	3.0	1.28	NS	2.9	2.9	0.21	NS
Perceived Learning	3.4	3.4	0.09	NS	3.6	3.2	4.85	.05
Changes in the Character of Later Course Work	3.0	2.9	0.01	NS	3.0	2.9	0.05	NS
Affective Learning Regarding the Subject Matter	3.0	3.2	1.69	NS	3.3	3.0	2.86	.10
Affective Learning in General	2.8	2.7	0.08	NS	2.9	2.6	1.75	NS
Changes in Classroom Structure and Relations	2.6	2.8	1.57	NS	2.8	2.6	1.92	NS
Enjoyment	3.5	3.0	8.75	.01	3.2	3.2	0.20	NS

APPENDIX M

COMPARISON OF COMPOSITE SCORES FOR EACH OF THE SEVEN ATTITUDE CATEGORIES IN THE UNIT AND DOLLAR CONTROL EXPERIMENT

TABLE XXIV

COMPARISON OF COMPOSITE SCORES FOR EACH OF THE SEVEN ATTITUDE CATEGORIES IN THE UNIT AND DOLLAR CONTROL EXPERIMENT

	Course				Teaching Method			
Item	CTM Mean (N=26)	MKTG Mean (N=24)	F Value	Level of Significance	Case Study Mean (N=25)	Computer Simulation Mean (N=25)	F Value	Level of Significance
Motivation and Interest	2.9	2.6	1.24	NS	2.8	2.7	0.21	NS
Perceived Learning	2.8	2.8	0.02	NS	2.8	2.8	0.00	NS
Changes in the Character of Later Course Work	2.8	2.9	0.16	NS	2.9	2.8	0.12	NS
Affective Learning Regarding the Subject Matter	3.4	3.3	0.03	NS	3.3	3.5	0.68	NS
Affective Learning in General	2.7	2.6	0.14	NS	2.6	2.7	0.07	NS
Changes in Classroom Structure and Relations	2.6	2.5	0.17	NS	2.5	2.6	0.16	NS
Enjoyment	2.8	2.6	0.65	NS	2.7	2.8	0.37	NS

APPENDIX N

MEAN VALUES OF THE INDIVIDUAL ITEMS AND THE COMPOSITE SCORES IN EACH ATTITUDE CATEGORY FOR THE TWO EXPERIMENTS

TABLE XXV

MEAN VALUES OF THE INDIVIDUAL ITEMS AND THE COMPOSITE SCORES IN EACH ATTITUDE CATEGORY FOR THE TWO EXPERIMENTS

Item	Case Study		Computer Simulation	
	Six-Month Planning (N=36)	Unit and Dollar Control (N=25)	Six-Month Planning (N=37)	Unit and Dollar Control (N=25)
MOTIVATION AND INTEREST				
The exercise:				
1. was interesting	3.2	2.8	3.0	3.0
2. was involving	3.4	3.7	3.4	3.6
3. increased my interest in the topic	3.0	2.8	3.0	2.8
4. increased my interest in the course	2.8	2.7	2.8	2.4
5. increased my interest in learning	2.8	2.8	2.9	2.5
6. increased my enthusiasm to learn	2.8	2.5	2.7	2.4
7. increased my commitment to learn	2.7	2.6	2.4	2.3
8. composite	2.9	2.8	2.9	2.7
PERCEIVED LEARNING				
1. gained decision-making skills	2.7	2.6	2.7	2.5
2. helped learn "winning strategies"	2.6	2.6	2.7	2.4
3. gained actual information	3.5	2.9	2.8	2.6
4. learned the procedures	3.6	2.7	2.7	3.2
5. learned general principles involved	3.7	2.9	2.8	3.3
6. helped understand structure of "real world"	2.7	3.1	2.6	2.9
7. helped identify elements in six-month planning	3.6	2.9	3.1	3.2
8. learned systematic and analytical approach	3.0	2.6	2.7	2.5
9. composite	3.6	2.8	3.2	2.8
CHANGES IN THE CHARACTER OF LATER COURSE WORK				
I believe the exercise will:				
1. make other work in the course more meaningful	2.9	2.6	2.8	2.6
2. lead me to asking better questions	3.0	3.2	3.0	2.9
3. lead me to participate more in a class discussion on this topic	3.0	2.8	3.0	2.8
4. composite	3.0	2.9	2.9	2.8
AFFECTIVE LEARNING REGARDING THE SUBJECT MATTER				
1. changed perspective on some part of retailing	3.0	3.1	3.2	3.0
2. increased appreciation for those problems involved in six-month planning	3.4	3.0	2.8	3.2

TABLE XXV (Continued)

Item	Case Study: Six-Month Planning (N=36)	Case Study: Unit and Dollar Control (N=25)	Computer Simulation: Six-Month Planning (N=37)	Computer Simulation: Unit and Dollar Control (N=25)
3. increased insight into the ways in which people who make retail store decisions see the world	3.2	3.3	2.8	3.2
4. gave insight into the pressures faced by those making six-month planning decisions	3.3	3.4	3.0	3.9
5. increased awareness of the uncertainties faced by those involved in six-month planning decisions	3.3	3.4	3.0	3.8
6. increased awareness of the difficulties in general of those involved with six-month planning	3.3	3.4	3.1	3.5
7. composite	3.3	3.3	3.0	3.5
AFFECTIVE LEARNING IN GENERAL				
The exercise:				
1. helped me to increase my own self-awareness	2.7	2.6	2.7	2.7
2. increased my sense of my personal abilities	2.9	2.7	2.6	2.5
3. increased my awareness of my own potential	3.1	2.6	2.6	2.8
4. composite	2.9	2.6	2.6	2.7
CHANGE IN CLASSROOM STRUCTURE AND RELATIONS				
Exercises such as this one:				
1. lead students to be more independent, thus changing student-teacher relationships	3.3	2.8	2.7	2.7
2. help students perceive teachers in a more positive light	2.7	2.3	2.5	2.6
3. provide a relaxed, natural exchange between students and teachers	2.9	2.3	2.6	2.6
4. reduce the necessity of the teacher to judge learning	2.5	2.4	2.6	2.4
5. lead teachers to perceiving students more positively in general	2.8	2.4	2.5	2.5
6. promotes better student-teacher relationships	2.7	2.4	2.4	2.5
7. provides greater freedom for students to explore ideas	3.1	3.2	2.1	3.0
8. composite	2.8	2.5	2.6	2.6

TABLE XXV (Continued)

Item	Case Study: Six-Month Planning (N=36)	Case Study: Unit and Dollar Control (N=25)	Computer Simulation: Six-Month Planning (N=37)	Computer Simulation: Unit and Dollar Control (N=25)
ENJOYMENT				
The exercise:				
1. was enjoyable	2.8	2.4	3.0	2.4
2. was fun	2.7	2.4	2.9	2.7
3. made me feel uncomfortable	3.1	2.6	2.3	2.6
4. took too long	3.5	2.6	3.1	2.3
5. was boring	3.2	2.5	3.4	3.0
6. was too low-level	3.5	3.6	3.5	3.5
7. was too unstructured	3.3	2.4	3.5	2.8
8. composite	3.2	2.7	3.2	2.8

VITA

Laura Dunn Jolly

Candidate for the Degree of

Doctor of Philosophy

Thesis: DEVELOPMENT AND EVALUATION OF COMPUTER SIMULATIONS FOR TEACHING RETAIL MANAGEMENT CONCEPTS

Major Field: Home Economics-Clothing, Textiles and Merchandising

Biographical:

Personal Data: Born in Belzoni, Mississippi, December 25, 1955, the daughter of Mary Katherine and Monroe Dunn; married David William Jolly in 1981.

Education: Graduated from Humphreys Academy, Belzoni, Mississippi, in May, 1973; received the Associate of Arts degree from Mississippi Delta Junior College, Moorhead, Mississippi, in May, 1975; received the Bachelor of Science degree in Vocational Home Economics Education from the University of Mississippi, Oxford, Mississippi, in 1977; received the Master of Science degree in Clothing, Textiles and Merchandising from Oklahoma State University in 1979; completed the requirements for the Doctor of Philosophy degree at Oklahoma State University, July, 1983.

Professional Experience: Graduate teaching assistant, Clothing, Textiles and Merchandising Department, Oklahoma State University, 1978-79; Instructor, Clothing and Textiles Department, Texas Tech University, 1979-80; graduate teaching associate, Clothing, Textiles and Merchandising Department, Oklahoma State University, 1980-83.

Professional Organizations: American Home Economics Association; Oklahoma Home Economics Association; Association of College Professors of Textiles and Clothing; Kappa Omicron Phi; Omicron Nu; Phi Upsilon Omicron; Phi Kappa Phi.