Web Based Application for Driving School

by

Norhaslinda binti Abu Bakar

Dissertation submitted in partial fulfilment
of the requirements for the
Bachelor of Technology (Hons)
(Information System)

DECEMBER 2005

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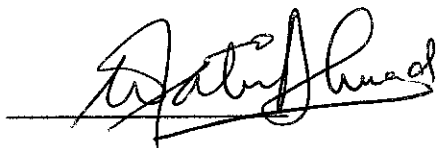2) JT/35 -- Thesis

CERTIFICATION OF APPROVAL

Web Based Application for Driving School

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A project dissertation submitted to the
Information System Programme
Universiti Teknologi Petronas
in partial fulfillment of the requirements for the
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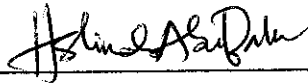(INFORMATION SYSTEM)

Approved by,

(Dr.Wan Fatimah Wan Ahmad)

UNIVERSITI TEKNOLOGI PETRONAS
TRONOH, PERAK
December 2005

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

NORHASLINDA BINTI ABU BAKAR

ACKNOWLEDGEMENT

First and foremost, I would like to thank to the Almighty Allah for giving me the strength, skill, knowledge, patience and good health in producing this report and system. The greatest pleasure in writing such report is when it comes to acknowledge the efforts of many people whose name may not appear on the cover, but without their handwork, cooperation, support and understanding, producing this report would be impossible.

The highest gratitude goes to my supervisor, Dr.Wan Fatimah Wan Ahmad for her patience and wisdom in sharing everything in a way that can helped me to proceed with this project. The same goes to other lecturers that have spared their times in sharing information and useful tips along the way.

Special thanks to all the friends and colleagues who are also collaborate with me and giving help during the development of this project. Without the help, this project may not run smoothly and finish until its completion. Not to forget, the highest gratitude to my parent and family for giving a lot of inspirations, encouragement and support.

Lastly, warmest gratitude grants to all participants of the survey in helping doing the informal interview and answering the questionnaires. Ideas and comments that has been given is really appreciated. No better words to say but thank you for the cooperation and May God bless you all.

ABSTRACT

Web Based Application for Driving School is actually a transformation from the conventional way of learning driving lesson in Malaysia to a web based application. The objective is to help Malaysian understand about driving course by having online courses for their driving lesson. As technology changes everything in Malaysia has been changed according to the latest technology but not for driving lesson. While Malaysia still use the conventional way and there is no any online course to learn driving lesson in this country.

The development of this system will focus on human interaction with computer by using interactive controls like buttons and links, that when clicked, it will bring that information to the screen. For the data collection, a study has been conducted to get the relevant information and survey from those whose has undergo the driving course and also those who will be taking it. Principals of interactive design have been used in order to understand the user and to create a functional interactive project that tailored to their needs. Multimedia software also will be used in order to accomplish the objective of the system.

The output from the project will be the implementation of real system that can be used by the people who plan to take driving license. With the prototype developed, it is hope that the learning technology for driving course will be changes and increase the quality of result of the student.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

Study on the topic given has been done and there is none of the system that related to the topic has been implementing or uploaded to the internet in Malaysia. Country like United States has already implemented the system that enables them to learn about road symbols and have some demo about traffic issue. Although the learning technique is more or less similar like the conventional way which is using a book but by having this system user will less tensed and easy for them to learn because interactive system offers new opportunities of control to the user.

For the states that have been implementing this kind of driving lesson, they have offered to the candidates an online test. Each candidate that plan to undergo this lesson they need to pay for several amounts of money before they can attend the online class. After completing all the lessons, candidates can have an online test and they will get their driving license direct to their house. This kind of driving lesson is very popular in United States because they want to simplify the task of having driving license. One of the online driving schools in California also said that this may help those who live out of states and also having a work scheduling problem. By having this system, candidates who plan to take a driving lesson can complete this course anytime and anywhere. This is much more different on what Malaysian has to do once they plan to take a driving license.

Figure 1.1 shows the flow of having driving license in Malaysia. At present time, people that have a plan to take driving license have to register at any of driving school available in Malaysia. Once registered, they will be given a book with 500 questions in it about driving on the roads. This book covers all the rules for driving in Malaysia and has to be memorized. Those who registered will also have to attend a five hour lesson at an approved driving school. Once user confident with all the correct answers to the 500 questions they are ready to take the first (written) test. This written test has 50 questions and candidates have to answer at least 42 correctly. Once they pass this they are allowed to drive a car with "L plates" on them which valid for three months. It can be extended for a small fee if candidates are still not ready to take the test. Candidates can only learn to drive at a driving school using one of the driving school cars.

The driving school will then teach practically to the candidates how to drive in a correct way which must be for a minimum of ten hours. After all the phases that the candidates gone through then only they can get their driving license. Hence, a new system called Web Based Application for Driving School is suitable to develop as it to be used by all the people who plan to take driving license in order for them to do a few tests before sit for the written test with *Department of Motor Vehicle.*

The Web Based Application for Driving School will be a web based system and will be using an interactive design process as one of the ways to make the whole project more manageable and easy to understand.
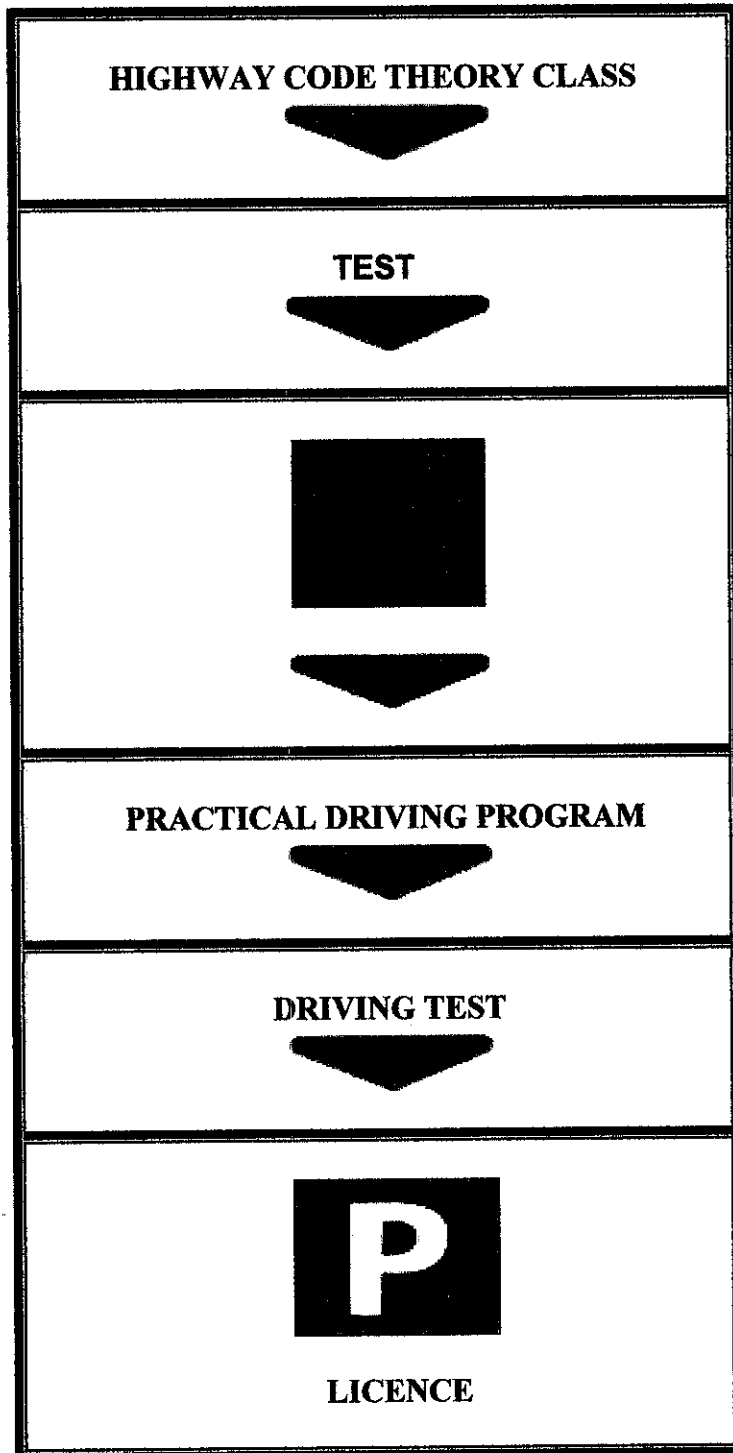
Figure 1.1 Flow to have driving license in Malaysia

1.2 Problem Statement

As stated above, there is no online course to take driving license test in Malaysia. Maybe there is no realization from the community on how easy if Malaysia has the online learning driving course. This research also has been supported with the questionnaire feedback that has been given by the student of University Technology Petronas. From the questionnaire feedback, 90 percent from the student are agree if there is an online driving course in Malaysia (refer to Appendices for the sample questionnaire). Using the conventional way, user has to read the books and do the samples test inside it. They have to check the test answer by themselves in order to know their level of understanding toward driving course. This method takes a lot of time and also not effective because student may be cheating during the test. In some cases there might be mistakes during checking the answer and student may misinterpret the definition of the road symbols that they read from the book. But by having these interactive course it will automatic calculate the mark for them just by clicking a button. Student can also experience some traffic issue through the simulation offered by the course that they can't have it if they are using the conventional way which is static and hard to understand.

The online course that will be developed will have a few difference from what has been offered in other states because *Department of Motor Vehicle* in Malaysia still using the conventional way of having driving license which needed candidates to sit for ten hours of practical lesson on road. The online course can only help the candidates to do a few preparations before they attend the real class. All the road symbols and sample test in the system have to be done in Bahasa Malaysia in order to avoid confusion at the candidates. It is because the test that will be conduct by the *Department of Motor Vehicle* will be fully in Bahasa Malaysia so by having a sample test in Bahasa Malaysia it will help the candidates to be more understood and well prepared.

1.2.1 Significant of the Project

Web Based Application for Driving School will be the first online driving lesson application in Malaysia. It will offer the candidates the new way of driving lesson that allow them to learn about Highway Code in Malaysia. With the developed prototype, it will show that web application can help to improve the learning styles for the driving course. Through this system user can easily check the test answer and have an example of traffic issue through simulation that will be offered by the system. Besides that, the use of JavaScript in the system will adds a dynamic component to an HTML page by providing it with objects that will change depending on what the user does with the mouse, keyboard or some other input device. From being a static page with no dynamic components, a web page with JavaScript is transformed into a page with not only a dynamic elements, but also elements that are controlled by the viewer. It also enables the designer to program the design to be interactive in order to responses to the viewer's action.

1.3 Objective and Scope of Study

At the end of the study there are several objectives need to be achieved. The objectives are:-

1. To develop a web based system for those who plan to have driving lesson course.

2. To improve the standard of driving lesson in Malaysia by having an online driving course.

3. To implement the Shneiderman's Golden Rules of Interface Design through the website.

The project will focus on the developing of an interactive web based system for taking driving lesson. This system will be used as an exercise for them before they really go for the real test with *Department of Motor Vehicle*. There are certain criteria that need to be considered in order to develop a good interactive system such as orienting the user to the interface. This is one of the ways of convincing users to interact with the system because these first screens are often the only chance to show the user and the expectation toward the system.

Usability and functionality of the system should also be considered because usability refers to how easy an interface design is to understand and use while functionality refers to how well the interactive controls perform on the target platform. The integration on how the JavaScript integrate in Hypertext Markup Language (HTML) pages will also be determined. By using JavaScript a character of the page changes dramatically. Page will become more interactive and also can responses to the user's actions. For the system, there will be three sections implemented in the system. All the road symbols in Malaysia will be put at one section, course demo about traffic issue will be put at another section and for the last section there will be a quick test or quiz that consist the entire question about driving on the roads. After completing all the three phases and user has satisfied with their result then they can proceed by undergo the real driving test with *Department of Motor Vehicle.* At the end, the system will be developed based on the guidelines getting from the research and study.

1.3.1 The Relevancy of the Project

This project is definitely related to Information Technology. The development of the system involves the use of interactive method using Macromedia Dream weaver and Flash. All the knowledge related to interactive multimedia will be applied and also some study on how to set up a web server for the development need to be done. All the information and data that involve the skills of using IT tools will also be documented.

This system is also related to human computer interaction by testing the human memory. The sample test that will be provided in the application will test the candidates how much can they remember the on the Highway Code. Human eye allow the memory to interpret the data that they seen. By having visual perception such as perceiving size, color and the brightness of the object, human eye are capable to store all the data at their short term memory. A few times of reading plus the understanding on the driving course will then process the memory to be stored in the long term memory. Once the candidates have achieved this level of memory, they are actually ready to sit for the real class.

1.3.2 Feasibility of the Project within the Scope and Time frame

For this project a responsibility to develop a web based system has been given. Using the system, people who plan to take driving license can learn and have experience by themselves on case related to traffic issue. Test regarding understanding the road symbols and rules can be done several times until students have a confident to sit for the real test. This system will be used by anyone who plans to take driving license in Malaysia. This system should be completed within the timeframe given.

CHAPTER 2

LITERITURE REVIEW AND THEORY

2.1 Defining interactivity

Interactivity is the combination of different types of media into a digital presentation that allows the user some degree of interaction [1]. Some of the media used in digital presentation are typography, graphics, animation, video, sound, and virtual reality (a simulated environment with pictures, sound, and sensory input that surround and respond to a viewer's action). One of the reason why interactivity is so powerful is that many traditional activities such as reading, talking or watching a video can now be performed on the computer. User can read a multimedia book onscreen that combines text, animation, and sound to tell the story. These new interactive experiences do not replace the traditional activities but it offer individuals more options in how to access information.

2.2 Brief description about JavaScript

Hypertext Markup (HTML) pages are essentially pages that describe where text and graphics are placed on a web page. Once placed, the page stays as the HTML code has described it, and other than links, everything will stay put. JavaScript adds a dynamic component to an HTML page by providing it with objects that will change depending on what the user (page viewer) does with the mouse, keyboard, or any other input device. The user's action has created a response from the web page. There is no special processor or compiler needed to create JavaScript code. What is needed is just a text editor such as Note Pad. JavaScript programs or scripts are read generally by Netscape Navigator or Internet Explorer. The browsers read or parse the script to interpret what they mean [2].

2.3 Study on human computer interaction

Human computer interaction is actually how people use the computers to accomplish work [3]. User's task are studied and then supported by computers, which can in turn affect the nature of the original task and cause it to evolve. For example, word processing has made it easy to manipulate paragraphs and also reorder documents, allowing writers a completely new freedom that has affected writing styles. Human can easily understand and captured on what they have seen, heard and touched. Memory will process the information and store it for a sometimes.

2.4 Study on driving test in Malaysia

Malaysia has still followed the conventional way of driving course. Read a book and memorize all the symbols, do written test and sit for the test with *Department of Motor Vehicle* before they really have their driving license [4]. At this stage, Malaysian really needs to be exposed with this interactive learning of driving course. To develop the system, a website from states like California and Florida that has implemented it has been referred [5]. User can learn all the theory about driving by having this system and once they satisfied they can sit for the practical test with *Department of Motor Vehicle*.

2.5 Interactive driving lesson in other states.

Country like United States has already implemented an online driving lesson [6]. They have offer an online driving course that requires the candidates to pay some amount before they can undergo the course. Candidates can even get their driving license direct to their house once they have passed the entire test. This kind of driving lesson is actually enable the candidates to take their driving lesson at anytime and anywhere that they want to. They don't have a fix time for the class and candidates that out of the state.

2.6 Benefit of online learning

Online education can be defined as an approach to teaching and learning that utilizes Internet technologies. This includes technology that supplements traditional classroom training with web based components and learning environments where the educational process is experienced online. Some of the benefits of learning online are:-

- Students experience a sense of equality.
- Accommodate different learning styles.
- Provide opportunities for student to explore
- Encourage student to study by having additional rehearsal time.
- Provide just in time methods to assess and evaluate student progress.

The integration of web-based learning has added a value to traditional education. The advantages of online learning make a significant impact in today learning process and, as technology evolves, online learning promise to deliver even greater benefits in the future [7].

2.7 Design for interaction

Moving through the levels of interactivity in a project requires a clear navigation scheme. Navigation is the process by which a user explores all the levels of interactivity, moving forward, backward and through the content and interface screens. For the project, user will navigate by clicking on interactive controls that will be offer in the project such as buttons, image maps, and hypertext. According to Lisa Graham (1999), a good interactive design principle is a design that has a clear navigation system that allows the user to understand where they are at within the system at all times.

2.8 Shneiderman's Eight Golden Rules of Interface Design

Shneiderman's eight golden rules provide a convenient and brief summary of the key principles of interface design [8]. They are intended to be used during design

but can also be applied to the evaluation of the systems. Shneiderman's eight golden rules are:-

- *Strive for consistency* in action sequences, layout, terminology, command use and so on.

- *Enable frequent users to use shortcuts*, such as abbreviation, special key features and macros, to perform regular, familiar action more quickly.

- *Offer informative feedback* for every user action, at a level appropriate to the magnitude of the action.

- *Design dialog to yield closure* so that the user knows when they have completed the task.

- *Offer error prevention and simple error handling* so that, users are prevented from making mistakes and if they do, they are offered clear and informative instructions to enable them to recover.

- *Permit easy reversal of actions* in order to relieve anxiety and encourage exploration, since the user knows that he can always return to the previous state.

- *Support internal locus of control* so that the user is in control of the systems, which responds to his actions.

- *Reduce short-term memory load* by keeping display simple, consolidating multiple page displays and providing time for learning action sequences.

2.9 Navigation Design

A good navigation design will clarify the content and interactive structure, enhance the document's usability, and accommodate the user's needs. A good navigation design helps the user understand the functions and enhances the usability of the interface by:-

- Connecting any two points in the content with the shortest possible paths.

- Avoiding the use of multiple or redundant paths to the same information from the same place.

- Using easily recognizable images and icons as interactive controls.

- Using interactive controls that are simple and straightforward and that react consistently.

2.10 Top ten new mistakes of web design.

To design a good web design, there are basically ten things that need to avoid. According to Jacob Nielson [9], there are top ten design mistakes that have been found in many websites. There are:-

- *Breaking or slowing down the back button.*

  -The back button is the lifeline of the Web user and the second-most used navigation feature (after following hypertext links). Users happily know that they can try anything on the Web and always be saved by a click or two on back to return them to familiar territory.

- *Opening new browser windows.*

  - Designers open new browser windows on the theory that it keeps users on their site. But even disregarding the user-hostile message implied in taking over the user's machine, the strategy is self-defeating since it disables the Back button which is the normal way users return to previous sites. Users often don't notice that a new window has opened, especially if they are using a small monitor where the windows are maximized to fill up the screen. So a user who tries to return to the origin will be confused by a grayed out Back button.

- *Non-Standard Use of GUI Widgets.*

  -Consistency is one of the most powerful usability principles: when things always behave the same, users don't have to worry about what will happen. Instead, they know what will happen base on earlier experience.

- *Lack of Biographies.*

  -it is much more common for a reader to want to know more about an author (including finding the writer's other articles) than it is for the reader to want to contact the author - sure, contact info is often a good part of the biography, but it should not be the primary or only piece of data about the author .it breaks the conventions of the Web when clicking on blue underlined text spawns an email message instead of activating a hypertext link to a new page; such inconsistency reduces usability by making the Web less predictable.

- *Lack of Archives.*

  -Old information is often good information and can be useful to readers. Even when new information is more valuable than old information, there is almost always some value to the old stuff, and it is very cheap to keep it online.

- *Moving Pages to New URLs.*

  -Anytime a page moves, any incoming links from other sites has been break.

- *Headlines That Make No Sense Out of Context.*

  - Headlines and other micro content must be written very differently for the Web than for old media: they are actionable items that serve as UI elements and should help users navigate.

- *Jumping at the Latest Internet Buzzword.*

  - Most Internet buzzwords have some substance and might bring small benefits to those few websites that can use them appropriately. Most of the time, most websites will be hurt by implementing the latest buzzword. The opportunity cost is high from focusing attention on a fad instead of spending the time, money, and management bandwidth on improving basic customer service and usability.

- *Slow Server Response Times.*

  - Slow response times are the worst offender against Web usability

- *Anything That Looks Like Advertising.*

  - Selective attention is very powerful, and Web users have learned to stop paying attention to any ads that get in the way of their goal-driven navigation. Unfortunately, users also ignore legitimate design elements that look like prevalent forms of advertising. Therefore, it is best to avoid any designs that look like advertisements.
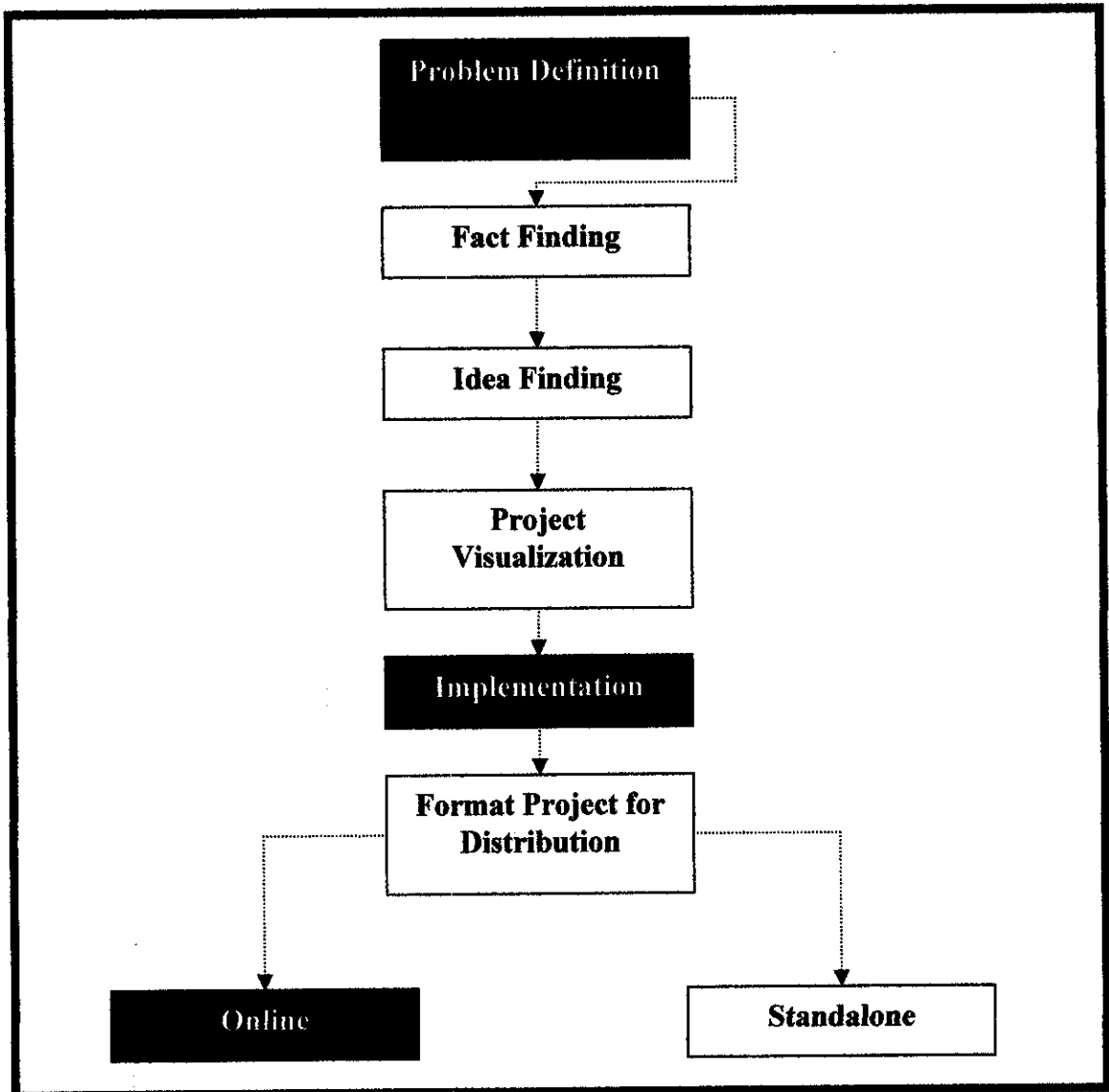
CHAPTER 3

METHODOLOGY / PROJECT WORK

3.1 Procedure Identification

Methodology is the steps taken in undergoing the research and project work. As for this project an interactive design process techniques will be used. This is one of the ways to make the whole project more manageable and easy to understand that there is an interactive design process that can be followed. Figure 3.1 shows a schematic of the interactive design process. By following each step in the process, process of gathering and organize critical information can be done more effectively. The interactive design process may be broken down into five major steps: problem definition, fact finding, idea finding, project visualization and implementation.

3.1.1 Problem Definition

The problem definition step begins when task has been assigned with the topic which is Web Based Application for Driving School. A problem definition requires an analysis on the topic given by examine the goals and objectives, define the product niche and identify limitation (like time and budget). During the problem definition stage, identification on type of distribution format is needed to what will best fulfill project goals. In general, there are two main categories of distribution formats for interactivity: standalone multimedia formats such as CD-ROMs or kiosks and online format such as Internet, Intranet or World Wide Web pages. Designer needs to identify the user and their technological requirements in the fact finding stage.

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Figure 3.1 A schematic of the interactive design process

3.1.2 Fact Finding

Fact finding is a follow up to the problem definition stage that involves researching the project further. Fact Finding includes:

- Learning about the user's needs and area of concentration
- Surveying other projects with similar goals and objectives
- Researching the user and their requirement
- Targeting technological limitations that may affect the design

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Further fact finding is needed in order to:

- Analyze design resources by determining what existing equipment can be used to create the interactive project
- Choose the authoring tools (the program used to create the interactive documents)
- Determine skills and needed to complete the project on time.

3.1.3 Idea Finding

Idea finding is the search for a working interactive visual layout with clear navigation controls. A few possible layouts for screen elements and the look of navigation controls have been done at this stage. Web site from states that have implemented the project has been referred in order to have basic idea for the project implementation.

3.1.4 Project Visualization

The earliest part of the project visualization stage is the development and critical evaluation of comprehensives. Some elements that designers create comprehensives for a title screens, navigation controls, and sample screen layout. Once the group of comprehensives fulfills the project goals and criteria, the next step in the project visualization is to make storyboards.

3.1.5 Implementation

The implementation process is where sample screens and storyboards are translated into a functional interactive project. Prototypes (preliminary on-screen version of project) will be developed, usability testing (testing that checks the overall user friendliness of the document) will be conduct, and progressively refine the system. The implementation process ends with the final interactive document ready for mastering (the creation of the master digital file used to make copies) or online distribution.

3.2 Methods

Table 3.1 shows the method that has been used and applied during the development of Web Based Application for Driving School.

Table 3.1 Method Use for Each Task

Task	Method
Problem Definition	*Questionnaires* • A set of question has been prepared to be given to the respective people to get their respond toward the proposed system. The objective of doing the questionnaires is basically to gather as much information on the system requirement and problem statement. *Collecting Documents* • Books on learning driving in Malaysia will be using in order to know the right Highway Code and issue on the road.
Fact Finding	*Informal interview* • The interview will be conducted among the candidates that going to take driving license. This actually to know their requirement or needs that they want to have inside the Web Based Application for Driving

	School. By doing this, the system will be more understandable and close to the user.
Idea Finding	*Observations* • Observation on the driving lesson process in Malaysia will be done. The information getting from these tasks can help in analyzing the requirement and design the system interface.
Project Scheduling	*Gantt Chart* • From the project development, a Gantt chart has been done in order to have a proper plan on the work and task with a given time line. Microsoft Project has been used to develop the gnat Chart.
Construct / Coding	*JavaScript and HTML* • Codes from JavaScript and HTML will be using in order to develop the proposed system.

3.3 Tools

In developing this project tools are used to ensure it wills successfully complete. Two types of tools have been identified and have been categorized into two categories which are hardware and software. It also requires 2 types of application which is:-

- Internet Explorer Browser – web browser that used for testing and viewing the application.
- Apache Web Server - A free downloaded web server.

3.3.1 Hardware

Table 3.2 shows the hardware requirement of the computer for the development of Web Based Application for Driving School.

Table 3.2 Minimum Hardware Requirement

Device	Requirement
Operating System	Microsoft Windows XP
Processor	Intel Pentium 4 2.40 GHz
Memory	512MB
Disk Space	20GB of free space
Other peripherals	Screen (1027 x 768), Keyboard, mouse, CD-ROM drive

3.3.2 Software

Table 3.3 shows the software used throughout the development of Web Based Application for Driving School.

Table 3.3 Software Requirement

Software	Function
Macromedia Dreamweaver MX	• This web development software will be used to create the web pages for the system. It has more features compare to other software such as HTML Kit and FrontPage.

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|	
Macromedia Flash MX	• Software that gives the power to produce visually compelling drawings, smooth animations and complete interactivity.
Java Script	• A programming language that gives the programs responses to the user's action.
Microsoft Office Word and Excel 2003	• This software used to writing the reports, creating tables and creating the Gantt chart for the project timeline.
Adobe Photoshop CS2	• This software is used to edit all the Highway Code and pictures needed for the application.
Microsoft PowerPoint 2003	• This software will be used for preparing the presentation slides later during the oral presentation.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Results and Findings

This chapter will conclude all the findings and research that has been done within the time frame given from the starting of the project. Most of the findings were gathered through the reference books that related to interactive course and online system and also Internet. These two types of findings have given a great input and information for the implementation of the project. The effectiveness of this project is the main purpose during the implementation since it is the first online driving lesson in Malaysia. People interaction with computer and how to make them understand with the course has also been considered.

4.2 System Flow

Figure 4.1 is actually the flow of the application. At the index page, candidates can choose three options either want to proceed to the home in order to know the details about the application or test their eye with the color blind test. Or else the candidates can straight go to the others page if they want to view the list of driving school that nearest to their place. This system doesn't require any login button since it is just a free website that will be going to be an introduction to the Malaysian about the new way of driving lesson. All the Highway Code that is available on the web site is the Highway Code that available in Malaysia. The meaning of each symbol has been taken from a book that has been produced by *Department of Motor Vehicle*. All the interactive case studies and sample test is also something that has been taken from Malaysian driving scenario plus with a help from the book of *Department of Motor Vehicle*. With all the material and
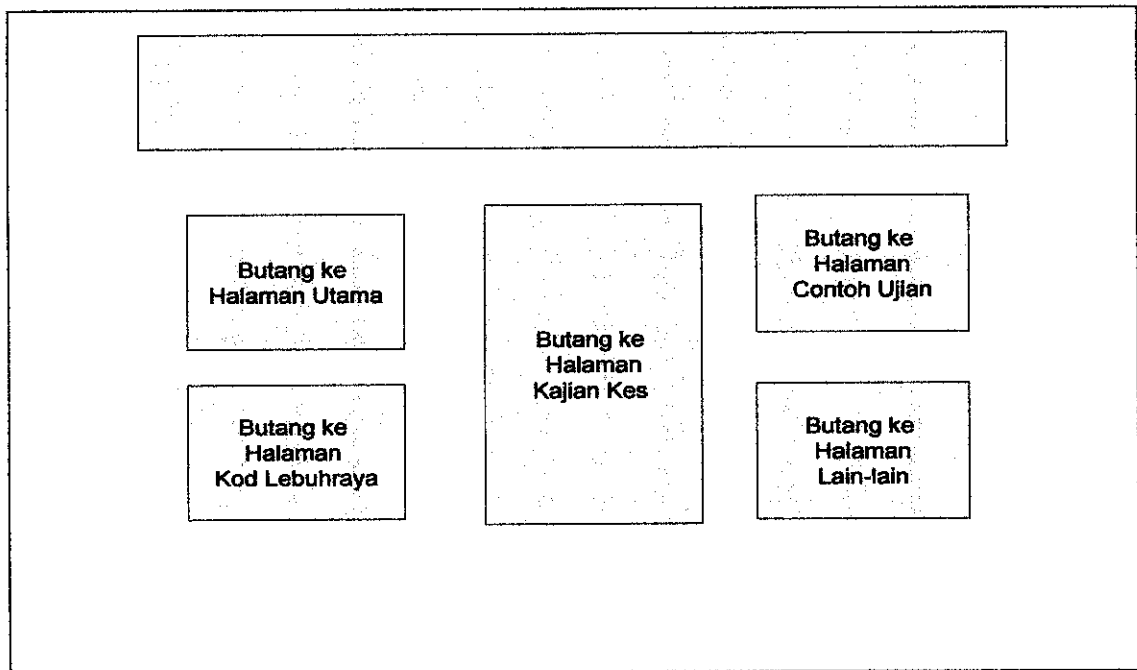
information that has been referred, this application will only based on Malaysian driving course and suitable to any level of user in Malaysia that has a basic background of using computer. No fees or registration are needed since it is just a course that will help the candidate before they sit for the real test.
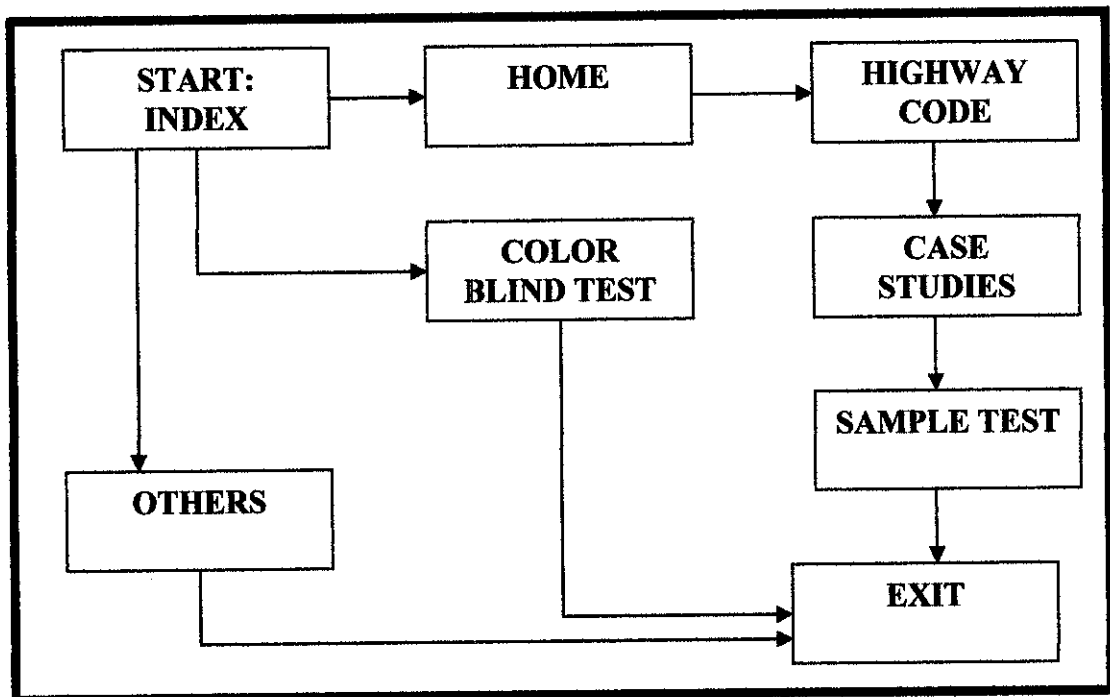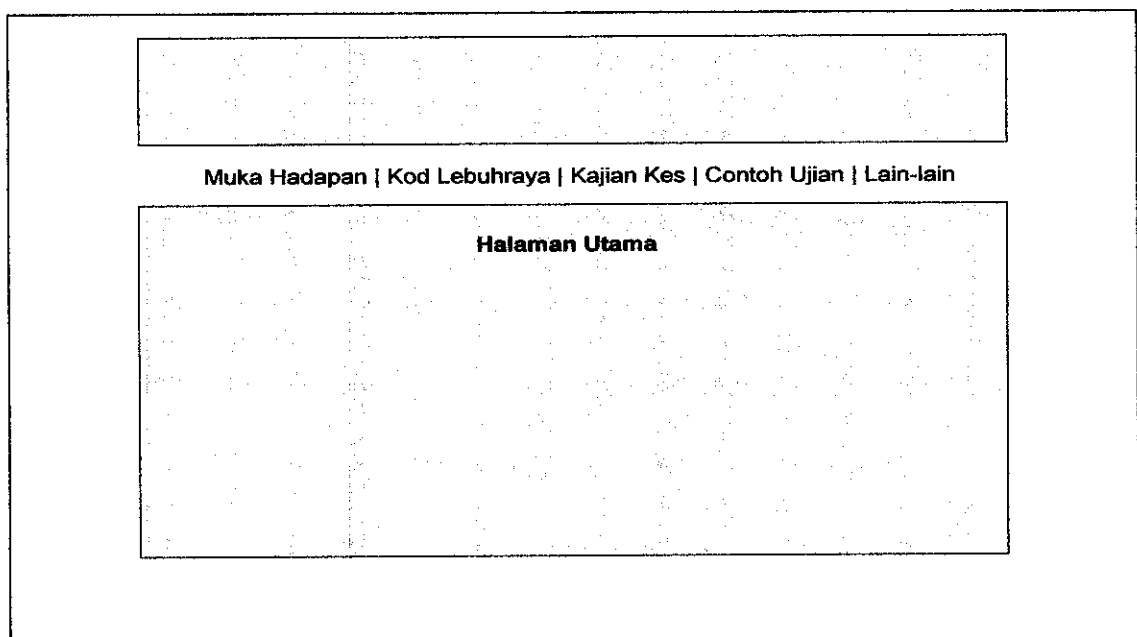

Figure 4.1 Web Based for Driving School Flow Chart
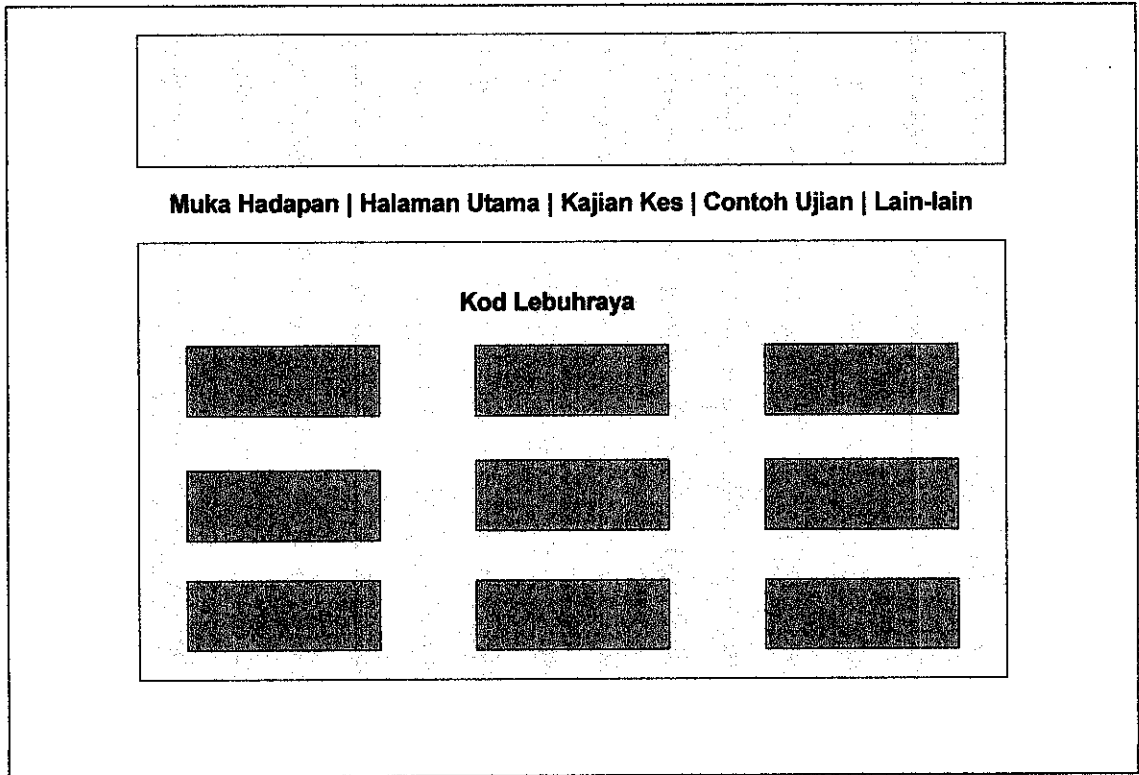
4.3 System Development

Web Based Application for Driving School consist about 19 pages. The main parts of the system are the case studies, highway codes, color blind test and also sample test. This section of report will present a storyboard for the Web Based Application for Driving School.
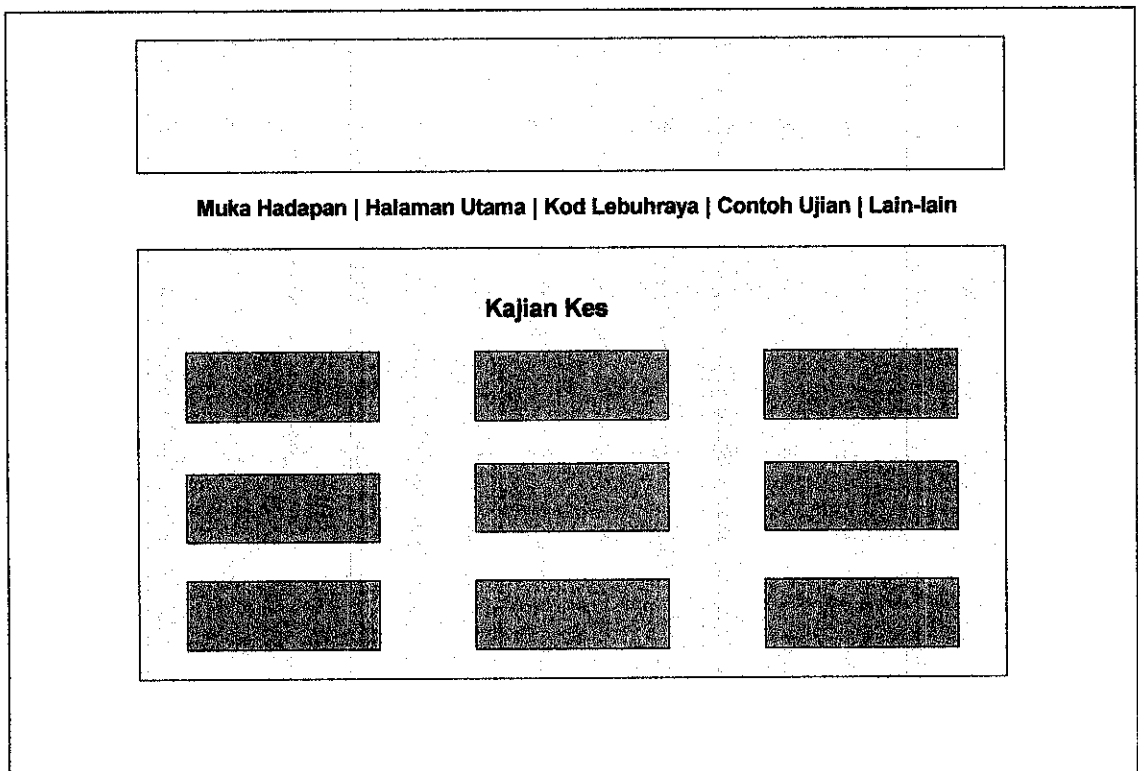
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│   └─────────────────────────────────────────────────┘   │
│                                                         │
│   ┌──────────────┐  ┌──────────────┐  ┌──────────────┐  │
│   │              │  │              │  │  Butang ke   │  │
│   │  Butang ke   │  │              │  │  Halaman     │  │
│   │ Halaman Utama│  │              │  │ Contoh Ujian │  │
│   └──────────────┘  │  Butang ke   │  └──────────────┘  │
│                     │  Halaman     │                    │
│   ┌──────────────┐  │  Kajian Kes  │  ┌──────────────┐  │
│   │  Butang ke   │  │              │  │  Butang ke   │  │
│   │  Halaman     │  │              │  │  Halaman     │  │
│   │ Kod Lebuhraya│  │              │  │  Lain-lain   │  │
│   └──────────────┘  └──────────────┘  └──────────────┘  │
└─────────────────────────────────────────────────────────┘
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Figure 4.2 Main Screen

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┌─────────────────────────────────────────────────────────┐
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│   │                                                 │   │
│   └─────────────────────────────────────────────────┘   │
│   Muka Hadapan | Kod Lebuhraya | Kajian Kes | Contoh Ujian | Lain-lain │
│   ┌─────────────────────────────────────────────────┐   │
│   │              Halaman Utama                      │   │
│   │                                                 │   │
│   │                                                 │   │
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│   └─────────────────────────────────────────────────┘   │
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```

Figure 4.3 Home

25

Muka Hadapan | Halaman Utama | Kajian Kes | Contoh Ujian | Lain-lain

Kod Lebuhraya

Figure 4.4 Highway Code

Muka Hadapan | Halaman Utama | Kod Lebuhraya | Contoh Ujian | Lain-lain

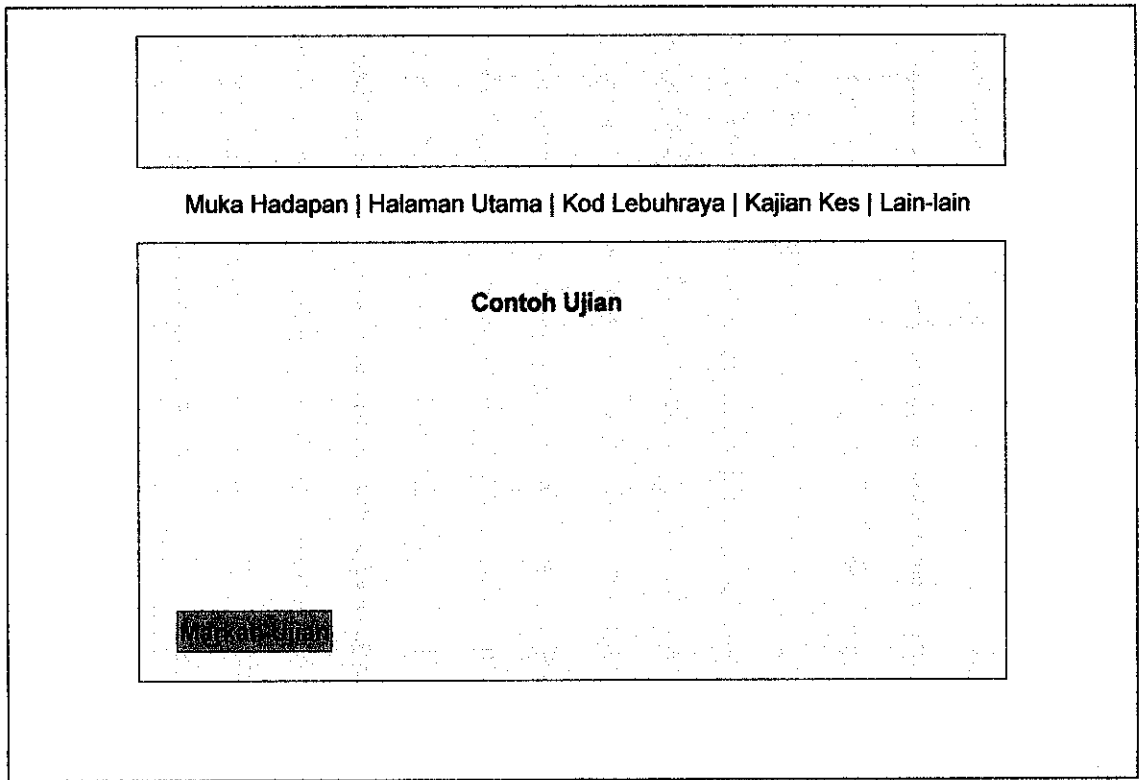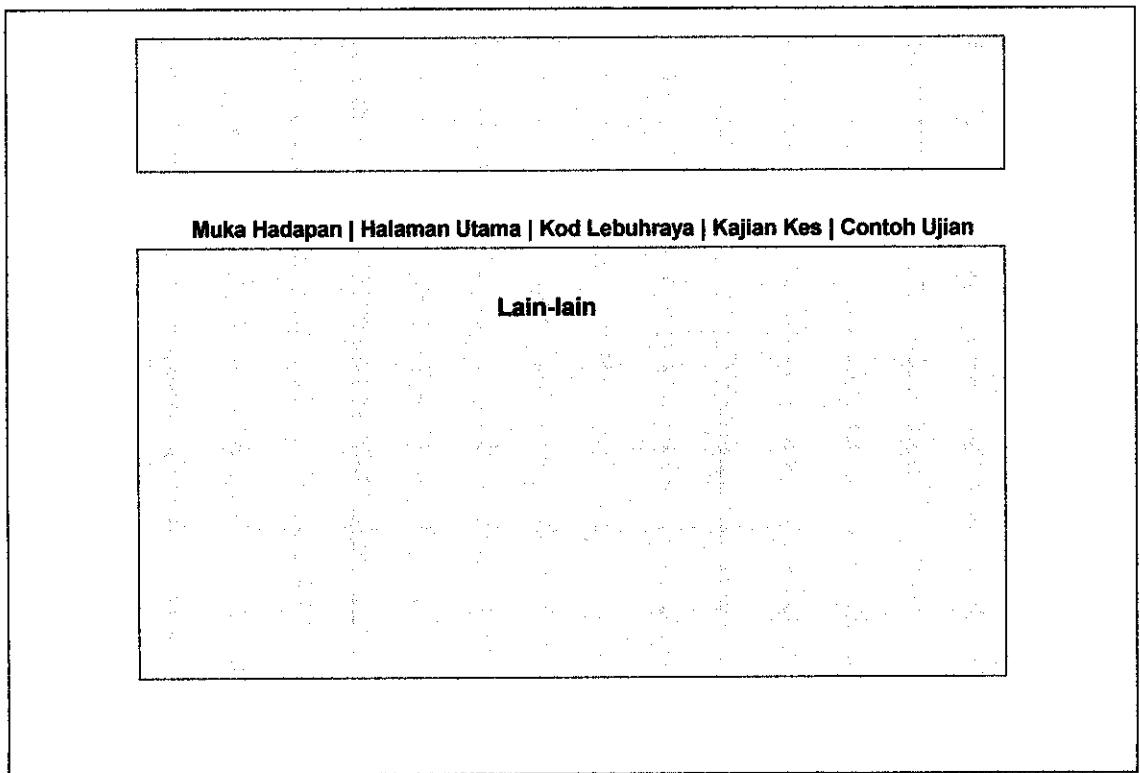**Kajian Kes**

Figure 4.5 Interactive Case Studies

26

Figure 4.6 Sample Driving Test

Figure 4.7 Others

4.4 System Description

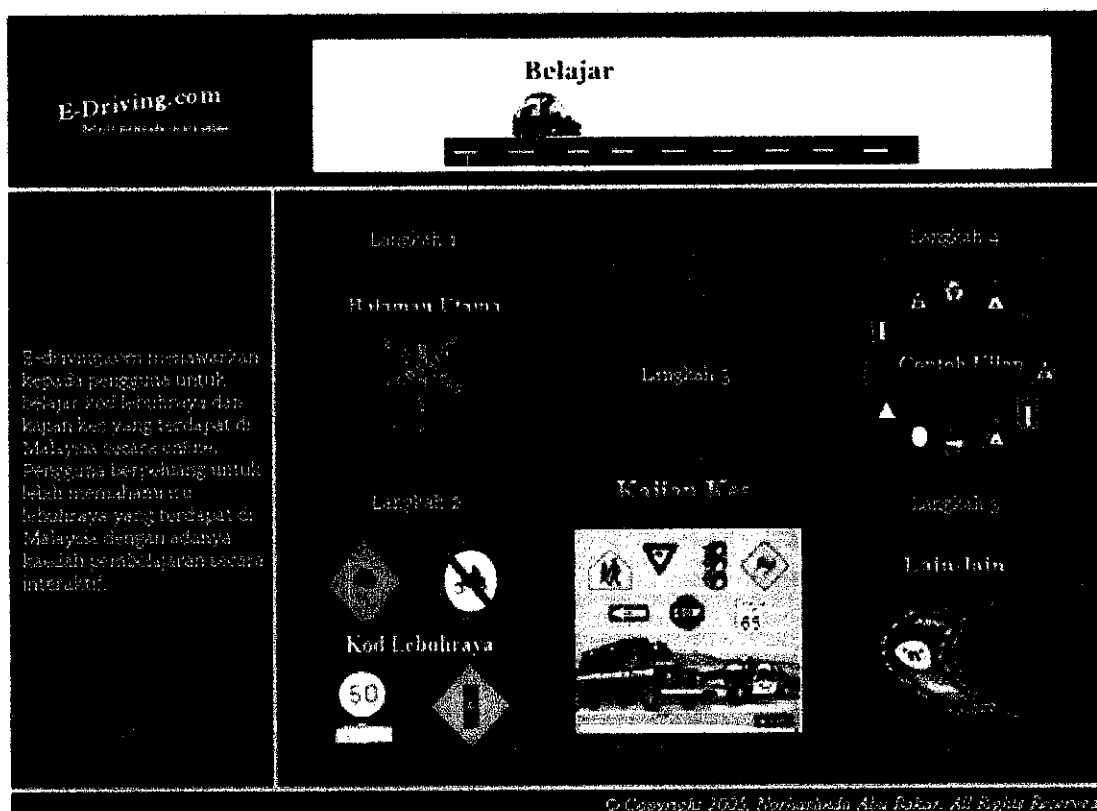**Figure 4.8 Snapshots of the Welcome Page**

Figure 4.8 shows the snapshot of the welcome page of the Web Based Application for Driving School. On the left side of the page, it tells user the objectives of doing the application. For this page, one of the principles of affecting learn ability has been used which is familiarity. All the pictures that have been used are actually very familiar to the user. *Familiarity* means that the extent to which user's knowledge and experience in other real-world or computer-based domains can be applied when interacting with a new system. Before they click to the page, user can actually predict what they will experience on the page. One of Shneiderman's Eight Golden Rules of Interface Design also has been used which is strive for consistency. All the pictures are consistent and will be used for the entire application. It is actually to avoid user confusion during the learning process. The entire link that has on the page will link the user to the particular page that related to it.

Figure 4.9 Home Page

The Home button will link the user to the Home Page as shown in Figure 4.9. All the hypertext at the page is actually a shortcut for the user to go the other page by applying the Shneiderman's rules which is enable frequent users to use shortcuts.

Figure 4.10 Highway Code

If the user click to the Highway Code button, the page will link them to this page (refer Figure 4.10). This page consists of 60 highway codes that have been separated into 6 pages. It is actually to avoid cramping all the codes in one page because it may affect user attention during the learning process.
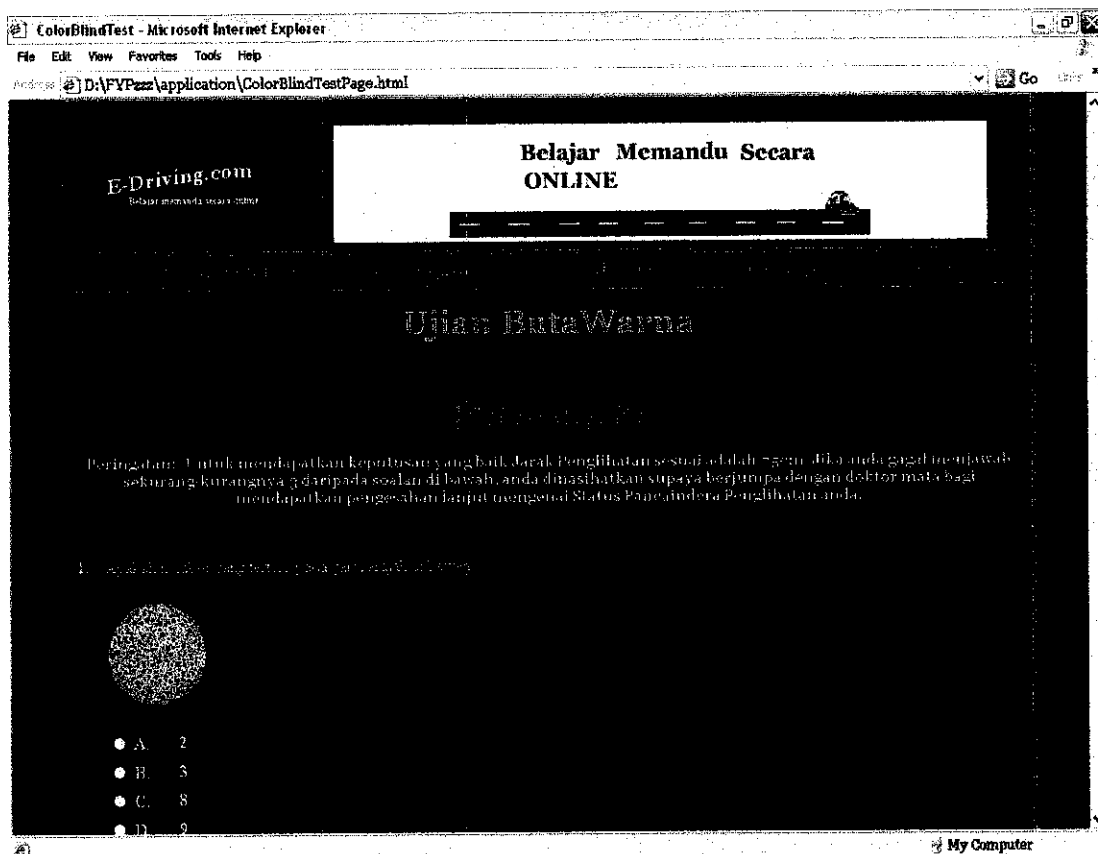
Figure 4.11 Color Blind Tests

User may experience color blind test to test their eye. Each test consists of 10 questions and at the end of the test there will be a button to calculate their mark. It permits easy reversal of actions because if user not satisfied with their mark user can re-do the test by clicking the hypertext link at the bottom of the page. There are actually two sets of questions for the color blind test. Both tests consists the same numbers of question with a different questions.
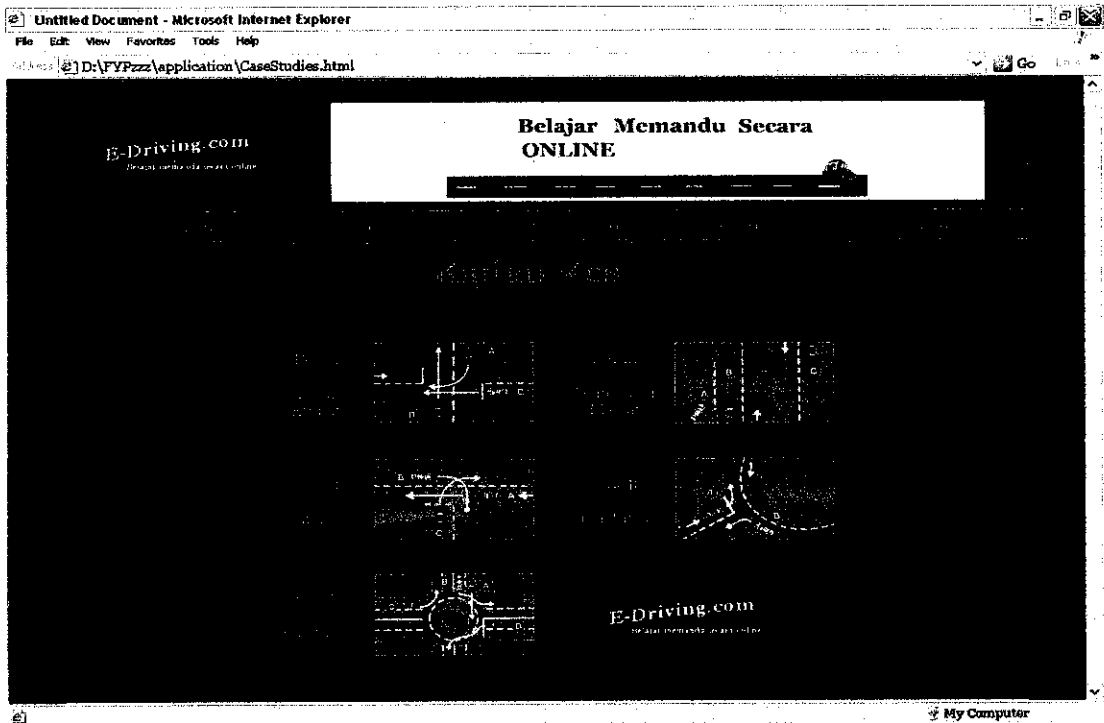
Figure 4.12 Interactive Case Studies

For the interactive case studies as shown in Figure 4.12, user will be linked to other page for each of the case studies. This page includes sound and animation in order to make user understand of the road issue in Malaysia.
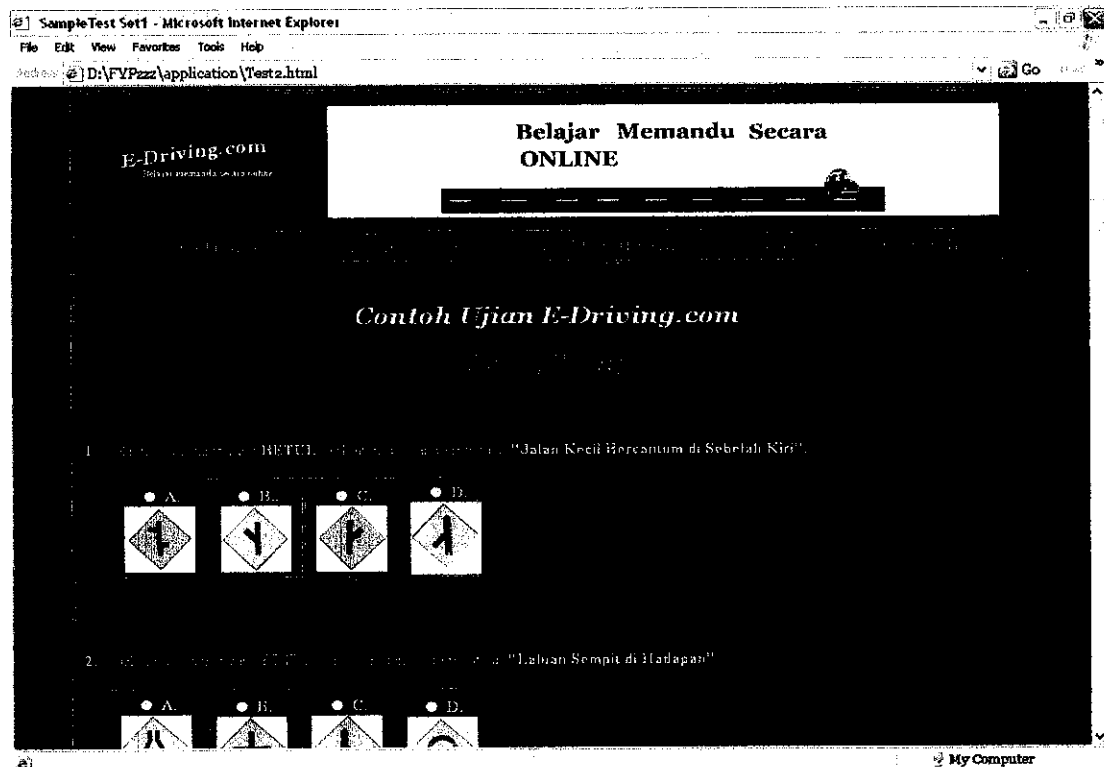
Figure 4.13 Sample Tests

After user understand about the highway codes and road issue in Malaysia, they can have a sample test before the really sit for the real test. The sample test in this page is actually as an exercise for the user in order to see their level of understand toward the course. There are 20 questions in each set. By clicking the grade button, user can know their result and they can re-do the test if the not satisfied with their performance.
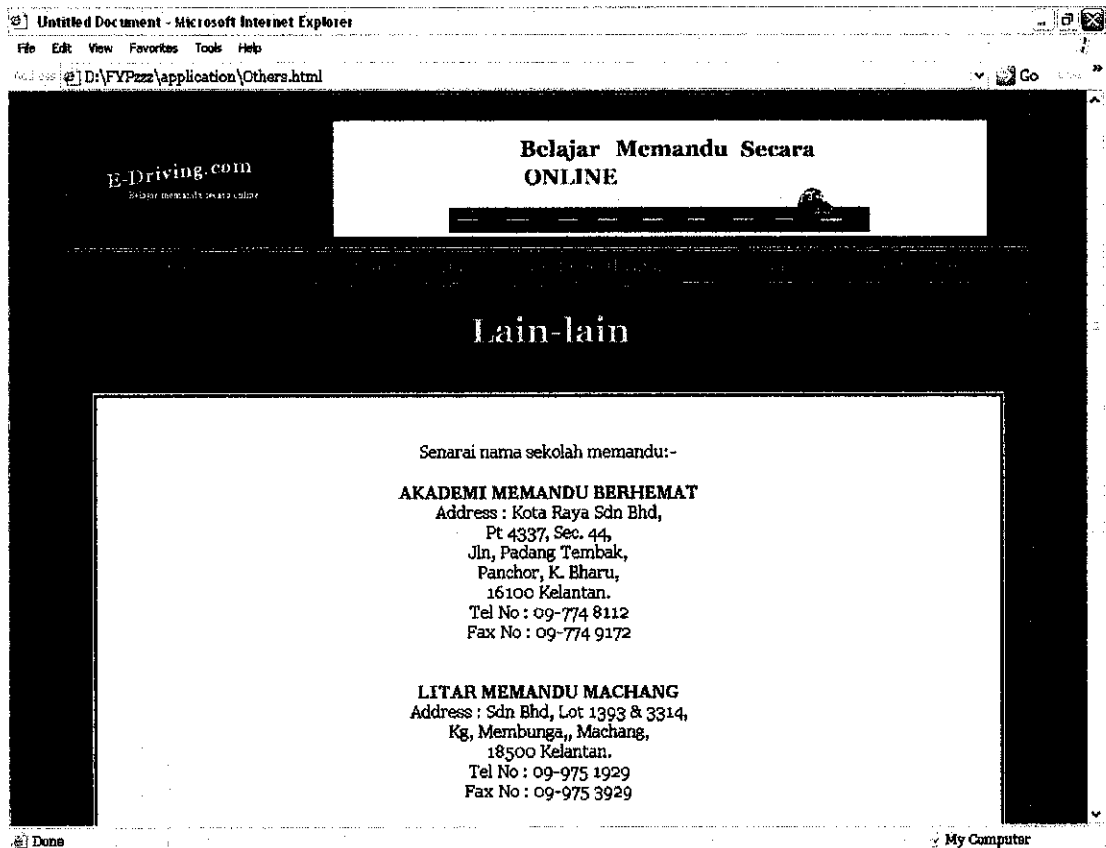
Figure 4.14 Others

Figure 4.14 shows the list of driving school available in Malaysia. It is actually to enable user to know the nearest driving school at their place before they register themselves to the institute.

4.5 Discussion

Based on the research that has been done, online driving course are not something new for other states somehow it is still not being taken seriously in Malaysia. Most of them site in overseas has charge their candidates if they want to attend the virtual class. It is because this is on of the easiest way that the candidates can have their driving license. They are not tied up with the fix class and can save their traveling time to attend the class. The navigation is also easy to understand that make the end user feel comfortable to undergo the course.

The same goes to the website interactivity. They offer a lot of interactive case studies and let the user to have full control of the website such as user can go to any page that they want and cancel their activity at any time. This few elements is actually can be applied to the project as an introduction to the Malaysian as the new way of learning driving. From the analysis that has been done, the flow of this project has been created to fix with the system that is developed.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

As a conclusion, the system focused on the interactive learning which will simplify the user who are planning to take driving course and make them feel enjoy during that process. The system aim is to make the functionality of the system reliable to the users. Successful development of this project will automatically transform the conventional way of learning to an interactive learning. Furthermore, this system will improve the quality of result for every candidates because they have learn the theory and seen the traffic demo using the system before the student undergo the practical test.

One of the objectives of doing this project is to make the system interactive and overcome the current problem in this course. Software like Macromedia Flash is on of the tools that have been used in this project since it is software to do animation or interactive objects. Difficulties to familiar with this software are one of the challenges that have to be face during the implementation of this project but the result was good and it has given a good experience and knowledge.

With the prototype developed, it will give a good experience and exposure. This gives a good opportunity to discover new skills and knowledge about interactive design and multimedia that may be able to be applies throughout the real working life. Time management and responsibilities to the work is very important along with supervision from the lecturer in charge. These are among the key factors that can lead to the success of the project.

5.2 Recommendations

Although this system has achieved the objectives, there are several features that can be enhanced for the future development. This system can have more case studies of road issues in Malaysia and also it can have collaboration with any driving school in Malaysia. Once it has collaboration with the driving school, the system can have a login page for the candidates who want to learn driving online. The system will have a database to track the candidate's performance based on their User Id that they have registered.

User can also use online register if they want to join any available driving school that offer in the system. Sooner, this system not only help the candidates to learn driving online but they can enroll themselves to the nearest driving school without going to the driving school institute.

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
ID		Task Name	Duration	Start
1	✓	Planning		
2	✓	Meeting with supervisor	1 day	Tue 02/08/05
3	✓	Get information for the topic given	5 days	Mon 25/07/05
4	✓	Briefing by coordinator	1 day	Wed 03/08/05
5	✓	Planning	5 days	Mon 01/08/05
6	✓	Prepare GanttChart	1 day	Wed 03/08/05
7	✓	Study on Macromedia Dream weaver and Flash	5 days	Mon 01/08/05
8	✓	Executing	45,97 days	Mon 08/08/05
9	✓	Fact and Idea Finding	6 days	Mon 08/08/05
10	✓	Project Visualization	10 days	Fri 12/08/05
11	✓	Development	11 days	Thu 22/09/05
12	✓	Testing	1,97 days	Fri 07/10/05
13	✓	Documenting	104,97 days	Mon 25/07/05
14	✓	Weekly report	74,97 days	Mon 25/07/05
15	✓	Preliminary Report	3,97 days	Wed 10/08/05
16	✓	Progress Report	4,97 days	Mon 19/09/05
17	✓	Final Report	36,97 days	Thu 27/10/05

Legend:

Task		Milestone ◆		External Tasks
Split		Summary		External Milestone ◆
Progress		Project Summary		Deadline ⇩

Please circle your answers:

1. Do you satisfied with the conventional way of driving lesson?

   a. YES

   b. NO

2. What is your opinion toward online driving lesson in Malaysia?

   a. APPLICABLE

   b. NOT APPLICABLE

3. Do you think that by having interactive case studies about road traffic will make you more understand?

   a. YES

   b. NO

4. Having an exercise on Highway Code and road issue before you really sit for the real test. Will it help you to improve your confidence to sit for the real test?

   a. YES

   b. NO

5. By having online sample test, it will automatically generate your mark once you finish doing the test. Do you think that it help you?

   a. YES

   b. NO

6. Does the online learning system make ease of your daily works?

   a. YES

   b. NO

   If No, Please state your reason.

   _____

   _____

APPENDIX C: PRESENTATION SLIDE

Web Based Application for Driving School

Presented By,

Name: Norhaslinda Abu Bakar

Student ID: 3031

Project Supervisor: Dr.Wan Fatimah Wan Ahmad

Date: 12th December 2005

Presentation Outline

- Background
- Problem Statement
- Objectives
- Scope of Study
- Methodology
- Development Tools
- Result & Discussion
- Limitations
- Recommendations
- Conclusion
- Project Demo
- Q&A

Background

- Web Based Application for Driving School is a web based system that enable user to learn about driving in Malaysia via online.

- The purpose is to improve the standard of driving lesson in Malaysia by having an online driving course.

- Through this system user can easily check the test answer and have an example of traffic issue through simulation that will be offered by the system.

Problem Statement

- Currently, there is no online course to learn about driving lesson in Malaysia.

- Using the conventional way, user has to read the books and do the samples test inside it.

- Student may be cheating during the test since they mark their own test questions.

- All the traffic issue in the book are static and hard to understand.

Objectives

- To develop a web based system for those who plan to have driving lesson course.

- To improve the standard of driving lesson in Malaysia by having an online driving course.

- This system will be used as an exercise for the user before they really go for the real test with *Department of Motor Vehicle.*
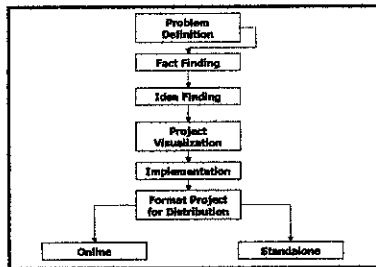

Scope of Study

- To implement the Shneiderman's Golden Rules of Interface Design through the website.

- To analyze the system usability and functionality by looking at how easy an interface design in order for user to understand and to look how well the interactive controls perform on the target platform.

Methodology

Interactive Design Process

Development Tools

- Macromedia Dreamweaver MX
  - ✓ Used to create the web pages for the system.

- Macromedia Flash MX
  - ✓ To produce smooth animations and complete interactivity.

- Java Script
  - ✓ A programming language that gives the programs responses to the user's action.

- Adobe Photoshop CS2
  - ✓ Used to edit all the Highway Code and pictures needed for the application.

Result and Discussion

- The functionality and flow of the system is the result for the system that has been developed.
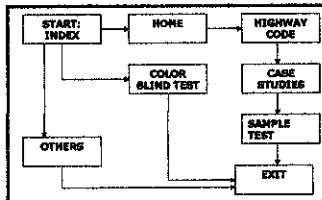
Web Based Application for Driving School Flow Chart

Result and Discussion

- Online driving course are not something new for other states somehow it is still not being taken seriously in Malaysia.

- Navigation is the most important criteria need to be consider because it make user feel comfortable to undergo the course.

- Interactivity of the system is also important because it let the user to have full control of the website such as user can go to any page that they want and cancel their activity at any time.

Limitations

- Internet is needed.

- There should be two version of the system which is in Bahasa Malaysia and English.

- Too many Highway Codes and questions in the sample test make user feel irritated and causes a lot of hassle.

Recommendations

- This system can have more case studies of road issues in Malaysia and also it can have collaboration with any driving school in Malaysia.

- User can have online registration with any available driving school that offer by the system so that they can enroll themselves with the nearest driving school without going to the driving school institute.

Conclusion

- The system focused on the interactive learning which will simplify the user who are planning to take driving course and make them feel enjoy during that process.

- This system will improve the quality of result for every candidates because they have learn the theory and seen the traffic demo using the system before the student undergo the real test.

Web Based Application for Driving School

Project Demo

Web Based Application for Driving School

Q & A

Thank you