

INTERNAL INTERACTIVE ROUTE GUIDANCE SYSTEM

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UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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**This report is submitted in partial fulfillment of the requirements for the award of
Bachelor of Electronic Engineering (Computer Engineering) With Honours**

**Faculty of Electronic and Computer Engineering
Universiti Teknikal Malaysia Melaka**

April 2009



UNIVERSITI TEKNIKAL MALAYSIA MELAKA
FAKULTI KEJURUTERAAN ELEKTRONIK DAN KEJURUTERAAN KOMPUTER

BORANG PENGESAHAN STATUS LAPORAN
PROJEK SARJANA MUDA II

Tajuk Projek : INTERNAL INTERACTIVE ROUTE GUIDANCE SYSTEM

Sesi Pengajian : 2005/2009

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Specially dedicated to my beloved family especially my parents and family members.

Last but not least, to my supervisor, my friends and all the UTEM lecturers.

ACKNOWLEDGEMENT

Alhamdulillah. First of all, all praised and thank you to ALLAH for leading and giving me strength and guidance to complete in writing this Projek Sarjana Muda (PSM) report entitled “Internal Interactive Route Guidance System”.

First and foremost, I extend my thanks and appreciation to my supervisor, Mdm Norihan Bt Abd Hamid for all the willingness to respond my question and guide me to complete this project. My deeply thanks to all lecturers in FKEKK who had help me a lot in my project.

Very special thanks to my parent and also my friends who always giving me full support and motivation. Thanks to all who involved to helping me to complete my report. Thank You.

ABSTRACT

Route Guidance System (RGS) is considered as a low-cost alternative for reducing congestion by providing real-time information to user to find their desire destination place more effectively. A comparative analysis of the measures of effectiveness revealed that the performance of the developed RGS is significantly better than the performance under existing non-RGS conditions. RGS is a route building program capable of compiling route information of an entire FKEKK district covering the insides of building by connecting maps of different floors, maps of different scales and route information from outdoors to indoors. It can be used to provide route information for pictorial maps of all building in FKEKK. The purpose of this project is to help user (visitor, new students and staff) to find their destination in the faculty area with less help from the people around them. With friendly user interface of the system, user can easily understand the function of the system. A database created to stores map including route network data. A route search unit searchers a route from a departure point to destination point from the route network data stored in database.

ABSTRAK

Sistem penunjuk arah(RGS) adalah cara alternatif yang menjimatkan untuk mengurangkan kebuntuan dengan menghasilkan maklumat nyata kepada pengguna untuk mencari arah destinasi tempat yang mereka inginkan dengan lebih berkesan. Analisis perbandingan tahap pelaksanaan prestasi yang dibangunkan oleh RGS nyata lebih baik daripada prestasi tanpa RGS. RGS adalah satu program penunjuk arah bangunan yang berupaya mengumpulkan informasi arah bagi keseluruhan kawasan FKEKK yang meliputi bahagian dalam bangunan dengan menghubungkan peta dari setiap tingkat dan peta dengan skala yang berlainan dan juga 3 dimensi penunjuk arah dari luar bangunan ke dalam bangunan. Ia juga boleh digunakan untuk menunjukkan keseluruhan bangunan FKEKK. Tujuan projek ini dibangunkan untuk membantu pengguna(pelawat, pelajar baru atau staf baru) untuk mencari destinasi di dalam kawasan fakulti dengan tanpa perlu bantuan daripada orang di sekeliling. Dengan sistem yang mesra pengguna, pengguna lebih mudah untuk memahami fungsi yang ada di dalam sistem. Pangkalan data juga di bina bagi menyimpan peta termasuk arah jalan data. Unit pencarian arah mencari arah jalan daripada lokasi ke destinasi daripada peta arah jalan yang disimpan di dalam pangkalan data.

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LIST OF ABBREVIATION

RGS – Route Guidance System

PSM – Projek Sarjana Muda

GUI – Graphics User Interface

SQL – Sequence

PHP – Personal Home Page

FKEKK – Fakulti Kejuruteraan Elecktronik dan Kejuruteraan Komputer

HTML – Hyper Text Markup Language

CSS – Cascading Style Sheet

RDMS - Relational Database Management System

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CHAPTER 1

INTRODUCTION

1.1 Overview

In this chapter, it will describe the feasibility study of the project. Beginning with project background, it will state the area that being studied for the project. Base on that problem statement, an objective of the project is listed out. Monitoring the project also included to ensure the project has a limit so that it not over run the time provided. After that is all about what do we expect for the final result of this project.

1.2 Project Background

The idea of the project is to design and develop a route guidance system that can help user (visitor, new students and staff) to find their destination in the faculty area with less help from the people around them using web based. A database stores map including route network data and landmark data. A route search unit searchers a route from a departure point to destination point from the route network data stored database. The application will give instruction to the destination using text guidance and plan view

map navigation guide. It can be implementing by selecting from one location (origin) to the other location (destination). Aim of this project is to develop an interactive route guidance system for user guide.

1.3 Problem Statement

This application is created to solve the following problems:

1. New students, staff and visitor always wasting their time on finding their destination in faculty area.
2. The existing paper map sometimes cannot be understood by user.
3. Not all the students and staff know the faculty area specifically.

1.4 Objective

Route guidance systems give new technology guidance systems that will implement in faculty. The objectives of this project are:

1. To develop a system that can help user to find their destination in the easier and fastest way without losing their time.
2. To help existing user more understanding each area of faculty with text guide and route map.
3. Visitors and newcomers not having problems in area of faculty.
4. To make FKEKK faculty as a benchmarking to other faculty implementation of route guidance system.

1.5 Project Scope

A Route guidance system project function based on several scope of work which is:-

1. Develop a system that can help user find the easier and fastest way from one location to one location in faculty area.
2. Creating a database stored a map including network route data and landmark data.
3. The design of this project is user friendly that will make people easier to understand and use the system.
4. The implementation of this system is in FKEKK website.

1.6 Expected Output

An internal interactive route guide systems will be develop with functionality for user to search their route from one location to other destination. The new design and application will be developed. User can now enter their location and their destination and the system will guide to the shortest and easier way to the destination point.

1.7 Conclusion

This chapter is an initial step of this report. Hope this Introduction Chapter will give some idea about this project. So, the detail explanation about the project will be explained in Chapter 2 – Literature Review on the research that had been made in order to gain more understanding about the project.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Based on Handouts and Links website (2007), literature review means published information in a particular subject area, and sometimes in a particular subject area within a certain time period. A literature review can be just a simple summary of the sources, but it usually has an organizational pattern and combines both summary and synthesis. This chapter will reveal the research about what is Route Guidance System (RGS), Macromedia Dreamweaver, Web Based Application, MySQL database, Microsoft Visio and Graphics User Interface (RGS).

2.2 What is Route Guidance System (RGS)

A route guidance system is a user decision aid that uses knowledge about a network path to provide advice that facilitates travel between an origin and a destination. There are many possible algorithms and heuristics to provide such support. A simple static algorithm may only calculate the path providing the shortest distance. More sophisticated heuristics might take travel times into account based upon historical data.

Route guidance systems can plot travel routings for the user and some can update them if the environment conditions change. Thus, it is important for the system designer to be able to estimate the conditions that will maximize the probability shortest way to each destination. Each departure point and destination point are utilize when user enter their location and destination place. [1]

2.3 What is Adobe Dreamweaver

Macromedia Dreamweaver 8 is a professional HTML editor for designing, coding, and developing websites, web pages, and web applications. Whether you enjoy the control of hand-coding HTML or prefer to work in a visual editing environment, Dreamweaver provides you with helpful tools to enhance web creation experience.

The visual editing features in Dreamweaver let user quickly create pages without writing a line of code. User can view all your site elements or assets and drag them from an easy-to-use panel directly into a document. User also can streamline their development workflow by creating and editing images in Macromedia Fireworks or another graphics application, then importing them directly into Dreamweaver, or by adding Macromedia Flash objects.

Dreamweaver also provides a full-featured coding environment that includes code-editing tools (such as code coloring and tag completion) and language reference material on Cascading Style Sheets (CSS), JavaScript, and ColdFusion Markup Language (CFML), among others. Macromedia Roundtrip HTML technology imports your hand-coded HTML documents without reformatting the code; you can then reformat code with your preferred formatting style.

Dreamweaver also enables user to build dynamic database-backed web applications using server technologies such as CFML, ASP.NET, ASP, JSP, and PHP. Dreamweaver is fully customizable. User can create their own objects and commands, modify keyboard shortcuts, and even write JavaScript code to extend Dreamweaver capabilities with new behaviors, Property inspectors, and site reports. [2]

As a WYSIWYG Presto-based editor, Dreamweaver can hide the HTML code details of pages from the user, making it possible for non-coders to create web pages and

sites. One criticism of this approach is that it can produce HTML pages whose file size and amount of HTML code is larger than an optimally hand-coded page would be, which can cause web browsers to perform poorly. This can be particularly true because the application makes it very easy to create table-based layouts. In addition, some web site developers have criticized Dreamweaver in the past for producing code that often does not comply with W3C standards, though recent versions have been more compliant. Dreamweaver 8.0 performed poorly on the Acid2 Test, developed by the Web Standards Project. However, Adobe has increased the support for CSS and other ways to lay out a page without tables in later versions of the application, with the ability to convert tables to layers and vice versa.

Dreamweaver allows users to preview websites in many browsers, provided that they are installed on their computer. It also has some site management tools, such as the ability to find and replace lines of text or code by whatever parameters specified across the entire site, and a templating feature that allows single-source update of shared code and layout across entire sites without server-side includes or scripting. The behaviors panel also enables use of basic JavaScript without any coding knowledge, and integration with Adobe's Spry AJAX framework offers easy access to dynamically-generated content and interfaces Dreamweaver can use "Extensions" – small programs, which any web developer can write (usually in HTML and JavaScript). Extensions provide added functionality to the software for whoever wants to download and install them. Dreamweaver is supported by a large community of extension developers who make extensions available (both commercial and free) for most web development tasks from simple rollover effects to full-featured shopping carts.

2.4 What is Web Based Application

An application is a program or group of programs designed for use by an end user (for example, customers, members, or circus acrobats). If the end user interacts with the application via a Web browser, the application is Web based or Web application. If

the web application requires the long-term storage of information using a database, it is a web database application.

A web database application is designed to help a user accomplish a task. It can be a simple application that displays information in a browser window.

A web based application consists of just two pieces:

Database: The database is the long-term memory of web database application. The application can not fulfill its purpose without the database. But, database alone are not enough

Application: The application piece is the program or group of programs that perform a task. Programs create the display that the user sees in the browser window; accepting and processing information that the user types in the browser, store in the database and get information out of it. The database is useless unless there are movements of data weather data in or data out.

The web pages that created with HTML alone are static, meaning the user can't interact with the Web page. All users see the same Web page. Dynamic Web pages, on the other hand, allow the user to interact with the Web page. Different users might see different Web pages. For instance, one user looking at a furniture store's online product catalog might choose to view information about the sofas, whereas another user might choose to information about coffee tables. To create dynamic Web pages, there must be another language in addition to HTML.

One language widely used to make WebPages dynamic is JavaScript. JavaScript is useful for several purposes, such as mouse over (for example, to highlight a navigation button when the user moves the mouse pointer over it) or accepting and validation button that user's type into a Web form. However, it's not useful for interacting with a database. We wouldn't use JavaScript to move the information from the Web form into a database. PHP however is a language particularly well suited to interacting with database. PHP can accept and validate the information that users into a Web form and can also move the information into a database. [2]

2.5 What is Database

The core of a web database application is the database, which is the long term memory that stores information for the application. A database is an electronic life cabinet that stores information in a organized manner so that you can find it when you need it. After all, storing information is pointless if you can't find it. A database can be small, with simple structure – for example, a database containing the titles and author's names of all books that you own. Or the database can be huge, with an extremely complex structure – such as the dataset that Amazon.com has held all its information.

The information that you store in the database comes in many varieties. A company's online catalog requires a database to store information about members. An employment Web site requires a database (or perhaps two databases) to store information about job openings and information from resumes. The information that you plan to store could be similar to information that's stored by Web sites all over the Internet – or information that's unique to your application.

Technically, the term database refers to the file pr group of files that holds the actual data. The data is accessed by using a set of programs called a DBMS(Database Management System). Almost all DBMSs these days are RDBMs(Relational Database Management System) in which data is organized and stored in a set of related tables.

For the best solution of this project, I choose MYSQL database because it is RDBMS so it is particularly well suited for Web sites. [2]

2.6 What is MySQL

MySql is a fast, easy-to-use RDMS used on many Websites. Speed was the developer's main focus from the beginning. In the interest of speed, they made the decision to offer fewer features than their major competitors (such as Oracle and Sybase). However, even though MySql is less full-featured than its commercial competitors, it has all the features needed by the majority of database developers. It's