A STUDY OF TUNNEL VISION AND ROTATION
AS ASPECTS OF WEB SITE VISIBILITY

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A STUDY OF TUNNEL VISION AND ROTATION
AS ASPECTS OF WEB SITE VISIBILITY

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Due to the important role the Internet is playing in today's world, it is essential to understand the different aspects of Web sites and visibility concerns. The tunnel vision phenomenon, which occurs when Web site users get familiar with the content and layout of frequently visited Web sites is one of the main visibility concerns facing information delivery and knowledge exchange through Web sites. Studying the evolution of this phenomenon, and the different techniques used to avoid it, is essential in finding ways to enhance Web site visibility.

Applying rotation to Web sites' components as a technique to enhance visibility was the focus of this study. In order to study the different aspects and impact of rotation, an experiment was designed using a Web site. A survey that asked Internet users about different surfing habits and Web sites browsing preferences was conducted in order to help study the different aspects of Web sites visibility. A number of techniques and languages were used in building the experiment's Web site and the survey: HTML, DHTML, JavaScript, PHP, and MySQL. Macromedia Dreamweaver MX and Fireworks MX studio were used to compose, edit, and publish the different pages and graphics of the Web site and the survey.

The notion of rotation can be applied to a Web site's components to enhance the visibility of information published on that Web site. In order to satisfy the requirement of enhancing Web site visibility, a number of rotation aspects and factors have to be carefully determined. Some factors and aspects such as the frequency of rotation can be
concluded from the results of the survey conducted in this study, most Internet users want to have access to the latest and up-to-date information but they do not prefer frequent and dramatic changes. Other factors and aspects include: Web site parts, areas, and components to be rotated, the angles and directions of Web site component rotations, the distance or displacement of rotation, and the effect of rotation on customization and personalization of a Web site.
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CHAPTER I

INTRODUCTION

The communication revolution and technology advancements in the last decade have created endless opportunities for businesses and other agencies to reach out to the world through a tremendous number of new tools and features. One of these new opportunities and features is publishing a Web site, which in effect opens a window and starts a communication channel with the Internet users anywhere in the world. Internet Web sites have added a new chapter to the humanity's long experience in knowledge exchange and information delivery.

One of the many differences between traditional and electronic publication is changeability. Traditional paper publications are static; once published, it is hard to make changes to them or update them especially after being released to end users. With electronic publications and Web pages, the situation is quite different; changes and updates can be made easily. This dynamic nature of electronic publications and Web sites adds more opportunities for communication with the clients and Web site visitors, it also allows publishers to introduce and include more services and information in their Web sites [Henke 2001].

In the last few years, Web sites have become one of the most, if not the most important means of information delivery and advertisement for a verity of services and
products provided by different firms and organizations. It is unlikely nowadays to find an organization or a firm, regardless of its size or number of employees, without a Web site. Web sites serve as windows to the world of customers, students, investors, or even ordinary Internet users [Dhyani et al. 2002]. However, some Web sites may disappear or be removed. As a result, traditional publications are more reliable than Web sites.

One of the main concerns facing the Internet is information visibility within a Web site. A number of techniques have been utilized to enhance visibility and to encourage the Web site visitors to learn more about the new information or services advertised in a Web site. Banners and flashing ads, pop up windows, and spam or unsolicited emails are some of these techniques that users often see when visiting Web sites, or are sent afterwards. The wide use of these techniques has the basic goal of enhancing Web site visibility and overcoming a well-known challenge facing visibility, namely tunnel vision [Norman 2002]. Tunnel vision is the case when a Web site’s user visits it a few times and gets used to its layout and becomes familiar with its contents. In such situations, users know where to go and where to look to obtain the information or features they want. As a result, users start focusing only on certain parts and areas. This familiarity can lead to ignoring other parts of the Web site they are using [Norman 2002].

Tunnel vision causes the users to focus on certain parts and areas of a Web site to the exclusion of others. It reduces the visibility of information published in other areas within a Web site. This visibility reduction limits the dynamic nature of a Web site which is supposed to allow the publishers to update and introduce new features and services to visitors.
In order to study the different aspects and impact of rotation, an experiment was implemented using a Web site to study the different aspects of rotation through a number of examples of rotation. A survey was conducted to help study the different aspects of Web sites visibility.

The rest of this thesis report is organized as follows. Web site visibility concerns as well as Web site design, conventional advertisement, and updating Web site content and layout are discussed in Chapter II. In Chapter III, tunnel vision and the different techniques used to avoid it are discussed. Chapter IV describes rotation and its different aspects. Chapter V discusses the experimental design including the Web site and survey designs. The results and analysis are described in Chapter VI, while Summary and future work are discussed in Chapter VII.
CHAPTER II

WEB SITES AND VISIBILITY CONCERNS

This chapter briefly covers four topics related to Web sites visibility. The first section describes visiting Web sites in general. In the second section, Web site design is discussed. In the third section, conventional advertisement vs. Web site advertisement is discussed. The last section discusses updating Web site content and layout.

2.1 Visiting a Web Site

A Web site can be defined as a collection of information presented to viewers in certain ways. The representation tools and components form the Web site layout, while the information and services being represented form the Web site content.

One of the main objectives of a Web site is to announce and make different types of information available to users. Users visiting a Web site are probably interested in retrieving certain specific information, of course some users visit Web sites not for a specific purpose but to learn more about something. In general, users are more interested in certain Web sites, and also in certain kinds of information within each Web site.
2.2 Web Site Design

When a Web site designer starts the process of looking for ideas and tools for designing a Web site, first, (s)he should study the functionalities and services that are to be provided by that Web site. This strategy is a common approach in many other disciplines in order to find a “marriage” or a good match between functionality and design [Alexander 1968].

Designing a Web site should not only focus on functionality, but it also should take into consideration human-computer interaction. Web site layout is a very important aspect of Web site design. Today’s technologies in Web site design are not limited to text, fixed figures, and pictures. Animation, video clips, and audio files are becoming more important and available in Web sites as better tools of presentation contribute to the enhancement of human-computer interaction [Dix et al. 1998].

2.3 Conventional Advertisement and Web Sites

In conventional advertisement on the television or radio, commercials are played in and between programs. The main purpose is to let the viewers and listeners know about products and services those commercials are trying to sell. Viewers and listeners, for the sake of continuity and in order to follow up with the original program being broadcast, stay tuned waiting for those commercials to end so they can go back to what they originally wanted to watch or hear. In general (barring channel surfing, using commercial blocking devices, etc.), TV viewers and radio listeners have no choice but to
watch or hear these commercials if they want to continue with a program or a movie. In Web sites, the situation is different because the users are in control of what they want to look at. Users choose what sites to visit and which corners and areas within a Web site to look at.

The many interruptions in TV and radio by commercials are not necessarily suitable for Web sites. In Web sites, it is primarily the users who look for information rather than information being brought to the attention of the users. Users typically visit a Web site looking for products or services. In many cases, users have something in mind when visiting a Web site. Once at a Web site, they start looking through the content of that Web site searching for what they originally intended to learn more about. Users move among Web sites or within a Web site freely with minimal control as far as the Web site publishers are concerned. Of course, it can be argued that conventional advertisements in magazines and newspapers have a situation similar to Web sites in that readers have more control in what to look at and where to look.

2.4 Updating Web Site Content and Layout

Due to the dynamic nature of Web sites, updates and changes take place from time to time. Some of these changes are minor while other changes to both content and layout are major.

Although viewers typically like to have access to the latest and the most recently updated information, some of them may not like dramatic and frequent changes to the Web sites they visit. Simply stated, after getting used to a Web site layout, some users do
not generally welcome spending more time and effort understanding a new layout. Major and dramatic changes to Web sites are not well-received by many users who are used to the layouts of certain Web sites, and are hence able to access the information they need quickly. The reason is that they want to avoid searching for and locating the information in the new Web site design.
CHAPTER III

EVOLUTION OF TUNNEL VISION

This chapter focuses on the phenomenon of tunnel vision. In the first section, tunnel vision is defined and its evolution is explained. In the second section, some techniques that are used to avoid this phenomenon are mentioned.

3.1 Tunnel Vision

After visiting a Web site several times, users get familiar with the layout and content of that particular Web site. It can be assumed that a human mind constructs a conceptual layout or road map that it uses to reach certain information on a familiar Web site. This familiarity can lead to a known phenomenon called “Tunnel Vision” [Norman 2002]. Tunnel vision is the phenomenon that occurs when users start to look at or focus on particular areas of a Web site and ignore or not pay attention to the other areas.

The phenomenon of tunnel vision virtually makes the components displayed on a Web site either “visible” or “invisible”. Of course, all of the components are physically visible for the human eye. However, under tunnel vision, only the areas that a frequent user is familiar with and where (s)he expects to find what (s)he is looking for are focused
on, while other areas or components, which the user does not think are as important or which (s)he is not interested in, become unnoticeable.

### 3.2 Techniques Used to Avoid Tunnel Vision in Web Sites

A number of techniques are used in order to call a user’s attention to the features and information that the user may not be aware of. These techniques include: a “Tip of the day” window that usually pops up when starting an application, pop up windows, banners, flashing ads, and spam emails [Hyman 2003]. Despite the widespread use of these techniques, many Internet users do not appreciate them. Actually, most users do not have a positive feeling towards them. Most users close these windows promptly and even choose to turn off the tip of the day feature. Many Internet users close the pop-up windows even before they finish loading. Most users do not look at banners and they do not pay attention to the flashing ads [Morrissey 2002]. Many email service providers allow users to delete junk mail automatically and even before reading them. Recently some anti-spamming proposed regulations have been discussed in the United States Congress to forbid sending spam and unsolicited emails. If such law were adopted, companies can no longer depend on spam or unsolicited email as a way of advertisement [Morrissey 2003].
CHAPTER IV

ROTATION

This chapter discusses the concept of rotation. Rotation is defined in the first section, this section also explains how rotation may help enhance Web site visibility. In the second section, some aspects and factors of rotation are mentioned.

4.1 Rotation

Rotation can be defined as making slight changes in the positions of some parts and components of a Web site, which users most look at or are most interested in, for the purpose of keeping the users' conscious attention, fighting eye fatigue and boredom, and allowing the users to find new information in unexpected places.

Rotating Web site components forces the users to look at new information because of counter-acting the tunnel vision phenomenon discussed earlier (see Chapter III). Frequent Web site visitors, who are typically used to looking at the same parts or areas within a Web site, as a result of rotation will take a few seconds trying to locate the information they are looking for. During this time, the users are potentially reading and learning about other things published on that Web site, as reported in the rest of this Chapter.
In this thesis work, the problem of tunnel vision was studied and enhancing Web site visibility by rotating some of the Web site components was investigated.

4.2 Aspects and Factors of Rotation

Rotating the components of a Web site has many aspects and factors, these aspects and factors determine and identify how rotation can be used in a Web site to achieve the goal of enhancing Web site visibility.

An important consideration about rotation is that it should not be dramatic, it should be smooth and cause only slight changes to the Web site layout so that the users do not have to spend more than a few seconds trying to find the information they originally intended to locate. In other words, rotation should not lead to alienating the frequent users. Various rotation aspects and factors that must be considered include: determining the Web site parts, areas, and components to rotate, angles and directions of Web site component rotation, frequency of rotation, distance or displacement of rotation, and the effect of rotation on customization and personalization of a Web site.
CHAPTER V

EXPERIMENT DESIGN

This chapter describes the overall design of the experiment. The first section discusses the experimental design and justifies choosing the one-shot design for this experiment. In the second section, the design of the Web site (containing the survey and used for data collection and manipulation) is discussed. The last section discusses the design of the survey.

5.1 Experimental Design

Modeled after the pre-experimental design paradigm [Conte et al. 1986], this thesis work involved investigating the acceptability of the assertion that Web site visibility can be enhanced by using rotation to mitigate or alleviate the tunnel vision phenomenon involved in frequently-visited Web sites. A survey was conducted to collect data in order to evaluate the assumption.

The “one-shot case study model” [Conte et al. 1986] was used to examine rotation and other visibility enhancement techniques used in Web sites. The survey also contained questions about how Internet users participating in the study would react and feel about applying rotation to Web sites.
The purpose of a one-shot pre-experimental design, such as the one conducted in this work, is to gain confidence in the treatment, which is to enhance Web site visibility using rotation to address the tunnel vision phenomenon. A goal of a pre-experimental design is to provide useful data that can be used in the planning of a "true experiment" [Conte et al. 1986].

5.2 Web Site Design

A Web site was constructed to study the different aspects and effects of rotation on Web sites. The Web site was modeled after a sample Department of Software Engineering due to the familiarity of Internet users with such Web sites. The sample Web site consisted of five main sections (see Appendix A for details):

1. Welcome: Introduces visitors to the Department of Software Engineering Web site and delivers a mission statement.
2. Faculty & Staff: Provides information about faculty and staff of the Department of Software Engineering.
3. Programs: Provides information about programs offered by the Department of Software Engineering.
4. Courses: Lists courses offered by the Department of Software Engineering.
5. Events: Displays events and activities in the Department of Software Engineering.

The Web site was built using Macromedia Dreamweaver MX for the design and development of the Web pages. Macromedia Fireworks MX was used to edit and
compose the pictures and graphics used in the Web site. The Web site pages were built using HTML, DHTML, and JavaScript. Other technologies and languages were also used to build the survey as discussed in the following section. The Web site provided examples of rotation applied to a sample page.

5.3 Survey Design

In order to set up the questionnaire for the study of the different aspects of rotation, a Web site environment was designed and constructed that asked a series of questions from Internet users in order to study how Internet users explore and surf the Web. The survey questionnaire consisted of five different categories of questions. The questionnaire appears in Appendix C. Each category focused on certain aspects related to the users’ Internet behavior. The categories are:

1. Background Information
2. General Internet Information
3. Internet Advertisement and Information Delivery
4. Online Information Updates
5. Internet Web Site Browsing
6. Web Site Layout and Content

The survey was built using Macromedia Dreamweaver MX for page design and development. The survey Web pages were built using HTML and PHP, which is a server page scripting language. The survey was connected to the MySQL database management
system Version 3.23.58 using the PHP database connectivity library. The MySQL database that was used consisted of three main tables: Questions, Answers, and Survey. The Questions table has the different questions that were asked from the survey participants, the Answers table, which is linked to the Questions table, has the different answers' options. The survey table is the table where the different surveys were stored. This table is linked to the Questions and the Answers tables. The survey results were calculated and posted online for readability using queries executed on the MySQL remote database engine using PHP (see Appendix D for implementation details).

As part of the survey, some questions required showing examples of rotation in order to ensure that participants had a better understanding of the questions. Links to several examples on the experimental Web site were provided on the online survey.

In order to make the survey available to more participants, a hard copy of the survey was also used to collect data. To provide examples of rotation as those in the online version, a hard copy of the Web site pages referred to in the survey questions were added to the paper survey as an appendix.
CHAPTER VI

RESULTS AND ANALYSIS

6.1 Results

The data collected from the survey can be categorized into six categories: Background information, general Internet information, Internet advertisement and information delivery, online information updates, Internet Web site browsing, and Web site layout and content. The data collected from the people who participated in the survey (i.e., filled out the questionnaire) is discussed below in the content of the six categories mentioned above.

6.1.1 Background Information

Almost all of Internet users who participated in the survey were between the ages of 18 and 34 (Figure 1). This is due to the fact that most of the survey participants were sight gustily college students (actually, graduate students).
Figure 1. Age distribution of the participants

Figure 2 shows that the majority, about 74%, of the participants' were male while less than 26% were female.

Figure 2. Gender distribution of the participants

In Figure 3, it is shown that about 42% of the people participating in the survey had Master’s or Ph.D. degrees.
Most of the participants in the survey were students. About 85% were attending school when they participated in the survey, as shown in Figure 4.
As shown in Figure 5, less than 2% of the people who participated in the survey considered themselves not familiar with the Internet, while about 36% considered themselves as experts.

6.1.2 General Internet Information

All of the people who participated in the survey had access to the Internet either at home or at work/school. About three out of four had access to the Internet both at home and at work/school (Figure 6).
In Figure 7, it is shown that more than 95% of the people who participated in the survey spent at least one hour every day on the Internet and about 30% spent 4 to 8 hours online daily.

As depicted in Figure 8, Web sites dealing with general news and information, educational, and portals or search engines were the most frequently visited by the survey participants.
participants. Personal Web pages, auctions, and sports pages were the least visited Web sites.

Figure 8. Categories of Web sites visited by the survey participants.

Figure 9. Survey participants' response to the question: “Are there certain Web site that the users frequently visit?”
Figure 9 shows that almost all survey participants frequently visit certain Web site, with the overall frequency shown in Figure 10. More than 90% visited these Web sites at least daily.

Figure 10. Frequency of the survey participants’ visits to Web sites of choice

6.1.3 Internet Advertisement and Information Delivery

As shown in Figure 11, 80.6% of the people who participated in the survey felt either bad or very bad about pop-up windows. About 6% felt good, while only 12.9% had no or neutral feelings about them.
With flashing ads and banners the feelings of the survey participants were still negative. 79% of the people who participated in the survey felt either bad or very bad about flashing ads and banners. 3.2% felt good about them, while 17.7% had no or neutral feelings about them (Figure 12).
Figure 13 shows that almost four out of five of the people who participated in the survey had very bad feelings about spam or unsolicited emails, and another 16.1% felt bad about them. So more than 95% had negative feelings, and only 4.8% had no or neutral feelings.

![Graph showing survey participants' feelings about unsolicited email](image)

Figure 13. The survey participants' feeling about unsolicited email (spam, junk mail)

When asked "What delivery means do users prefer if Web site sponsors want to notify you about new releases or information?" 60.3% preferred email, flashing ads and banners came in second with 20.6% (Figure 14).
Figure 14. The delivery means that the survey participants prefer if Web site sponsors want to notify them about new releases or information.

As shown in Figure 15, 19.4% of the people who participated in the survey agreed that changing the color and the font of some components in a Web site makes users more interested in looking at them. 62.9% thought that changing the color and the font sometimes makes users more interested in looking at them, while 17.7% do not agree at all.
Figure 15. Survey participants’ responses to the question: “Does changing the color and font of some components in a Web site makes users more interested in looking at them?”

6.1.4 Online Information Updates

About half of the people who participated in the survey had no feelings or neutral feelings regarding changing the layout of Web sites that they are familiar with (Figure 16). 7.6% of the participants would be either upset or very upset, while 38.7% would be appreciative.
When asked how often would they like changes to be made to Web sites, the survey participants were divided. 50.0% preferred frequent changes, while 48.4% preferred the changes to be rare (Figure 17).

Figure 17. The survey participants’ preferred frequency of making changes to Web sites
In Figure 18, it is shown that 83.9% of the people who participated in the survey preferred slight changes to the layout and content of Web sites. 12.9% prefer dramatic changes, while 3.2% did not prefer any changes at all.

![Bar chart showing preferences for changes in Web sites](image)

**Figure 18.** The type of changes that the survey participants liked to see made to the Web sites that they visit frequently

6.1.5 Internet Web Site Browsing

After visiting a Web site several times, 41.9% of the people who participated in the survey always looked for new things on the Web site (Figure 19). 53.2% of them sometimes looked for new things, while 4.8% did not look for anything new.
Figure 19. A depiction of the survey participants’ responses to the question: “After visiting a Web site several times, do you look for new things on it?”

In Figure 20, it is shown that 35.5% of the survey participants went directly to what they wanted when re-visiting a Web site, while 46.8% of them usually would go directly to what they wanted, but sometimes they would look around to check if there is anything they may be interested in. 17.7% would look around to check if there is anything they may be interested in.
Figure 20. A depiction of the survey participants’ responses to a question about what they would do when re-visitng a Web site.

In Figure 21, it is shown that 54.8% of survey participants stated that when they visit a Web site for the first time, they scan it before deciding where to go next. 32.3% read the first thing that catches their attention. Only 12.9% stated that they read the contents of the Web site before figuring out what to do.

Figure 21. The survey participants responses to the question: “When visiting a Web site for the first time, what do you do?”
More than 74% of the survey participants stated that they look in the general neighborhood for an item they are looking for when they cannot find it in its expected place. 9.7% would give up and consider the search over once they could not find an item in its expected place. 16.1% would start looking everywhere in the website till they find it (Figure 22).

Figure 22. The survey participants’ responses to the question: “When looking for something and expecting to find it in a certain place, what do you do?”
Figure 23 shows that 60.0% of the Internet users who participated in the survey when finding a new item in the place of an item they originally wanted to find, they would just scan it. About 20% would ignore the new item, while the other 20.0% would try to find more about it.

![Bar chart showing survey responses](chart.png)

Figure 23. The survey participants' responses to the question: "When looking for something but finding something else in its place, what do you do?"

As shown below in Figure 24, 35.7% of the people who participated in the survey stated that many times they have found interesting things while looking for something else, 63.9% said they sometimes have found interesting things.
6.1.6 Web Site Layout and Content

More than half of the Internet users who participated in the survey said that they have customized or personalized Web sites before (Figure 25), 43.5% said that they have not.
In figure 26, it is shown that 54.8% of the survey participants preferred a customizable Web site that remembers their preferences, only 45.2% preferred a Web site with standard layout for all users.

![Bar chart showing preferences between customizable and standard layout Web sites.]

Figure 26. The survey participants’ responses to the question: “Which do you prefer, a customizable Web site that remembers your preferences or a Web site with standard layout for all users?”

When asked which they would appreciate more in a Web site, 46.8% of the survey participants said that they would appreciate content first and then layout, as shown in Figure 27. 27.4% said they appreciate both content and layout the same. About 19.4% said they would appreciate layout first and then content.
Figure 27. The survey participants’ responses to the question: “Which do you appreciate more in a Web site: layout or content?”

As seen in Figure 28, when asked whether they are familiar with the concept of re-shelving in general, 56.5% of the Internet users who participated in the survey said yes. 30.6% said they are kind of familiar with it. 12.9% said they are not familiar with the concept of re-shelving.

Figure 28. The survey participants’ responses to the question: “Are you familiar with the concept of re-shelving in general?”
Figure 29 shows that when asked whether they are familiar with the concept of re-shelving/rotation applied to Web sites, 41.9% of the Internet users who participated in the survey said yes. 35.5% said they were kind of familiar with it. But more than 22.6% said they were not familiar with it at all.

![Figure 29](image.png)

**Figure 29.** The survey participants’ responses to the question: “Are you familiar with the concept of re-shelving/rotating applied to Web pages?”

6.2 Analysis

Most Internet users visit certain Web sites either daily or several times a day. Those frequent visits make them familiar with the content and layout of those Web sites. After visiting a Web site several times, many users go directly to where the information they want is located at in the Web site, while some of them may look for new or updated information. As a consequence, new or updated components are generally less likely to be visited or noticed by frequent visitors. The more visits a user makes to a Web site, the more familiar (s)he gets with the content and layout of that Web site.
Users in general want to have access to the latest and the most up-to-date information but they do not prefer frequent changes to the Web sites. Due to the dynamic nature of Web sites, changes and updates take place all the time. The demand for updated and recent information somehow contradicts with the users’ preference for fewer updates and changes to Web sites. As a solution, changes made to a Web site should not be very dramatic or very frequent. Users seem to prefer slight rather than dramatic changes to both content and layout of Web sites. At the same time, changes can still be made frequently to both layout and content through slight and small steps.

The widely used advertisement techniques such as pop-up windows, flashing ads and banners, and spam emails were not welcomed at all by the survey participants and in general by Internet users. In fact, most Internet users have negative feelings towards them. Enhancing visibility and advertising on Web sites should find other techniques that can serve the goal of information delivery while at the same not offending users.

Changing the color and font of some Web site components sometimes makes users more interested in looking at them. However, still there is concerns about whether users will notice that the color and font have changed for some components of a Web site, if the users do not even know about them. Under the tunnel vision phenomenon (see Chapter III, Section 1), users may not see them so they probably will not notice the color and font changes. Rotation (see Chapter IV, Section 1) can be applied to some components of a Web site to enhance the visibility of the new or updated information of that Web site.

In order for rotation to enhance the visibility of Web sites, some aspects and factors should be taken into consideration. An important factor is that not all components
of a Web site should be rotated at the same time. Also, rotation should not cause major or
dramatic changes to the general layout of a Web site.

Rotation should be applied to the frequently visited components while still
displaying the less frequently visited components in their location. The rotated
components should not be far from their original location so that the users will not spend
more than a few seconds to locate them.

An attempt should be made to cause slight changes to the layout of a Web site, there should always be changes but this should not lead to user alienation.

Rotation should not affect Web site customization or personalization. Since
rotation is in general a re-positioning technique, it does not and should not interfere with
the content of customized or personalized components. In order for rotation to be
effective in enhancing Web site visibility, traffic and statistical information about Web
site components, such as hits counts and number of clicks, should be collected and
analyzed.
CHAPTER VI

SUMMARY AND FUTURE WORK

7.1 Summary

Enhancing Web site visibility has been the focus of many studies and research due to the important role that the Internet plays in today’s world. As discussed in Chapter II, a number of tools and techniques have been utilized to enhance visibility and to encourage Web site visitors to learn more about the new information or services. Flashing ads and banners, pop-up windows, and spam or unsolicited email are some of these tools and techniques.

Chapter III discussed one of the main Web site visibility concerns which is tunnel vision. Tunnel vision is the case when a Web site’s user visits it a few times and he used to its layout and becomes familiar with its contents. In such situations, users know where to go and where to look to obtain the information they want. As a result, users may start focusing only on certain parts and areas. This familiarity can lead to ignoring other parts of the Web site they are using.

Rotation can be defined, as stated in Chapter IV, as slight changes in the positions, parts, or components of a Web site, which users most look at or are most interested in, for the purpose of keeping the users interested, fighting eye fatigue and
boredom, and allowing the users to find new information in unexpected places. Because of the tunnel vision phenomenon, users visiting a Web site, with which they are familiar, typically look at certain areas or parts where they expect to find certain information. By rotating some of the components on a Web site, frequent users will find other information published in the same familiar places and areas where they usually look.

In order to study the different aspects of rotation and its impact on Web site visibility, a one-shot experimental design and a survey were conducted. Chapter V discussed the experiment design and the survey results.

The conclusion that can be summarized from the analysis section of Chapter VI is that, Rotating Web site components can potentially encourage users to look at the new information thus counter-acting the tunnel vision phenomenon. Web site visitors, who are used to looking at certain parts and areas within a Web site, will take a few seconds trying to locate the information they are looking for, during this time, users will be reading and learning about other things published on that Web site.

7.2 Future Work

The findings of this study regarding applying rotation to enhance visibility of Web sites can open a number of opportunities for further research and studies. An interesting topic is the relationship between data collected from Web sites and the statistical analysis of performance and rotation. Finding a quantitative basis for rotation is another interesting topic that can be studied. Developing a set of rotation techniques that can be used to apply rotation to Web sites is another field that can be looked at.
Compiling a set of primitive rotation techniques that can be used to come up with higher level or composite rotation approaches and techniques can be another focus of further studies.
REFERENCES


GLOSSARY

Rotation: Slight changes in the positions of the parts and components of a Web site, which the users most look at or are interested in, for the purpose of keeping the users interested, fighting eye fatigue and boredom, and allowing the users to find new information in unexpected places.

Tunnel Vision: A phenomenon that occurs when users start to focus on particular areas of a Web site and ignore other areas.

Web Site: A collection of information and services that are presented or published to viewers using different representation tools. The information and services are referred to as the Web site content, while the tools and the means of representations are referred to as Web site layout.

Web Site Content: Services and information that are displayed or provided through a Web site regardless of the mode of presentation.

Web Site Layout: The collection of components and tools that are used to present the Web site components in certain ways including font, color, and position.

Web Site Visibility: A measure of how well Web site components are displayed and whether the information or services are presented in a way that allows the viewers to notice them.
APPENDIX: A

WEB SITE

What follows is listing of the pages on the Web site that was constructed to study the different aspects of Web site visibility. The Web site was developed using Macromedia Dreamweaver MX to design the layout of the Web site pages, HTML, DHTML, and JavaScript to implement the Web pages. To edit and to compose the pictures and graphics were designed using Macromedia Fireworks MX.

The Web site consists of five main pages (for code and implementation, see Appendix B):


7. Faculty & Staff: Provides information about faculty and staff of the Department of Software Engineering.

8. Programs: Provides information about the programs offered by the Department of Software Engineering.

9. Courses: Lists courses offered by the Department of Software Engineering.

10. Events: Displays the events and activities in the Department of Software Engineering.
Technology advancements and the wide use of many software applications in today's world has introduced a real challenge to the software technology community. In the Department of Software Engineering at Technology State University, we provide a variety of programs for students of the rising generation to be prepared for the challenges ahead.

The Department of Software Engineering is located in the College of Arts and Sciences. The program emphasizes the software and programming aspects of computing with research directed toward applied computing. The department offers Bachelor's, Master's, and Doctorate degrees.

Department of Software Engineering
1004 Science Avenue
Technology City, OK 74747-2850
Phone: (555) 123-4567
Fax: (555) 123-4567
Welcome Faculty & Staff Programs Courses Events

FACULTY

John M. Smith, Ph.D.
Assistant Professor

Areas of Interest: Software engineering, object-oriented programming, and genetic algorithms.
Other Areas of Interest: Networking and operating systems.
Office Hours: 9:00 - 10:30 M F or by appointment
Phone: (555) 123-7654
E-mail: ismith@tsu.edu

George K. Johnson, Ph.D.
Assistant Professor

Areas of Interest: Date Structures, Computational Theory, and Artificial Intelligence.
Other Areas of Interest: Computer Architecture.
Office Hours: 12:30 - 1:30 W F or by appointment
Phone: (555) 123-7655
E-mail: gjohnson@tsu.edu

STAFF

George S. Adams
Systems Manager

Office: 9:00 - 10:30 M F or by appointment
Phone: (555) 123-7656
E-mail: gadams@tsu.edu
UNDERGRADUATE
A bachelor's degree in computer science at Technology State University opens up more opportunities for young graduates who are looking for a leading edge career in the technology section.

GRADUATE
The Department of Computer Science at Technology State University has a Master of Science and Ph.D. graduate programs.
<table>
<thead>
<tr>
<th>COURSES</th>
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</thead>
<tbody>
<tr>
<td><strong>Introduction to Computer Science I</strong></td>
</tr>
<tr>
<td>Course Number: CSSE-1013</td>
</tr>
<tr>
<td>Teacher: John M. Smith, Ph.D.</td>
</tr>
<tr>
<td>Time: 8:00 - 9:30 AM, TR</td>
</tr>
<tr>
<td>Location: 102 South Hall</td>
</tr>
<tr>
<td>Capacity: 29 of 40</td>
</tr>
<tr>
<td>Home Page: csse.tsu.edu/courses/1013/</td>
</tr>
<tr>
<td><strong>Introduction to Computer Science II</strong></td>
</tr>
<tr>
<td>Course Number: CSSE-1023</td>
</tr>
<tr>
<td>Teacher: George K. Johnson, Ph.D.</td>
</tr>
<tr>
<td>Time: 1:00 - 2:00 PM, MWF</td>
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<td>Location: 216 South Hall</td>
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If you have questions, comments, and/or suggestions, please contact the WebMaster.
**Events**

**Colloquium**

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<th>Title</th>
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<td>Computer Science</td>
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<td>Department</td>
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</tr>
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<td>017 Telecom Center</td>
</tr>
<tr>
<td>Date &amp; Time</td>
<td>Thursday, October 10, 2003</td>
</tr>
<tr>
<td></td>
<td>10:30 - 11:20 AM</td>
</tr>
</tbody>
</table>
APPENDIX: B

WEB SITE CODE

What follows is the source code listing of the files for the Web site discussed in Chapter IV.

1. Home page, Department/index.htm
2. Faculty & Staff page, Department/Faculty/index.htm
3. Programs page, Department/Programs/index.htm
4. Courses page, Department/Courses/index.htm
5. Events page, Department/Events/index.htm

1. Home page, Department/index.htm

```html
<html>
<head>
<title>Department of Software Engineering</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<script language="JavaScript">
<!--
function MM_preloadImages() { //v3.0
  var d=document; if(d.images){ if(!d.MM_p) d.MM_p=new Array(); 
  var i,j,d.MM_p.length,a=MM_preloadImages.arguments; for(i=0; i<a.length; i++) 
  if (a[i].indexOf("#")!=0) d.MM_p[i]=new Image; d.MM_p[i].src=a[i];}
}

function MM_swapImage() { //v3.0
  var i,j, x,a=MM_swapImage.arguments; for(i=0; a&&!i<a.length&&x=a[i]&&x.oSrc; i++) x.src=x.oSrc;
}

function MM_findObj(n, d) { //v4.01
  var p,i,x; if(!d) d=document; if((p=n.indexOf("#"))>0&&parent.frames.length) {
    d=parent.frames[n.substring(p+1)].document; n=n.substring(0,p);}
  if(!x=d.all) x=d.all[n]; for (i=0; x&&!i<x.forms.length;i++) x=x.forms[i][n];
  for(i=0; x&&!d.layers&&i<d.layers.length;i++) x=d.layers[i].document;
  if(!x) x=d.getElementById(n); return x;
}-->
</script>
</head>
```

51
Technology advancements and the wide use of many software applications in today's workplace has introduced a real challenge to the software technology community. In the Department of Software Engineering at Technology State University, we provide a variety of programs for students of the rising generation to be prepared for the challenges ahead.

The Department of Software Engineering is located in the College of Arts and Sciences. The program emphasizes the software and programming aspects of computing with research directed toward applied computing. The department offers Bachelor's, Masters, and Doctorate degrees.

Department of Software Engineering
1004 Science Avenue
Technology City, OK 74747-2850
Phone: (555) 123-4567
Fax: (555) 123-4567
2. Faculty & Staff page, Department/Faculty/index.htm

<html>
<head>
<title>Department of Software Engineering - Faculty</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<script language="JavaScript">
function MM_preloadImages() { //v3.0
var d=document; if(d.images){ if(!d.MM_p)d.MM_p=new Array();
var i,j,d.MM_p.length,a=MM_preloadImages.arguments; for(i=0; i<a.length; i++)
if (a[i].indexOf("#")!=-1){ d.MM_p[j]=new Image; d.MM_p[j++].src=a[i];}
}
function MM_swapImageRestore() { //v3.0
var i,x,a=document.MM_sr; for(i=0;a&&i<a.length&&(!x||a[i].indexOf("#"))&&!x.oSrc;i++) x.src=x.oSrc;
}
function MM_swapImage() { //v3.0
var i,j=0,x,a=MM_swapImage.arguments; document.MM_sr=new Array; for(i=0;i<(a.length-2);i++)
if (((x=MM_findObj(a[i]))!=null){document.MM_sr[j++]=x; if(!x.oSrc) x.oSrc=x.src; x.src=x.oSrc; j++;}
}
function MM_findObj(n, d) { //v4.01
var p,i,x; if(!d) d=document; if((p=n.nodeName)>0&&parent.frames.length) { d=parent.frames[d].document; n=n.substring(0,p);}
if(!((x=d[n])&&d.all)) x=d.all[n]; for(i=0;i<a.length;i++)
if(x&&!d.layers&&d.layers.length&&d.layers[i]) x=MM_findObj(n,d.layers[i].document);
if(x&&!d.getElementById) x=d.getElementById(n); return x;
}</script>
</head>

<body bgcolor="#FFFF00" topmargin="0" leftmargin="0" marginwidth="0" marginheight="0" onLoad="MM_preloadImages('images/nav/fac_hi.gif','images/nav/prog_hi.gif','images/nav/cour_hi.gif','images/nav/cal_hi.gif');MM_swapImages('welcome1','../images/welcome_on.gif',1);MM_swapImages('Faculty','../images/faculty_on.gif',1);MM_swapImages('Programs','../images/programs_on.gif',1);MM_swapImages('Courses','../images/courses_on.gif',1);MM_swapImages('Events','../images/events_on.gif',1);">
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<td width="15"><img src="/images/spacer.gif" width="15" height="10" border="0"></td><td width="683" align="center" valign="top"><p><img src="/department/images/computer_numbers.jpg" alt="Image" width="160" height="108" border="0" vspace="0" /></p><br/>
</td></tr></table>
</body>
</html>
<table>
<thead>
<tr>
<th>Name</th>
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<th>Areas of Interest</th>
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<tbody>
<tr>
<td>John M. Smith</td>
<td>Assistant Professor</td>
<td>Software engineering, object-oriented programming, and genetic algorithms.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other Areas of Interest: Networking and operating systems.</td>
</tr>
<tr>
<td>George K. Johnson</td>
<td>Assistant Professor</td>
<td></td>
</tr>
</tbody>
</table>

Office Hours: 9:00 - 10:30 M-F or by appointment

Phone: (SSS) 123-7654

Email: jsmith@tsu.edu

<table>
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Office Hours: 9:00 - 10:30 M-F or by appointment

Phone: (SSS) 123-7654

Email: jsmith@tsu.edu
Areas of Interest

Structures, Computational Theory, and Artificial Intelligence.

Other Areas of Interest

Computer Architecture.

Office Hours
12:30 - 1:30 W F or by appointment

Phone
(555) 123-7655

Email
gjohnson@tsu.edu

George S. Adams
Systems Manager

Office
9:00 - 10:30 M F or by appointment

Phone
(555) 123-7655

Email
gjohnson@tsu.edu
A bachelor's degree in computer science at Technology State University opens up more opportunities for young graduates who are looking for a leading edge career in the technology section. The Department of Computer Science at Technology State University has a Master of Science and Ph.D. graduate programs.
<table>
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<td>John M. Smith, Ph.D.</td>
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<tr>
<td>Location</td>
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**Course Number**: CSSE-1013

**Teacher**: John M. Smith, Ph.D.

**Time**: 8:00 - 9:30 AM - TR

**Location**: CSSE 102

**Capacity**: 29 of 40
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<td>CSSE 216</td>
<td>40 of 40</td>
</tr>
<tr>
<td>Title</td>
<td>Optimization of Code Generators</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------</td>
<td></td>
</tr>
<tr>
<td>Speaker</td>
<td>K. M. Chen, Computer Science Department, Science &amp; Technology Institution, Science College, OC 24178</td>
<td></td>
</tr>
<tr>
<td>Place</td>
<td>017 Telecom Center</td>
<td></td>
</tr>
<tr>
<td>Date &amp; Time</td>
<td>Thursday, October 10, 2003, 10:30 AM - 11:20 AM</td>
<td></td>
</tr>
</tbody>
</table>
This appendix includes the survey that was distributed to the survey participants and also placed on the experimental design’s Web page. Some examples of rotation from the experimental Web site were added to the end of the survey, as discussed in Chapter V.

You are invited to participate in a study involving the Internet and Web sites. Note: Your responses are confidential and will only be used anonymously in an academic study.

1. Age
   a. 18 to 24
   b. 25 to 34
   c. 35 to 44
   d. 45 to 54
   e. 55 and up

2. Gender
   a. Male
   b. Female

3. Education
   a. High School Graduate
   b. Completed Some College
   c. College Graduate (4-year degree)
   d. Post College (Masters/PhD)
   e. Other

4. Occupation (e.g., student, accountant, etc.)
   ____________________________
5. How do you classify yourself regarding dealing with the Internet?
   a. Not that familiar
   b. Familiar
   c. Very familiar
   d. Expert

6. Do you have Internet access at:
   a. Home?
   b. Work/School?
   c. Both home and work/school?
   d. Neither home nor work/school?

7. How many hours do you spend online every day?
   a. Less than an hour
   b. 1 to 2 hours
   c. 2 to 4 hours
   d. 4 to 8 hours
   e. More than 8 hours

8. Which categories of Web sites do you visit frequently (please mark all that apply)?
   a. Auction
   b. Business/Financial news
   c. Company Web pages
   d. Education
   e. Entertainment
   f. General news & information
   g. Personal Web pages
   h. Portals/Search engines
   i. Shopping/eCommerce
   j. Sports
   k. Others

9. Are there certain Web sites that you visit frequently?
   a. Yes
   b. No

10. If yes, how often do you visit these Web sites?
    a. Several times a day
    b. Daily
    c. Several times a week
    d. Weekly
    e. Several times a month
    f. Monthly
g. Every now and then

11. How do you feel about pop-up windows?
   a. Very Good
   b. Good
   c. Neutral
   d. Bad
   e. Very bad

12. How do you feel about flashing ads and banners?
   a. Very Good
   b. Good
   c. Neutral
   d. Bad
   e. Very bad

13. How do you feel about unsolicited emails (spam, junk mail)?
   a. Very Good
   b. Good
   c. Neutral
   d. Bad
   e. Very bad

14. After visiting a Web site several times, do you look for new things on it?
   a. Yes
   b. Sometimes
   c. No

15. When re-visiting a Web site, do you:
   a. Go directly to what you want?
   b. Look around to check if there is anything you may be interested in?
   c. Usually you go directly to what you want, but sometimes you look around to check if there is anything you may be interested in?

16. How do you feel, when visiting a familiar Web site, when you notice that its layout has changed?
   a. Upset
   b. Don’t care
   c. Appreciative

17. How often do you prefer changes to be made to a Web site?
   a. Very frequently
   b. Frequently
   c. Rarely
   d. Never
18. What kind of changes do you like to see in Web sites that you visit frequently?
   a. Dramatic changes in layout and content
   b. Slight changes in layout and content
   c. No changes at all

19. If the Web site sponsors want to notify you about new releases or new information, what delivery means do you prefer?
   a. Email
   b. Paper flyers
   c. Banners
   d. Flashing ads
   e. Personal contact (by phone)
   f. Other (please specify) ____________________________

20. Does changing the colors and fonts of some components in a Web site make you more interested in looking at them?
   a. Yes
   b. Sometimes
   c. No

21. When visiting a Web site for the first time, what do you do?
   a. Scan it before deciding where to go next
   b. Visit the first thing that catches your attention
   c. Read the content of the Web site carefully before figuring out what to do

22. Have you tried to customize/personalize a Web site?
   a. Yes
   b. No

23. Which one of the following do you prefer?
   a. A customizable Web site that remembers your preferences
   b. A web site with a standard layout for all users

24. Which do you appreciate more in a Web site
   a. first screen layout (colors, fonts) then content (information)?
   b. first content then layout?
   c. both the same?
   d. does not matter?

Re-shelving is re-arranging the contents of stores or library shelves in order to include new items or expose some of the already existing items to customers in a different way. Re-shelving for a Web site can be called rotating. Check the attached pages at the end of the survey for some examples.
25. Are you familiar with the concept of re-shelving in general?
   a. Yes
   b. Kind of
   c. No

26. Are you familiar with the concept of re-shelving/rotating as applied to Web pages? (Check the attached pages at the end of this survey for some examples.)
   a. Yes
   b. Kind of
   c. No

27. When looking for something and expecting to find it in a certain place, do you:
   a. Look for it in the general neighborhood?
   b. Give up and repeat the search?
   c. Start looking everywhere until you find it?

28. When you are looking for something but you find something else in its place, do you
   a. Ignore the new item?
   b. Just scan the new item?
   c. Try to find more about the new item?

29. Have you ever found something interesting while looking for something else?
   a. Many times
   b. Sometimes
   c. Rarely

   Thank you.
Technology advancements and the wide use of many software applications in today's world has introduced a real challenge to the software technology community. In the Department of Software Engineering at Technology State University, we provide a variety of programs for students of the rising generation to be prepared for the challenges ahead.

The Department of Software Engineering is located in the College of Arts and Sciences. The program emphasizes the software and programming aspects of computing with research directed toward applied computing. The department offers Bachelors, Masters, and Doctorate degrees.

Department of Software Engineering  
1004 Science Avenue  
Technology City, OK 74747-2850  
Phone: (555) 123-4567  
Fax: (555) 123-4567
Welcome

Technology advancements and the wide use of many software applications in today's world has introduced a real challenge to the software technology community. In the Department of Software Engineering at Technology State University, we provide a variety of programs for students of the rising generation to be prepared for the challenges ahead.

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APPENDIX: D

ONLINE SURVEY CODE

What follows is the source code listing of the files for the survey discussed in Chapter V.

1. User Interface:
   
   1.1 Online Survey Page, survey/index.htm
   
   1.2 Paper Survey Page, survey/papersurvey.htm
   
   1.3 Survey Management Page, Survey/map.htm

2. Business Logic:

   2.1 Online Survey, survey/survey.php

   2.2 Paper Survey Page, survey/papersurvey.php

   2.3 Results Page, survey/results.php

3. Database:

   3.1 Database Schema, survey/mysql.php
1. User Interface

1.1 Online Survey Page, survey/index.htm

```html
<HTML>
<HEAD>
<TITLE>Tunnel vision &amp; Rotation</TITLE>
<META http-equiv=Content-Type content="text/html; charset=iso-8859-1">
<META content="Tunnel vision, Rotation, web site layout" name=keywords>
<META content="Enter brief description here." name=description>
<META name=GENERATOR>
<TABLE cellspacing=0 cellPadding=0 width=80% align=center border=0>
  <TBODY>
    <TR align=center>
      <TD align=center/>
    </TR>
    <TR>
      <TD align=center><FONT face="Arial Black" color=#ffffff><B><font color="#000000 >Tunnel Vision &amp; Rotation</font><FONT face="Verdana, Arial, Helvetica, sans-serif" color=#999999 size=2><BR>
    </TD>
  </TR>
  <TR>
    <TD align=center><FORM action=survey.php method=post>
      <P>&nbsp;</P>
      <P><font face="Verdana, Arial, Helvetica, sans-serif">You are invited to participate in a study involving the Internet and web sites. Note: Your responses are confidential and will only be used anonymously in an academic study. </font></P>
      <P><font face="Verdana, Arial, Helvetica, sans-serif">1. Age</font></P>
      <TABLE cellspacing=0 cellPadding=1 border=0>
        <TBODY>
          <TR>
            <TD align=center><INPUT type=radio value=2 name=Q1>
              </TD>
            <TD align=left><FONT face="Verdana, Arial, Helvetica, sans-serif">18 to 24</FONT></TD>
          </TR>
          <TR>
            <TD align=center><INPUT type=radio value=3 name=Q1>
              </TD>
            <TD align=left><FONT face="Verdana, Arial, Helvetica, sans-serif">25 to 34</FONT></TD>
          </TR>
          <TR>
            <TD align=center><INPUT type=radio value=4 name=Q1>
              </TD>
            <TD align=left><FONT face="Verdana, Arial, Helvetica, sans-serif">35 to 44</FONT></TD>
          </TR>
          <TR>
            <TD align=center><INPUT type=radio value=5 name=Q1>
              </TD>
            <TD align=left><FONT face="Verdana, Arial, Helvetica, sans-serif">45 to 54</FONT></TD>
          </TR>
        </TBODY>
      </TABLE>
    </FORM></TD>
  </TR>
</TABLE>
</FORM>
</HEAD>
</HTML>
```
2. Gender

<table>
<thead>
<tr>
<th>Radio</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>Female</td>
</tr>
</tbody>
</table>

3. Education

<table>
<thead>
<tr>
<th>Radio</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High school graduate</td>
</tr>
<tr>
<td></td>
<td>Completed some college</td>
</tr>
<tr>
<td></td>
<td>College graduate (4-year degree)</td>
</tr>
<tr>
<td></td>
<td>Post college (Masters/PhD)</td>
</tr>
<tr>
<td></td>
<td>Other &lt;INPUT name=Q3other size=40&gt;</td>
</tr>
</tbody>
</table>
4. Occupation (e.g., student, accountant, etc.)

5. How do you classify yourself regarding dealing with the Internet?

<table>
<thead>
<tr>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not that familiar</td>
</tr>
<tr>
<td>Familiar</td>
</tr>
<tr>
<td>Very familiar</td>
</tr>
<tr>
<td>Expert</td>
</tr>
</tbody>
</table>

6. Do you have Internet access at:

<table>
<thead>
<tr>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home?</td>
</tr>
<tr>
<td>Work/School?</td>
</tr>
<tr>
<td>Both home and work/school?</td>
</tr>
</tbody>
</table>
7. How many hours do you spend online every day?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Less than an hour</td>
</tr>
<tr>
<td>2</td>
<td>1 to 2 hours</td>
</tr>
<tr>
<td>3</td>
<td>2 to 4 hours</td>
</tr>
<tr>
<td>4</td>
<td>4 to 8 hours</td>
</tr>
<tr>
<td>5</td>
<td>More than 8 hours</td>
</tr>
</tbody>
</table>

8. Which categories of web sites do you visit frequently (please mark all that apply)?

- Auction
- [Other categories...]
- [Other categories...]
- [Other categories...]
<table>
<thead>
<tr>
<th>Checkbox</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Business/Financial News</td>
</tr>
<tr>
<td></td>
<td>Company Web Pages</td>
</tr>
<tr>
<td></td>
<td>Educational</td>
</tr>
<tr>
<td></td>
<td>Entertainment</td>
</tr>
<tr>
<td></td>
<td>General News &amp; Information</td>
</tr>
<tr>
<td></td>
<td>Personal Web Pages</td>
</tr>
<tr>
<td></td>
<td>Portals/search Engines</td>
</tr>
<tr>
<td></td>
<td>Shopping/eCommerce</td>
</tr>
<tr>
<td></td>
<td>Sports</td>
</tr>
</tbody>
</table>

79
9. Are there certain web sites that you visit frequently?  

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="value=1" alt="radio button" /></td>
<td><img src="value=2" alt="radio button" /></td>
</tr>
</tbody>
</table>

10. If yes, how often do you visit these web sites?  

<table>
<thead>
<tr>
<th>Several times a day</th>
<th>Daily</th>
<th>Several times a week</th>
<th>Weekly</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="value=1" alt="radio button" /></td>
<td><img src="value=2" alt="radio button" /></td>
<td><img src="value=3" alt="radio button" /></td>
<td><img src="value=4" alt="radio button" /></td>
</tr>
</tbody>
</table>

Several times a day  

Daily  

Several times a week  

Weekly  

Several
<table>
<thead>
<tr>
<th>Monthly</th>
<th>Every now and then</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Good</td>
<td>Good</td>
</tr>
<tr>
<td>Neutral</td>
<td>Bad</td>
</tr>
<tr>
<td>Very Bad</td>
<td></td>
</tr>
</tbody>
</table>

11. How do you feel about pop-up windows?

12. How do you feel about flashing ads and banners?
13. How do you feel about unsolicited emails (spam, junk mail)?

<table>
<thead>
<tr>
<th>Choice</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very Good</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Good</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Neutral</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Bad</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Very Bad</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: The table continues with more options for the same question.
14. After visiting a web site several times do you look for new things on it?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sometimes</td>
<td>Sometimes</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

15. When re-visiting a web site, do you go directly to what you want or look around to check if there is anything you may be interested in?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go Directly</td>
<td>Go directly to what you want</td>
</tr>
<tr>
<td>Look Around</td>
<td>Look around to check if there is anything you may be interested in</td>
</tr>
<tr>
<td>Usually</td>
<td>Usually</td>
</tr>
</tbody>
</table>

83
16. How do you feel, when visiting a familiar web site, when you notice that its layout has changed?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very upset</td>
</tr>
<tr>
<td>2</td>
<td>Upset</td>
</tr>
<tr>
<td>3</td>
<td>Neutral</td>
</tr>
<tr>
<td>4</td>
<td>Appreciative</td>
</tr>
</tbody>
</table>

17. How often do you prefer changes to be made to a web site?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very frequently</td>
</tr>
<tr>
<td>2</td>
<td>Frequently</td>
</tr>
<tr>
<td>3</td>
<td>Rarely</td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
18. What kind of changes do you like to see in web sites that you visit frequently?

19. If the web site sponsors want to notify you about new releases or new information, what delivery means do you prefer?
20. Does changing the colors and fonts of some components in a web site make you more interested in looking at them?

<table>
<thead>
<tr>
<th>Option</th>
<th>Yes</th>
<th>Sometimes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TD</strong></td>
<td><strong>&lt;INPUT type=radio value=1 name=Q20&gt;</strong></td>
<td><strong>&lt;INPUT type=radio value=2 name=Q20&gt;</strong></td>
<td><strong>&lt;INPUT type=radio value=3 name=Q20&gt;</strong></td>
</tr>
</tbody>
</table>

21. When visiting a web site for the first time, what do you do?

<table>
<thead>
<tr>
<th>Option</th>
<th>Scan it before deciding where to go next</th>
<th>Read it right away</th>
<th>Do not read it</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TD</strong></td>
<td><strong>&lt;INPUT type=radio value=1 name=Q21&gt;</strong></td>
<td><strong>&lt;INPUT type=radio value=2 name=Q21&gt;</strong></td>
<td><strong>&lt;INPUT type=radio value=3 name=Q21&gt;</strong></td>
</tr>
</tbody>
</table>

86
Visit the first thing that catches your attention.

Read the content of the web site carefully before figuring out what to do.

22. Have you tried to customize/personalize a web site?

23. Which one of the following do you prefer?

24. Which do you appreciate more in a web site?
content then layout?</font></TD>
</TR>
</TBODY></TABLE>

<p><font face="Verdana, Arial, Helvetica, sans-serif">Re-shelving is re-arranging the contents of stores or library shelves in order to include new items or expose some of the already existing items to customers in a different way. Re-shelving for a web site can be called rotating. <a href="/survey/Rotation.htm">click here</a> for examples.</font></p>

25. Are you familiar with the concept of re-shelving in general?

<table cellspacing=0 cellPadding=1 border=0>
<tbody>
<tr align=center width=75>
<td align=left><font face="Verdana, Arial, Helvetica, sans-serif">Yes</font></td>
</tr>
<tr align=center width=75>
<td align=left><font face="Verdana, Arial, Helvetica, sans-serif">Kind of</font></td>
</tr>
<tr align=center width=75>
<td align=left><font face="Verdana, Arial, Helvetica, sans-serif">No</font></td>
</tr>
</tbody></table>

26. Are you familiar with the concept of re-shelving/rotating as applied to web pages? (<a href="/survey/Rotation.htm">click here</a> for examples)

<table cellspacing=0 cellPadding=1 border=0>
<tbody>
<tr align=center width=75>
<td align=left><font face="Verdana, Arial, Helvetica, sans-serif">Yes</font></td>
</tr>
<tr align=center width=75>
<td align=left><font face="Verdana, Arial, Helvetica, sans-serif">No</font></td>
</tr>
</tbody></table>
27. When looking for something and expecting to find it in a certain place, do you:

- Look for it in the general neighborhood?  
- Give up and repeat the search?  
- Start looking everywhere till you find it?

28. When you are looking for something but you find something else in its place, do you:

- Ignore the new item?  
- Just scan the new item?  
- Try to find more about the new item?
29. Have you ever found something interesting while looking for something else?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Many times</td>
</tr>
<tr>
<td>2</td>
<td>Sometimes</td>
</tr>
<tr>
<td>3</td>
<td>Rarely</td>
</tr>
</tbody>
</table>

Submit Reset
1.2 Paper Survey Page, survey/papersurvey.htm

```html
<HTML>
<HEAD>
<TITLE>Tunnel vision &amp; Rotation</TITLE>
<META http-equiv=Content-Type content="text/html; charset=iso-8859-1">
<META content="Tunnel vision, Rotation, web site layout" name=Keywords>
<META content="Enter brief description here." name=Description>
<META content="MSHTML 6.00.2800.1141" name=GENERATOR>
<BODY text=#000000 vLink=#006699 aLink=#669999 bgColor=#CCCCCC>
<TABLE cellspacing=0 cellPadding=0 width=80% align=center border=0>
</BODY>
</HTML>

1. Age

<table>
<thead>
<tr>
<th>Option</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 18-24</td>
<td>radio</td>
</tr>
<tr>
<td>b. 25-34</td>
<td>radio</td>
</tr>
<tr>
<td>c. 35-44</td>
<td>radio</td>
</tr>
<tr>
<td>d. 45+</td>
<td>radio</td>
</tr>
</tbody>
</table>

Note: Your responses are confidential and will only be used anonymously in an academic study.

You are invited to participate in a study involving the Internet and web sites. Your responses are confidential and will only be used anonymously in an academic study.

1. Age

Please select your age group:

- a. 18-24
- b. 25-34
- c. 35-44
- d. 45+

Your responses are confidential and will only be used anonymously in an academic study.
```
2. Gender

<table>
<thead>
<tr>
<th>a.</th>
<th>b.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Female</td>
</tr>
</tbody>
</table>

3. Education

<table>
<thead>
<tr>
<th>a.</th>
<th>b.</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Graduate</td>
<td>Completed Some College</td>
</tr>
<tr>
<td>c.</td>
<td>d.</td>
</tr>
<tr>
<td>College Graduate (4-year degree)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Post College (Masters/PhD)</td>
</tr>
<tr>
<td>-----</td>
<td>------------------------------</td>
</tr>
<tr>
<td>e.</td>
<td></td>
</tr>
</tbody>
</table>
1. How many hours a day do you spend online at home?  
- [ ] Less than an hour  
- [ ] 1 to 2 hours  
- [ ] 2 to 4 hours  
- [ ] Neither home nor work/school?

2. How many hours a day do you spend online at work/school?  
- [ ] Less than an hour  
- [ ] 1 to 2 hours  
- [ ] 2 to 4 hours  
- [ ] Neither home nor work/school?

3. How many hours a day do you spend online at both home and work/school?  
- [ ] Less than an hour  
- [ ] 1 to 2 hours  
- [ ] 2 to 4 hours  
- [ ] Neither home nor work/school?

4. How many hours a day do you spend online at school?  
- [ ] Less than an hour  
- [ ] 1 to 2 hours  
- [ ] 2 to 4 hours  
- [ ] Neither home nor work/school?

5. How many hours a day do you spend online at work?  
- [ ] Less than an hour  
- [ ] 1 to 2 hours  
- [ ] 2 to 4 hours  
- [ ] Neither home nor work/school?

6. How many hours a day do you spend online in general?  
- [ ] Less than an hour  
- [ ] 1 to 2 hours  
- [ ] 2 to 4 hours  
- [ ] Neither home nor work/school?

7. How many hours do you spend online every day?  
- [ ] Less than an hour  
- [ ] 1 to 2 hours  
- [ ] 2 to 4 hours  
- [ ] Neither home nor work/school?
d. <input type="radio" value="4" name="Q7"> 4 to 8 hours

e. <input type="radio" value="S" name="Q7"> More than 8 hours

S. Which categories of web sites do you visit frequently (please mark all that apply)?

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Auction</td>
<td>Business/Financial News</td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td>Company Web Pages</td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td>Educational</td>
</tr>
<tr>
<td>e.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Are there certain web sites that you visit frequently?  

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

96
<table>
<thead>
<tr>
<th></th>
<th>a.</th>
<th>b.</th>
<th>c.</th>
<th>d.</th>
<th>e.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes/No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>a.</td>
<td>Several times a day</td>
<td>Daily</td>
<td>Several times a week</td>
<td>Weekly</td>
<td>Several times a month</td>
</tr>
<tr>
<td>b.</td>
<td>Several times a day</td>
<td>Daily</td>
<td>Several times a week</td>
<td>Weekly</td>
<td>Several times a month</td>
</tr>
<tr>
<td>c.</td>
<td>Several times a day</td>
<td>Daily</td>
<td>Several times a week</td>
<td>Weekly</td>
<td>Several times a month</td>
</tr>
<tr>
<td>d.</td>
<td>Several times a day</td>
<td>Daily</td>
<td>Several times a week</td>
<td>Weekly</td>
<td>Several times a month</td>
</tr>
<tr>
<td>e.</td>
<td>Several times a day</td>
<td>Daily</td>
<td>Several times a week</td>
<td>Weekly</td>
<td>Several times a month</td>
</tr>
<tr>
<td>Month</td>
<td>Value</td>
<td>Frequency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-------</td>
<td>----------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monthly</td>
<td>6</td>
<td>Every now and then</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Good</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Neutral</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Bad</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Good</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. How do you feel about pop-up windows?
12. How do you feel about flashing ads and banners?  

<table>
<thead>
<tr>
<th>Option</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>1</td>
<td>Very Good</td>
</tr>
<tr>
<td>b.</td>
<td>2</td>
<td>Good</td>
</tr>
<tr>
<td>c.</td>
<td>3</td>
<td>Neutral</td>
</tr>
<tr>
<td>d.</td>
<td>4</td>
<td>Bad</td>
</tr>
<tr>
<td>e.</td>
<td>5</td>
<td>Very Bad</td>
</tr>
</tbody>
</table>

13. How do you feel about unsolicited emails (spam, junk mail)?  

<table>
<thead>
<tr>
<th>Option</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>1</td>
<td>Very Good</td>
</tr>
<tr>
<td>b.</td>
<td>2</td>
<td>Good</td>
</tr>
<tr>
<td>c.</td>
<td>3</td>
<td>Neutral</td>
</tr>
<tr>
<td>d.</td>
<td>4</td>
<td>Bad</td>
</tr>
<tr>
<td>e.</td>
<td>5</td>
<td>Very Bad</td>
</tr>
<tr>
<td></td>
<td>a.</td>
<td>b.</td>
</tr>
<tr>
<td>---</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. After visiting a web site several times do you look for new things on it? 

<table>
<thead>
<tr>
<th></th>
<th>a.</th>
<th>b.</th>
<th>c.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Sometimes</td>
<td>Neutral</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>d.</th>
<th>e.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bad</td>
<td>Very Bad</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
15. When re-visiting a web site, do you:

<table>
<thead>
<tr>
<th>Option</th>
<th>Select One</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go directly to what you want?</td>
<td>a.</td>
<td>a.</td>
</tr>
<tr>
<td>Look around to check if there is anything you may be interested in?</td>
<td>b.</td>
<td>b.</td>
</tr>
<tr>
<td>Usually you go directly to what you want, but sometimes you look around to check if there is anything you may be interested in?</td>
<td>c.</td>
<td>c.</td>
</tr>
</tbody>
</table>

16. How do you feel, when visiting a familiar web site, when you notice that its layout has changed:

<table>
<thead>
<tr>
<th>Option</th>
<th>Select One</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Upset</td>
<td>a.</td>
<td>a.</td>
</tr>
<tr>
<td>Upset</td>
<td>b.</td>
<td>b.</td>
</tr>
<tr>
<td>Usually you go directly to what you want, but sometimes you look around to check if there is anything you may be interested in?</td>
<td>c.</td>
<td>c.</td>
</tr>
</tbody>
</table>
17. How often do you prefer changes to be made to a web site?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Very frequently</td>
</tr>
<tr>
<td>b.</td>
<td>Frequently</td>
</tr>
<tr>
<td>c.</td>
<td>Rarely</td>
</tr>
<tr>
<td>d.</td>
<td>Never</td>
</tr>
</tbody>
</table>

18. What kind of changes do you like to see in web sites that you visit frequently?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>(Describe option)</td>
</tr>
<tr>
<td>b.</td>
<td>(Describe option)</td>
</tr>
<tr>
<td>c.</td>
<td>(Describe option)</td>
</tr>
<tr>
<td>d.</td>
<td>(Describe option)</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>a.</td>
<td>Emails</td>
</tr>
<tr>
<td>b.</td>
<td>Paper flyers</td>
</tr>
<tr>
<td>c.</td>
<td>Pop-up windows</td>
</tr>
<tr>
<td>d.</td>
<td>Flashing ads and banners</td>
</tr>
<tr>
<td>e.</td>
<td>No changes at all</td>
</tr>
</tbody>
</table>

19. If the web site sponsors want to notify you about new releases or new information, what delivery means do you prefer?
Personal contact (by phone)

Other (please specify)

20. Does changing the colors and fonts of some components in a web site make you more interested in looking at them?

21. When visiting a web site for the first time, what do you do?
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td>Visit the first thing that catches your attention</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td>Read the content of the web site carefully before figuring out what to do</td>
<td></td>
</tr>
</tbody>
</table>

22. Have you tried to customize/personalize a web site?

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

23. Which one of the following do you prefer?

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>A customizable web site which remembers your preferences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>A web site with a standard layout for all users</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

24. Which do you
appreciate more in a web site</font> <TABLE cellspacing=0 cellPadding=1 border=0> <TBODY> <TR> <TD align=left><FONT face="Verdana, Arial, Helvetica, sans-serif">a.</FONT></TD> <TD align="center" > <FONT face="Verdana, Arial, Helvetica, sans-serif"> </FONT> <INPUT type=radio value=1 name=Q24> </FONT> First screen layout (colors, fonts) then content (information)?</TD> </TR> <TR> <TD align=left><FONT face="Verdana, Arial, Helvetica, sans-serif">b.</FONT></TD> <TD align="center" > <FONT face="Verdana, Arial, Helvetica, sans-serif"> </FONT> First content then layout?</TD> </TR> <TR> <TD align=left><FONT face="Verdana, Arial, Helvetica, sans-serif">c.</FONT></TD> <TD align="center" > <FONT face="Verdana, Arial, Helvetica, sans-serif"> </FONT> Both the same?</TD> </TR> <TR> <TD align=left><FONT face="Verdana, Arial, Helvetica, sans-serif">d.</FONT></TD> <TD align="center" > <FONT face="Verdana, Arial, Helvetica, sans-serif"> </FONT> Does not matter?</TD> </TR> </TBODY> </TABLE> <p><font face="Verdana, Arial, Helvetica, sans-serif">Re-shelving is re-arranging the contents of stores or library shelves in order to include new items or expose some of the already existing items to customers in a different way. Re-shelving for a web site can be called rotating, <a href="/survey/Rotation.htm">click here</a> for examples.</font></p> <p><font face="Verdana, Arial, Helvetica, sans-serif">25. Are you familiar with the concept of re-shelving in general?</font> <TABLE cellspacing=0 cellPadding=1 border=0> <TBODY> <TR> <TD align=left><FONT face="Verdana, Arial, Helvetica, sans-serif">a.</FONT></TD> <TD align="center" > <FONT face="Verdana, Arial, Helvetica, sans-serif"> </FONT> Yes</TD> </TR> <TR> <TD align=left><FONT face="Verdana, Arial, Helvetica, sans-serif">b.</FONT></TD> <TD align="center" > <FONT face="Verdana, Arial, Helvetica, sans-serif"> </FONT> Kind of</TD> </TR> </TBODY> </TABLE> </p>
26. Are you familiar with the concept of re-shelving/rotating as applied to web pages? (<a href="/survey/Rotation.htm">click here</a> for examples)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Yes</td>
</tr>
<tr>
<td>b.</td>
<td>Kind of</td>
</tr>
<tr>
<td>c.</td>
<td>No</td>
</tr>
</tbody>
</table>

27. When looking for something and expecting to find it in a certain place, do you:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Look for it in the general neighborhood?</td>
</tr>
<tr>
<td>b.</td>
<td>Give up and repeat the search?</td>
</tr>
</tbody>
</table>
28. When you are looking for something but you find something else in its place, do you:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Ignore the new item?</td>
</tr>
<tr>
<td>b.</td>
<td>Just scan the new item?</td>
</tr>
<tr>
<td>c.</td>
<td>Try to find more about the new item?</td>
</tr>
</tbody>
</table>

29. Have you ever found something interesting while looking for something else?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Many times</td>
</tr>
<tr>
<td>b.</td>
<td>Sometimes</td>
</tr>
<tr>
<td>c.</td>
<td></td>
</tr>
</tbody>
</table>

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<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

 Rarely

```html
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```
1.3 Survey Management Page, survey/map.htm

<HTML>
<HEAD>
<TITLE>Tunnel Vision &amp; Rotation</TITLE>
<META http-equiv=Content-Type content="text/html; charset=iso-8859-1">
<META content="Tunnel vision, Rotation, web site layout" name=keywords>
<META content="Enter brief description here." name=description>
<META content="MSHTML 6.00.2800.1141" name=GENERATOR></HEAD>
<BODY text=#000000 vLink=#0000FF aLink=#993300 link=#006699 bgColor=#CCCC99>
TABLE cellspacing=0 cellPadding=0 width=80% align=center border=0>
<TBODY>
<TR valign=top align=left>
<TD width=80% height=79>
<DIV align=center>
<DIV align=center></DIV></TD></TR>
<TR>
<TD valign=top height=46>
<DIV align=center><FONT face="Arial Black" color=#ffffff><B><font color="#000000">Tunnel Vision &amp; Rotation</font><FONT face="Verdana, Arial, Helvetica, sans-serif" color=#999999 size=2><BR>Questionnaire</B></FONT></DIV></TD></TR>
<TR valign=top align=left height=1150>
P>&nbsp;</P>
<P>&lt;font face="Verdana, Arial, Helvetica, sans-serif">Here is a list of links to several pages of the system.&lt;/font&gt;</P>
<P>&lt;font face="Verdana, Arial, Helvetica, sans-serif">To take the online survey, &lt;a href="/survey/index.htm">click here</a&gt;&lt;br&gt;
To enter paper forms into the system, &lt;a href="/survey/papersurvey.htm">click here</a&gt;&lt;br&gt;
To delete re-submittion cookie, &lt;a href="/survey/deletecookie.php">click here</a&gt;&lt;br&gt;
To set re-submittion cookie, &lt;a href="/survey/setcookie.php">click here</a&gt;&lt;br&gt;
To see online survey results, &lt;a href="/survey/onlineresults.php">click here</a&gt;&lt;br&gt;
To see paper survey results, &lt;a href="/survey/paperresults.php">click here</a&gt;&lt;br&gt;
To see all survey results, &lt;a href="/survey/results.php">click here</a&gt;&lt;br&gt;
To see different survey results, &lt;a href="/survey/Results.htm">click here</a&gt;&lt;/P&gt;&lt;p&gt;&lt;/p&gt;
</TD></TR>
</TABLE>
</BODY>
</HTML>
2. Business Logic

2.1 Online Survey, survey/survey.php

```php
<?php

// Check of the cookie exists
if (isset($_COOKIE['TunnelVisionRotationSurveyCookie'])) {
    print "<HTML><HEAD><TITLE>Tunnel Vision &amp; Rotation</TITLE>
    <BODY text="#000000" vlink="#006699" alink="#cccccc" link="#cccccc" bgcolor="#C9C999">
    <p align="center"><font size="+2" face="Verdana, Arial, Helvetica, sans-serif">You already have submitted this survey.<FONT></p>
    exit("");
}

// set the cookies
setcookie("TunnelVisionRotationSurveyCookie", $value, time()+259200); /* expire in 3 days*/

/* Connecting, selecting database */
$link = mysql_connect("127.0.0.1", "ejenin", "Jenin1975") or die("Could not connect");
mysql_select_db("ejenin_com__ejenin") or die("Could not select database");

/* Performing SQL query */
$tableName = "Survey";

// Table Attributes
$tableAttributes = "Q1 ";
$tableAttributes .= " Q2 ";
$tableAttributes .= " Q3 ";
$tableAttributes .= " Q4 ";
$tableAttributes .= " Q5 ";
$tableAttributes .= " Q6 ";
$tableAttributes .= " Q7 ";
$tableAttributes .= " Q8a ";
$tableAttributes .= " Q8b ";
$tableAttributes .= " Q8c ";
$tableAttributes .= " Q8d ";
$tableAttributes .= " Q8e ";
$tableAttributes .= " Q8f ";
$tableAttributes .= " Q8g ";
$tableAttributes .= " Q8h ";
$tableAttributes .= " Q8i ";
$tableAttributes .= " Q8j ";
$tableAttributes .= " Q8k ";
$tableAttributes .= " Q8other ";
$tableAttributes .= " Q9 ";
$tableAttributes .= " Q10 ";
$tableAttributes .= " Q11 ";
$tableAttributes .= " Q12 ";
$tableAttributes .= " Q13 ";
$tableAttributes .= " Q14 ";
$tableAttributes .= " Q15 ";
$tableAttributes .= " Q16 ";
$tableAttributes .= " Q17 ";
$tableAttributes .= " Q18 ";
$tableAttributes .= " Q19a ";
$tableAttributes .= " Q19b ";
$tableAttributes .= " Q19c ";
$tableAttributes .= " Q19d ";
$tableAttributes .= " Q19e ";
$tableAttributes .= " Q19f ";
$tableAttributes .= " Q19other ";
$tableAttributes .= " Q20 ";
$tableAttributes .= " Q21 ";
$tableAttributes .= " Q22 ";
$tableAttributes .= " Q23 ";
$tableAttributes .= " Q24 ";
$tableAttributes .= " Q25 ";
```

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StableAttributes = "", "Q26";
StableAttributes = "", "Q27";
StableAttributes = "", "Q28";
StableAttributes = "", "Q29";
// Type of survey
StableAttributes = "", "Type";

if ($_POST['Q1'] == NULL) $valuesString = "NULL";
else $valuesString .= ", " . $_POST['Q1'] . "";

if ($_POST['Q2'] == NULL) $valuesString = "", "NULL";
else $valuesString .= ", " . $_POST['Q2'] . "";

if ($_POST['Q3'] == NULL) $valuesString = "", "NULL";
else $valuesString .= ", " . $_POST['Q3'] . "";

if ($_POST['Q3'] == 5) $valuesString .= ", " . "" . $_POST['Q3other'] . "";
else $valuesString .= ", " . "NULL";

if ($_POST['Q4'] == NULL) $valuesString = "", "NULL";
else $valuesString .= ", " . $_POST['Q4'] . "";

if ($_POST['Q5'] == NULL) $valuesString = "", "NULL";
else $valuesString .= ", " . $_POST['Q5'] . "";

if ($_POST['Q6'] == NULL) $valuesString = "", "NULL";
else $valuesString .= ", " . $_POST['Q6'] . "";

if ($_POST['Q7'] == NULL) $valuesString = "", "NULL";
else $valuesString .= ", " . $_POST['Q7'] . "";

if ($_POST['Q8a'] == 1) $valuesString .= ", " . "Yes";
else $valuesString .= ", " . "No";

if ($_POST['Q8b'] == 1) $valuesString .= ", " . "Yes";
else $valuesString .= ", " . "No";

if ($_POST['Q8c'] == 1) $valuesString .= ", " . "Yes";
else $valuesString .= ", " . "No";

if ($_POST['Q8d'] == 1) $valuesString .= ", " . "Yes";
else $valuesString .= ", " . "No";

if ($_POST['Q8e'] == 1) $valuesString .= ", " . "Yes";
else $valuesString .= ", " . "No";

if ($_POST['Q8f'] == 1) $valuesString .= ", " . "Yes";
else $valuesString .= ", " . "No";

if ($_POST['Q8g'] == 1) $valuesString .= ", " . "Yes";
else $valuesString .= ", " . "No";

if ($_POST['Q8h'] == 1) $valuesString .= ", " . "Yes";
else $valuesString .= ", " . "No";

if ($_POST['Q8i'] == 1) $valuesString .= ", " . "Yes";
else $valuesString .= ", " . "No";

if ($_POST['Q8j'] == 1) $valuesString .= ", " . "Yes";
else $valuesString .= ", " . "No";

if ($_POST['Q8k'] == 1) $valuesString .= ", " . "Yes";
else $valuesString .= ", " . "NULL";

if ($_POST['Q9'] == NULL) $valuesString = "", "NULL";
else $valuesString .= ", " . $_POST['Q9'] . "";

if ($_POST['Q10'] == NULL) $valuesString = "", "NULL";
else $valuesString .= ", " . $_POST['Q10'] . "";

if ($_POST['Q11'] == NULL) $valuesString = "", "NULL";
else $valuesString .= ", " . $_POST['Q11'] . "";

if ($_POST['Q12'] == NULL) $valuesString = "", "NULL";
else $valuesString .= ", " . $_POST['Q12'] . "";

if ($_POST['Q13'] == NULL) $valuesString = "", "NULL";
else $valuesString .= ", " . $_POST['Q13'] . "";
if ($_POST['Q14'] == NULL) {
    $valuesString .= "", "". "NULL";
} else {
    $valuesString .= "", "$POST['Q14']". "";
}
if ($_POST['Q15'] == NULL) {
    $valuesString .= "", "". "NULL";
} else {
    $valuesString .= "", "$POST['Q15']". "";
}
if ($_POST['Q16'] == NULL) {
    $valuesString .= "", "". "NULL";
} else {
    $valuesString .= "", "$POST['Q16']". "";
}
if ($_POST['Q17'] == NULL) {
    $valuesString .= "", "". "NULL";
} else {
    $valuesString .= "", "$POST['Q17']". "";
}
if ($_POST['Q18'] == NULL) {
    $valuesString .= "", "". "NULL";
} else {
    $valuesString .= "", "$POST['Q18']". "";
}
if ($_POST['Q19a'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19b'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19c'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19d'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19e'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19f'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19g'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19h'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19i'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19j'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19k'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19l'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19m'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19n'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19o'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19p'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19q'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19r'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19s'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19t'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19u'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19v'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19w'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19x'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19y'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}
if ($_POST['Q19z'] == 1) {
    $valuesString .= "", "". "Yes";
} else {
    $valuesString .= "", "". "No";
}

// Type = Online
$valuesString .= "", "". "Online"

$query = "INSERT INTO ". $table_name . " (" . $table_attributes . ") VALUES (" . $valuesString . ");

// Type = Online
$valuesString .= "", "". "Online"

print "Query=" . $query . "\n" . $query;
/* Printing results in HTML */
print "<table><tr>
while ($line = mysqli_fetch_array($result, MYSQL_ASSOC)) {
  print "<tr>
  foreach ($line as $col_value) {
    print ""; $col_value; "
  }
  print "</tr>";
} print "</table>";
/* Free resultset */
mysqli_free_result($result);
/* Closing connection */
mysqli_close($link);
*/
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<title>Tunnel Vision &amp; Rotation</title>
<body>
<div align="center">
<p align="center">
Thank you!</p>
<p align="center">
Note: Your responses are confidential and will only be used anonymously in an academic study.</p>
</div>
</body>
</html>
<?php

// Check of the cookie exists
if (isset($_COOKIE['TunnelVisionRotationSurveyCookie']))
{
    print "<HTML><HEAD><TITLE>Tunnel Vision &amp; Rotation</TITLE>
    <BODY text=#000000 vLink=#006699 aLink=#000066 link=#000066 bgColor=#CCCC99>
    <P align="center"><FONT size="+2" face="Verdana, Arial, Helvetica, sans-serif">You already have submitted this survey.</FONT></P>
    exit("");
}

// set the cookies
$value = 'Tunnel Vision & Rotation';
setcookie("TunnelVisionRotationSurveyCookie", $value, time()+259200); // expire in 3 days

/* Connecting, selecting database */
$link = mysql_connect("127.0.0.1", "ejenin", "Jenin1975") or die("Could not connect");
mysql_select_db("ejenin_com__ejenin") or die("Could not select database");

/* Performing SQL query */
// Table Name
$tableName = "Survey";

// Table Attributes
$tableAttributes = 
"Q1 
Q2 
Q3 
Q4 
Q5 
Q6 
Q7 
Q8a 
Q8b 
Q8c 
Q8d 
Q8e 
Q8f 
Q8g 
Q8h 
Q8i 
Q8j 
Q8k 
Q8l 
Q8m 
Q8n 
Q8o 
Q9 
Q10 
Q11 
Q12 
Q13 
Q14 
Q15 
Q16 
Q17 
Q18 
Q19a 
Q19b 
Q19c 
Q19d 
Q19e 
Q19f 
Q19g 
Q19h 
Q20 
Q21 
Q22 
Q23 
Q24 
Q25 
Q26 
Q27 
Q28 
Q29 
...";

// Query
$tableQuery = "SELECT * FROM $tableName WHERE $tableAttributes = "$value";
// Type of survey
$stableAttributes .= "," . " Type ";
if ($_POST['Q1'] == NULL) $valuesString = "NULL"
else $valuesString = "," . $_POST['Q1'] . " ";
if ($_POST['Q2'] == NULL) $valuesString = "," . "NULL"
else $valuesString = "," . " " . $_POST['Q2'] . " ";
if ($_POST['Q3'] == NULL) $valuesString = "," . "NULL"
else $valuesString = "," . " " . $_POST['Q3'] . " ";
if ($_POST['Q3'] == 5) $valuesString = "," . " " . $_POST['Q3other'] . " ";
else $valuesString = "," . "NULL"
if ($_POST['Q4'] == NULL) $valuesString = "," . "NULL"
else $valuesString = "," . " " . $_POST['Q4'] . " ";
if ($_POST['Q5'] == NULL) $valuesString = "," . "NULL"
else $valuesString = "," . " " . $_POST['Q5'] . " ";
if ($_POST['Q6'] == NULL) $valuesString = "," . "NULL"
else $valuesString = "," . " " . $_POST['Q6'] . " ";
if ($_POST['Q7'] == NULL) $valuesString = "," . "NULL"
else $valuesString = "," . " " . $_POST['Q7'] . " ";
if ($_POST['Q8a'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No"
if ($_POST['Q8b'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No"
if ($_POST['Q8c'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No"
if ($_POST['Q8d'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No"
if ($_POST['Q8e'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No"
if ($_POST['Q8f'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No"
if ($_POST['Q8g'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No"
if ($_POST['Q8h'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No"
if ($_POST['Q8i'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No"
if ($_POST['Q8j'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No"
if ($_POST['Q8k'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No"
if ($_POST['Q8l'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No"
if ($_POST['Q8m'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No"
if ($_POST['Q8n'] == 1) $valuesString = "," . "Yes"
else $valuesString = "," . "No";
if ($_POST['Q1S'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q16'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q17'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q18'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q19a'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q19b'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q19c'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q19d'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q19e'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q19f'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q20'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q21'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q22'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q23'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q24'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q25'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q26'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q27'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q28'] == NULL)
else $valuesString .= "," . "$NULL";
if ($_POST['Q29'] == NULL)
else $valuesString .= "," . "$NULL";

// Type is Paper
$valuesString .= "," . "$'Paper';

$query = "INSERT INTO ". $tableName . " (" . $tableAttributes . ") VALUES (" . $valuesString . ");"
/*
print "Query=";
print $query;
print "\n";
$result = mysql_query($query) or die("Query failed")

$query = "SELECT * FROM " . $tableName . ";";
$result = mysql_query($query) or die("Query failed")

/* Printing results in HTML */
print "<table>\n";
while ($line = mysql_fetch_array($result, MYSQL_ASSOC)) {
print "\t<tr>\n";
foreach ($line as $col_value) {
    print "\t\t<td>$col_value</td>\n";
}
print "\t</tr>\n";
*/
print "</table>\n";

/* Free resultset */
// mysql_free_result($result);
/* closing connection */
mysql_close($link);
?>

<html><head><title>Tunnel Vision &amp; Rotation</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<body text=#000000 vLink=#006699 aLink=#cccccc link=#cccccc bgColor=#CCCC99>
<div align="center">
<p align="center"><font size="+3" face="Verdana, Arial, Helvetica, sans-serif">Thank you!</font></p>
<p align="center"><font face="Verdana, Arial, Helvetica, sans-serif" size="-1">Note: Your responses are confidential and will only be used anonymously in an academic study.</font></p>
</div>
</body></html>
2.3 Results Page, survey/results.php

```php
<?php

print "<HTML><HEAD><TITLE>Tunnel Vision &amp; Rotation</TITLE>
<BODY text=#000000 vLink=#006699 aLink=#cccccc link=#cccccc bgColor=#CCCC99>
<TABLE cellspacing=0 cellPadding=0 width=80% align=center border=0>
  <TR vAlign=top align=left><TD width=80% height=79>
    <DIV align=center><DIV align=center></DIV></TD></TR>
</DIV></TD><TD vAlign=top height=46>
  <DIV align=center><FONT face="Arial Black" color=#ffffff>
    <B><font color="#000000">Tunnel Vision &amp; Rotation</font>
    <FONT face="verdana, Arial, Helvetica, sans-serif" color=#999999 size=2><BR>
    Questionnaire Results</B></FONT></DIV></TD></TR>
</DIV><DIV></div>
</DIV></TD></TR></DIV></body></html>

$link = mysql_connect("127.0.0.1", "ejenin", "Jenin1975") or die("could not connect");
mysql_select_db("ejenin_com_.ejenin") or die("could not select database");

$alphabet = array('a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l', 'm', 'n', 'o', 'p', 'q', 'r', 's', 't', 'u', 'v', 'w', 'x', 'y', 'z');
$questions_query = "SELECT * FROM Questions ORDER BY ID;"
$questions_result = mysql_query($questions_query) or die("Query failed");
while ($questions_row = mysql_fetch_array($questions_result, MYSQL_ASSOC)) {
    print "<font face="Verdana, Arial, Helvetica, sans-serif" size=3>";
    print $questions_row['id'] . 
    print $questions_row['Question'] . "\t";
    foreach ($questions_row as $questions_col_value) {
        print $questions_col_value . "\t";
    }
    print "\n";
}

$answers_query = "SELECT * FROM Answers WHERE QuestionID = ";
$answers_result = mysql_query($answers_query) or die("Query failed");
while ($answers_row = mysql_fetch_array($answers_result, MYSQL_ASSOC)) {
    print "$answers_row['SubID'] \n";
}
```

```php
foreach ($sans_row as $sans_col) {
    print $sans_col . " of " . $sans_total . "\%";
}
```

```php
$percentage = ($sans_col / $sans_total) * 100;
printf("%2.1f\%", $percentage);
```

```php
print "</td>
</TR>
</TBODY>
</TABLE>
</hr>
</font></P>
</BODY></HTML>
```
3. Database

3.1 Database Schema, survey/mysql.php

```php
<?php
// Check of the cookie exists
// Delete cookie
setcookie("TunnelVisionRotationSurveyCookie", $value, time()-3600); // expire in 3 days*/

if (isset($_COOKIE['TunnelVisionRotationSurveyCookie']))
{
    exit("You have already submitted this survey.");
}

// set the cookies
$Value = "Tunnel Vision & Rotation";
//setcookie("TunnelVisionRotationSurveyCookie", $value, time()+259200); // expire in 3 days*/

/* Connecting, selecting database */
$Slink = mysql_connect("localhost", "ejenin", "Jenin1975") or die("could not connect");
mysql_select_db("ejenin_com") or die("Could not select database");

/* Performing SQL query */

$tableName = "Survey";
$tableName = "Questionnaire";

/*
Table Attributes
*/
$tableAttributes = " id int(11) DEFAULT '0' NOT NULL auto_increment";
$tableAttributes .= " Q1 int(2)");
$tableAttributes .= " Q2 int(2)");
$tableAttributes .= " Q3 int(2)");
$tableAttributes .= " Q3other varchar(50)");
$tableAttributes .= " Q4 varchar(50)");
$tableAttributes .= " Q5 int(2)");
$tableAttributes .= " Q6 int(2)");
$tableAttributes .= " Q7 int(2)");
$tableAttributes .= " Q8a varchar(10)");
$tableAttributes .= " Q8b varchar(10)");
$tableAttributes .= " Q8c varchar(10)");
$tableAttributes .= " Q8d varchar(10)");
$tableAttributes .= " Q8e varchar(10)");
$tableAttributes .= " Q8f varchar(10)");
$tableAttributes .= " Q8g varchar(10)");
$tableAttributes .= " Q8h varchar(10)");
$tableAttributes .= " Q8i varchar(10)");
$tableAttributes .= " Q8j varchar(10)");
$tableAttributes .= " Q8k varchar(10)");
$tableAttributes .= " Q8l varchar(50)");
$tableAttributes .= " Q9 int(2)");
$tableAttributes .= " Q10 int(2)");
$tableAttributes .= " Q11 int(2)");
$tableAttributes .= " Q12 int(2)");
$tableAttributes .= " Q13 int(2)");
$tableAttributes .= " Q14 int(2)");
$tableAttributes .= " Q15 int(2)");
$tableAttributes .= " Q16 int(2)");
$tableAttributes .= " Q17 int(2)");
$tableAttributes .= " Q18 int(2)");
$tableAttributes .= " Q18a varchar(10)");
$tableAttributes .= " Q18b varchar(10)");
$tableAttributes .= " Q19c varchar(10)");
$tableAttributes .= " Q19d varchar(10)");
$tableAttributes .= " Q19e varchar(10)");
$tableAttributes .= " Q19f varchar(10)");
$tableAttributes .= " Q19other varchar(50)");
$tableAttributes .= " Q20 int(2)");
$tableAttributes .= " Q21 int(2)");
```

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StableAttributes = "\n\n" . "q22 int(2)"
StableAttributes = "\n\n" . "q23 int(2)"
StableAttributes = "\n\n" . "q24 int(2)"
StableAttributes = "\n\n" . "q25 int(2)"
StableAttributes = "\n\n" . "q26 int(2)"
StableAttributes = "\n\n" . "q27 int(2)"
StableAttributes = "\n\n" . "q28 int(2)"
StableAttributes = "\n\n" . "q29 int(2)"
StableAttributes = "\n\n" . "PRIMARY KEY (id)"

/*
// Create Table
$query = "CREATE TABLE ". $tableName . "(" . StableAttributes . ");";

// Delete Table
$query = "DELETE FROM ". $tableName . ";";

// Drop Table
$query = "DROP TABLE ". $tableName . ";";

// Select From Table
$query = "SELECT * FROM ". $tableName . ";";

// Insert
$query = "INSERT INTO ". $tableName . "(" . $attributes . ") VALUES (" . $valuesString . ");";

//print "Query=
/print $query;
$result = mysql_query($query) or die("Query failed");

/* Printing results in HTML */

// inserting the answers of survey into a result table
$query = "SELECT * FROM Survey;";
$result = mysql_query($query) or die("Query failed");
$surveyid=0;
$questionid=0;
$answersonid=0;
$count=0;
while ($row = mysql_fetch_array($result, MYSQL_ASSOC)) {
    $count++;
    $surveyid = $row['id'];
    // Q1
    $questionid = 1;
    $answersonid = $row['Q1'];
    $resultsquery= "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID)
VALUES ('" . $surveyid . "," . $questionid . "," . $answersonid . ");";
    $res = mysql_query($resultsquery) or die("Query failed");
    // Q2
    $questionid = 2;
    $answersonid = $row['Q2'];
    $resultsquery= "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID)
VALUES ('" . $surveyid . "," . $questionid . "," . $answersonid . ");";
    $res = mysql_query($resultsquery) or die("Query failed");
    // Q3
    $questionid = 3;
    $answersonid = $row['Q3'];
    $resultsquery= "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID)
VALUES ('" . $surveyid . "," . $questionid . "," . $answersonid . ");";
    $res = mysql_query($resultsquery) or die("Query failed");
    // Q5
    $questionid = 5;
    $answersonid = $row['Q5'];
    $resultsquery= "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID)
VALUES ('" . $surveyid . "," . $questionid . "," . $answersonid . ");";
    $res = mysql_query($resultsquery) or die("Query failed");
    // Q6
    $questionid = 6;
    $answersonid = $row['Q6'];
    $resultsquery= "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID)
VALUES ('" . $surveyid . "," . $questionid . "," . $answersonid . ");";
    $res = mysql_query($resultsquery) or die("Query failed");
    // Q7
    $questionid = 7;
    $answersonid = $row['Q7'];
    $resultsquery= "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID)
VALUES ('" . $surveyid . "," . $questionid . "," . $answersonid . ");";
    $res = mysql_query($resultsquery) or die("Query failed");
    // Q8
*/
$questionid = 8;
if ($row['Q8a'] = 'Yes')
{
    $answersubid = 1;
    $resultsquery='"INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES (".$surveyid.",".$questionid.",".$answersubid.");"
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q8b'] = 'Yes')
{
    $answersubid = 2;
    $resultsquery='"INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES (".$surveyid.",".$questionid.",".$answersubid.");"
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q8c'] = 'Yes')
{
    $answersubid = 3;
    $resultsquery='"INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES (".$surveyid.",".$questionid.",".$answersubid.");"
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q8d'] = 'Yes')
{
    $answersubid = 4;
    $resultsquery='"INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES (".$surveyid.",".$questionid.",".$answersubid.");"
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q8e'] = 'Yes')
{
    $answersubid = 5;
    $resultsquery='"INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES (".$surveyid.",".$questionid.",".$answersubid.");"
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q8f'] = 'Yes')
{
    $answersubid = 6;
    $resultsquery='"INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES (".$surveyid.",".$questionid.",".$answersubid.");"
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q8g'] = 'Yes')
{
    $answersubid = 7;
    $resultsquery='"INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES (".$surveyid.",".$questionid.",".$answersubid.");"
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q8h'] = 'Yes')
{
    $answersubid = 8;
    $resultsquery='"INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES (".$surveyid.",".$questionid.",".$answersubid.");"
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q8i'] = 'Yes')
{
    $answersubid = 9;
    $resultsquery='"INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES (".$surveyid.",".$questionid.",".$answersubid.");"
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q8j'] = 'Yes')
{
    $answersubid = 10;
    $resultsquery='"INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES (".$surveyid.",".$questionid.",".$answersubid.");"
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q8k'] = 'Yes')
{
    $answersubid = 1;
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES ('".$surveyid.'','".$questionid.'','".$answersubid.'"');
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q9'] = 'Yes')
{
    $answersubid = $row['Q9'];
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES ('".$surveyid.'','".$questionid.'','".$answersubid.'"');
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q10'] = 'Yes')
{
    $answersubid = $row['Q10'];
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES ('".$surveyid.'','".$questionid.'','".$answersubid.'"');
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q11'] = 'Yes')
{
    $answersubid = $row['Q11'];
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES ('".$surveyid.'','".$questionid.'','".$answersubid.'"');
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q12'] = 'Yes')
{
    $answersubid = $row['Q12'];
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES ('".$surveyid.'','".$questionid.'','".$answersubid.'"');
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q13'] = 'Yes')
{
    $answersubid = $row['Q13'];
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES ('".$surveyid.'','".$questionid.'','".$answersubid.'"');
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q14'] = 'Yes')
{
    $answersubid = $row['Q14'];
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES ('".$surveyid.'','".$questionid.'','".$answersubid.'"');
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q15'] = 'Yes')
{
    $answersubid = $row['Q15'];
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES ('".$surveyid.'','".$questionid.'','".$answersubid.'"');
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q16'] = 'Yes')
{
    $answersubid = $row['Q16'];
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES ('".$surveyid.'','".$questionid.'','".$answersubid.'"');
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q17'] = 'Yes')
{
    $answersubid = $row['Q17'];
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES ('".$surveyid.'','".$questionid.'','".$answersubid.'"');
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q18'] = 'Yes')
{
    $answersubid = $row['Q18'];
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES ('".$surveyid.'','".$questionid.'','".$answersubid.'"');
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q19'] = 'Yes')
{
    $answersubid = 1;
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES ('".$surveyid.'','".$questionid.'','".$answersubid.'"');
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q19a'] = 'Yes')
{
    $answersubid = 1;
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswersubID) VALUES ('".$surveyid.'','".$questionid.'','".$answersubid.'"');
    $res = mysql_query($resultsquery) or die("Query failed");
}
if ($row['Q19b'] = 'Yes')
{
    $answersubid = 2;
}
$resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID) VALUES (".$surveyid." , ".$questionid." , ".$answersubid." );
$res = mysql_query($resultsquery) or die("query failed");

if ($row['Q19c'] = 'Yes')
{
    $answersubid = 3;
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID) VALUES (".$surveyid." , ".$questionid." , ".$answersubid." );
    $res = mysql_query($resultsquery) or die("query failed");
}

if ($row['Q19d'] = 'Yes')
{
    die("Query failed");
    $answersubid = 4;
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID) VALUES (".$surveyid." , ".$questionid." , ".$answersubid." );
    $res = mysql_query($resultsquery) or die("query failed");
}

if ($row['Q19e'] = 'Yes')
{
    die("Query failed");
    $answersubid = 5;
    $resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID) VALUES (".$surveyid." , ".$questionid." , ".$answersubid." );
    $res = mysql_query($resultsquery) or die("query failed");
}

// Q20
$questionid = 20;
$answersubid = $row['Q20'];
$resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID) VALUES (".$surveyid." , ".$questionid." , ".$answersubid." );
$res = mysql_query($resultsquery) or die("Query failed");

// Q21
$questionid = 21;
$answersubid = $row['Q21'];
$resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID) VALUES (".$surveyid." , ".$questionid." , ".$answersubid." );
$res = mysql_query($resultsquery) or die("Query failed");

// Q22
$questionid = 22;
$answersubid = $row['Q22'];
$resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID) VALUES (".$surveyid." , ".$questionid." , ".$answersubid." );
$res = mysql_query($resultsquery) or die("Query failed");

// Q23
$questionid = 23;
$answersubid = $row['Q23'];
$resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID) VALUES (".$surveyid." , ".$questionid." , ".$answersubid." );
$res = mysql_query($resultsquery) or die("Query failed");

// Q24
$questionid = 24;
$answersubid = $row['Q24'];
$resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID) VALUES (".$surveyid." , ".$questionid." , ".$answersubid." );
$res = mysql_query($resultsquery) or die("Query failed");

// Q25
$questionid = 25;
$answersubid = $row['Q25'];
$resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID) VALUES (".$surveyid." , ".$questionid." , ".$answersubid." );
$res = mysql_query($resultsquery) or die("Query failed");

// Q26
$questionid = 26;
$answersubid = $row['Q26'];
$resultsquery = "INSERT INTO Results (SurveyID,QuestionID,AnswerSubID) VALUES (".$surveyid." , ".$questionid." , ".$answersubid." );
$res = mysql_query($resultsquery) or die("Query failed");

// Q27
$questionid = 27;
```php
$sanswersubid = $row['Q27'];
$resultsquery = "INSERT INTO Results (SurveyID, QuestionID, AnswerSubID) VALUES ('".$surveyid."', '".$questionid."', '".$answersubid."');"
$res = mysql_query($resultsquery) or die("Query failed");

// Q28
$questionid = 28;
$sanswersubid = $row['Q28'];
$resultsquery = "INSERT INTO Results (SurveyID, QuestionID, AnswerSubID) VALUES ('".$surveyid."', '".$questionid."', '".$answersubid."');"
$res = mysql_query($resultsquery) or die("Query failed");

// Q29
$questionid = 29;
$sanswersubid = $row['Q29'];
$resultsquery = "INSERT INTO Results (SurveyID, QuestionID, AnswerSubID) VALUES ('".$surveyid."', '".$questionid."', '".$answersubid."');"
$res = mysql_query($resultsquery) or die("Query failed");

/*
 */

print "<table>
";
while ($row = mysql_fetch_array($result, MYSQL_ASSOC))
{
    print "<tr>
";
    foreach ($row as $col_value)
    {
        print "<td>$col_value</td>
";
    }
    print "</tr>
";
}
print "</table>
";

/* Free resultset */
mysql_free_result($result);

/* closing connection */
mysql_close($link);
?>
```
APPENDIX: E

IRB APPROVAL

In compliance with the Federal policy regarding research involving human subjects, this research was reviewed and approved by the Institutional Review Board (IRB) to ensure that the rights and welfare of human subjects are properly protected. The following is the reviewal approval form.
Dear PI:

Your IRB application referenced above has been approved for one calendar year. Please make note of the expiration date indicated above. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved projects are subject to monitoring by the IRB. If you have questions about the IRB procedures or need any assistance from the Board, please contact Sharon Bacher, the Executive Secretary to the IRB, in 415 Whitehurst (phone: 405-744-5700, sbacher@okstate.edu).

Sincerely,

Carol Olson, Chair
Institutional Review Board
VITA

Rami Nafe Al Hasan

Candidate for the Degree of

Master of Science

Thesis: A STUDY OF TUNNEL VISION AND ROTATION AS ASPECTS OF WEB SITE VISIBILITY

Major Field: Computer Science

Biographical:

Personal Data: Palestinian, born in Kuwait on September 21, 1975, moved to Jordan in 1983.

Education: Received Bachelor of Science in Computer Science from Applied Science University, Amman, Jordan in September 1998. Completed the requirements for the Master of Science degree in Computer Science at the Computer Science Department at Oklahoma State University in May 2004.