DRIVING SCHOOL INFORMATION SYSTEM (DriSIS)

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ABSTRACT

Driving School Information System (DriSIS) is a web based online system for any driving school. This system has several approaches. The first one is to driving school staff. This driving school staff needs to handle many students at one time. This will give problem in term of communicating with student for their driving class schedule or exam. Looking at this scenario, driving school have problem in communicating with their student if the number of student more than the available Instructors. Besides that they also need to handle the instructor in term of notification and appointment. This system will help the instructor to access student information and their driving lesson record. Others than that, the instructor also can get any important information regarding appointment or memo about their schedule from this system. And the last one is to students. Students can access their own data. Only registered student can have access to the database. The only method is through the official website that included in the system.

Methodology used in developing this project is Waterfall Software development methodology. Phases that are included are requirement, system analysis, design, implementation and system testing and maintenance. At the end of this project, it is hope that Driving School Information System (DriSIS) can contribute to driving school operation to make it better and to cater best service.

ABSTRAK

Driving School Information System (DriSIS) ialah sebuah sistem yang mempunyai pelbagai kegunaan. Yang pertama kepada pekerja sekolah memandu itu sendiri. Pekerja sekolah memandu ini perlu menguruskan ramai pelajar pada satu masa. Ini akan menyebabkan masalah komunikasi dengan pelajar mengenai pelbagai perkara berkaitan seperti jadual ujian dan keputusan ujian. Sistem ini berguna untuk menyampaikan maklumat-maklumat tersebut. Selain itu, mereka juga perlu menguruskan perkara-perkara yang berkaitan dengan tenaga pengajar. Sistem ini berguna untuk menguruskan semua hal-hal yang berkaitan dan maklumat penting seperti perjumpaan atau pun memo. Selain itu, pelajar juga dapat menggunakan sistem ini untuk akses kepada data-data mereka. Hanya pelajar yang berdaftar sahaja dapat menggunakan sepenuhnya sistem ini, jika tidak sistem dalam talian ini hanya berfungsi untuk menyampaikan maklumat sahaja.

Waterfall Software Development Methodology digunakan dalam pembinaan sistem ini. Semua bahagian yang perlu ddilalui adalah keperluan, analisis sistem, pembinaan, penggunaan aplikasi dan percubaan sistem serta penambahbaikan. Akhir sekali, diharapkan Driving School Information System (DriSIS) ini boleh menyumbangkan kepada penambahbaikan sistem sekolah memandu yang sedia ada.

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CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

Driving School Information System (DriSIS) is developed mainly for driving school to manage the operation more efficient, easily to find data, record keeping more efficient and retrieve data faster. This system will be managed by the staff of driving school. This staff is responsible to the instructor and students records. The problem comes when the records are increasing and it is not systematic anymore to keep all the data in the file systems anymore. As example there are data on 5 years operation of the driving school center kept in files that fill half of the room and maybe there are 5 years

of data to come and all the files have to be keep. It is impossible for the driving school to enlarge its building just to add room to store all this files. By using this kind of system, to keep all of data in order and securely where only the authorize staff can access it seems can give more problems. Besides that, if any unexpected incident or disaster happens, for sure all of this data will vanish. Although there is new driving school using online system to manage all of these records, it is still not efficient enough. Besides this kind of problem, driving school also always having problem in term communication among all of instructor and also its students. Normally the instructor itself will contact their students to inform information about class, examination or anything related to their driving lessons. This method not practical anymore today because it is will involve a lot of money and time. So I'm proposing for the school using SMS Notification system that included in this system. For the driving school that already have their own online system, many of them using that online system just as the medium to give information about their driving school and new student registration. This online system should be need included others extra features which is can help the driving school management.

This system only used for management of the driving school, not relate to any examination. Only the result of examination will be key in and stored with this system. This is because examination will handle by the Jabatan Pengangkutan Jalan (JPJ) itself, where it is not control by driving school. For the SMS Notification, it will depends to the phase of learning process. Normally this SMS Notification will be used for three time for every student. It is during the reminder for class and seminar, examination date and the last is to inform their result whether pass or not.

So, this Driving School Information System will be developed as a solution for the entire problem. The Driving School Information System will keep all the information of the daily driving school center operation which is from the instructor's records, schedule, notification system and many more. Besides than that, Driving School Information System will keep track all of the operation information securely and orderly and even with backup option. It is also can make the management easy for searching and retrieving data, and making changes to all stored data. While in term of cost, they

can reduce a lot of money by using SMS Notification system. Normally the instructors need to call and send short messaging message to their students, but with this system the admin of this system will send of that notification to the student's mobile phone.

1.1 PROBLEM STATEMENT

I. Communicating with numbers of students at one time.

Driving schools that handle many students at one time face problem communicating with student for their driving class schedule or exam. Looking at this scenario, driving school have problem in communicating with their student if the number of student more than the available instructors.

II. Tracking student progress.

Tracking progress of student takes times if staff handling many student at a time. Beside, staff can't easily remember each student progress. Normally there are no proper system to handle the progress. Everything by manual.

III. Managing daily data.

Managing daily data is a basis of a system. Daily data of a driving school involve government procedures, policies and laws. Staff cannot neglect any single file or data.

1.2 OBJECTIVES

I. To develop a driving school notification system that implement web-based and Short Message Service (SMS) technology to display related information and a reminder.

II. To setting up and configure a web-based system that is more practical

III. To integrate between the web-based systems and mobile device through a logical link that enable communication among the 2 components.

1.3 SCOPE

For this Driving School Information System (DriSIS), I separated it into three categories of user:

I. Staff

Driving school stuff, can access all data related to the students, instructor and vehicle information. This driving school stuff have special privileges to the system because they can do whatever they should do like delete, add, or copy.

II. Student

Driving school student, can access their own data. Only registered student can have access to the database. The only method is through the website.

III. Instructor

Driving school instructor, can access to the students lesson record.

1.4 THESIS ORGANIZATION

This thesis will consist of 6 chapters.

I. Chapter 1 will discuss on introduction to system and project.
II. Chapter 2 will explain about the review for the chosen project.
III. Chapter 3 will discuss the approach and framework for the project.
IV. Chapter 4 will document all processes that involve in the development.
V. Chapter 5 will explain about the results and data analysis that had been acquired.
VI. Chapter 6 will briefly summarize about the developed project.

CHAPTER 2

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter will discuss about article review of my project. Literature review is the summary of article that sourced from reliable article. This article review important because it is used to help the developer to build the system, so the developer get some knowledge of the strengths and limitation of the system. All of this helps the developer to choose the best way to develop the system. Researches and analysis an existing system or current system have to be done in order to build a good system. Good system always comes after enhancement of existing system. For this project, literature review serves the purpose of gathering information related to the development of driving school management system. This review will focus on the current existing system. The

result of the review will serve to better equip the developer with knowledge relevant or essential in the design and planning of the system. It will also discuss the approach that will be used for this project and related research and information about the approach, methodology and tools that will be used to develop this project.

Besides that, literature review serves the purpose of gathering information related to the development of Driving School Information System (DriSIS). This review will focus on the method how the system will operate by implementing some technologies.

2.1 FACTS AND FINDING

The main purpose of this study is to identify the problems and drawbacks of current system. Apart from that this study is carried out to analyze the problems that occurred from the current system to come out with the solutions to overcome the regarding drawbacks. Then, it is purposely to study and analyze the management process and activities in order to identify the requirements of the future system. Next is to conclude the future system and to classify the main modules for the system.

2.2 EXISTING OF DRIVING SCHOOL ONLINE SYSTEM

This chapter will discuss about existing online system of driving school around Malaysia.

I. SKEM Driving Academy Sdn. Bhd.

Refer to figure 1, it show one of example of the current simple online system that is used by one of the driving school in Malaysia. This SKEM Driving Academy Sdn. Bhd. using their online system just to give information about their driving school to potential students. They are using seven main menus in their online system. The first one is front page. This front page will show all of recent promotion, package and announcement of

their driving school. In this front page also, there is login box for the instructor to access their email and memo. Then information menu where they will list all information that related to their driving school. Third is service where they list out all of service that they can provide like license application, campaign about road safety and consultation. The next is branch menu. In this menu they listed their entire branch that located around Kuala Lumpur. Then customer feedback form where their customer can post any feedback about this driving school whether it is good, neutral or bad. The last one is their contact details.

Figure 2.1 SKEM Driving Academy online system

This website only provide normal typical function like others online system. Although the system have function for instructor to access their email and memo, but student cannot fully utilize the online system. So this is can consider the online system main purpose only for the staff or instructor of this driving school.

II. Metro Driving Academy Sdn. Bhd.

The second online system is from Metro Driving Academy Sdn. Bhd. Refer to figure 2. Their online system also like normal online system that used by other driving school. They were using seven menus. The first menu is for their general information. Then the next menu is for their service. Here they listed all of their service like driving license program, advance training program, road safety education program, special service and consultancy service. Next menu is for their facilities information. In this menu they also were using graphics. The next is information about their franchise and branch. They list all of their franchise and branch here, all of it located around Kuala Lumpur. Beside of this menu is their map location and special package they provide.

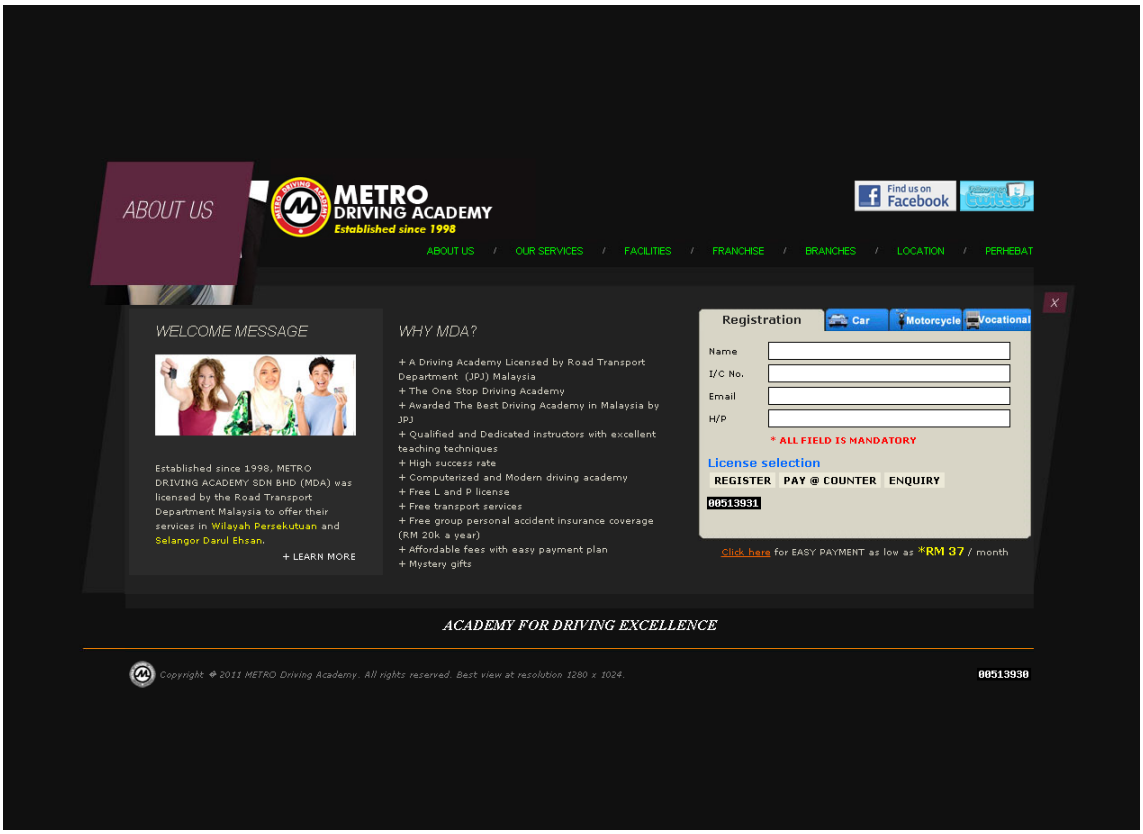

Figure 2.2 METRO Driving Academy online system

This online system that using by Metro Driving Academy Sdn. Bhd. also not too much different than SKEM Driving Academy Sdn. Bhd. online system. The different only their website can used by potential student to register if they interested to join their driving license program. This potential student just needs to fill in their information like name, email, identity card number and phone number. Then they can choose to register, pay at counter or enquiry.

III. Api-Api Driving Center Sdn. Bhd

Third online system for driving school reviewed is Api-Api Driving Centre Sdn. Bhd. This driving school only has six menus. Refer to figure 3 for detail view. First menu is for homepage. Here they show briefly information about their driving school, show some pictures about activities at their driving school and news. There is no login function for students or instructor. Next is menu where they stated information about their driving school with more details. After that is menu where they listed all types of license that student can register. For registration, the student need to go directly to the driving school, not like Metro Driving Academy where anyone that interested to join just fill in the online form.

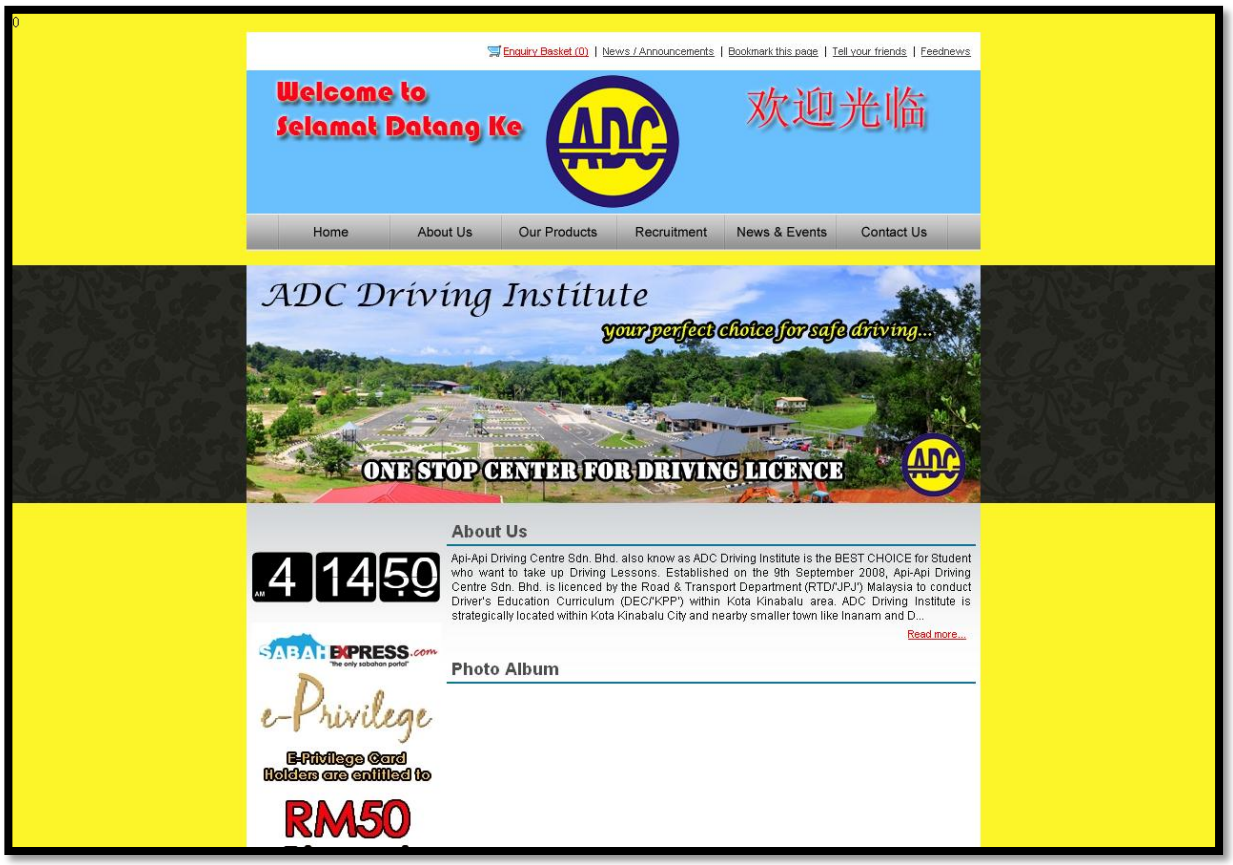

Figure 2.3 Api-Api Driving Centre online system

Next is recruitment menu. Here is information about job vacancy of this driving school. Again, anyone interested to get job ad instructor at this driving school, need go directly to the driving school. Beside recruitment menu, it is news and event menu. Here they listed all current news and event about this driving school. The last is menu for their information details

This online system that used by Api-Api Driving Center also like others online system reviewed before this. The main purpose is just to give information about their driving school to potential students. There are nothing unique about this online system.

2.3 DISCUSSION

As mention earlier, there are three examples of driving school online system. First is SKEM Driving Academy, Metro Driving Academy and Api-Api Driving Center. All of this online system used to give information about their driving school. It is can considered as informative online system to public. They provide information on driving practical, policies and laws, process to gain driving license and also current issues on driving. This website is very informative but there is no communication between driving school staff, instructor and student.

Although all of the online system look similar, but some of the online system have unique function integrated. For SKEM Driving Academy, they have function for instructor or staff to access email and memo. This is only for registered staff or customer, not accessible to anyone that not registered. For the Metro Driving academy, they are having online form for the potential students to register if they interested to be a student. But for the Api-Api Driving Center, there is nothing unique.

Nowadays, an online system should be complete with functions. So it is convenient for the user of the system. Online system also should allow user to access to the system anywhere without having to install software to a specific desktop computers. In my opinion, it is a good solution for Driving School Information System (DriSIS) to be build as an online system.

2.4 TECHNOLOGY

On this part, I will review about the technology that I used to develop my system. Which are web application, GSM modem, and database server, programming language and web server.

2.4.1 PHP

PHP is a widely-used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML. It is a powerful server-side scripting language for creating dynamic and interactive websites [1]. PHP is the widely-used and free. PHP is perfectly suited for Web development and can be embedded directly into the HTML code. The PHP syntax is very similar to Perl and C [2]. PHP is often used together with Apache web server on various operating systems. It also supports ISAPI and can be used with Microsoft's IIS on Windows. The most important thing is PHP is an open source application and 100% free. Here are some of advantage PHP that needed for my Driving School Information System (DriSIS) project:

I. PHP is free, and open source
II. PHP is much easier to learn, partly because it requires no adherence to a particular programming style like Java and others language programming language
III. PHP runs on virtually any operating system (Windows, Linux and FreeBSD) and HTTP server while others language like Java requires an application server like Tomcat, WebSphere, WebLogic which are OS-dependent. Additionally, others language not always be portable between different application servers like PHP.
IV. PHP natively integrates with a large array of database engines.

2.4.2 Short Messaging System (SMS)

SMS is a technology that enables the sending and receiving of message between mobile phones [3]. SMS capable of sending messages of up to 160 characters (224 characters if using a 5-bit mode) to mobile phone that uses Global System for Mobile (GSM) communications. The developed project involves alert and notification service to students and instructors, so this SMS method very suitable. This is because most of peoples nowadays have at least one mobile phone. It is also being carried by its owner most of the time and almost everywhere the owner go. The students and instructors can check the alert and notifications once it is receive to their mobile phone.

2.2.3 Online System

Generally, something is said to be online if it is connected to some larger network or system. In other words, the larger network usually refers the Internet. Therefore, 'online' describes the information that is accessible through the Internet. By using online system, it is easy for students or instructors to check any information they need to know, as long as there are internet connection available.

2.4.4 MySQL

MySQL is a relational database management system (RDBMS) based on SQL (Structured Query Language). It was first released in January 1998 and is now one component of parent company MySQL AB's product line of database servers and development tools. Many internet startups became interested in the original open source version of MySQL as an alternative to the proprietary database systems from Oracle, IBM and Informix. MySQL is currently available under two different licensing agreements which is the free of charge, under the GNU General Public License (GPL) open source system or through subscription to MySQL Network for business applications. There are many advantage of MySQL in term of speed, ease of use, capability, connectivity and security, query language support and cost [4].

2.4.5 SMS Gateway

SMS Gateway is the medium to send sms without using any gsm modem. Only Internet connection, account and a computer is needed. Users need to connect a mobile operator or an independent SMS service provider for an IP address, a port number, a username and a password. It is required to customize SMS Gateway according to the provided data. During the sms delivery, the gateway connects directly to SMSC. This causes fast messaging through wireless connection. The limited performance of GSM SMS (6 SMS per minute) increased here to 500 SMS sending per second with the help of SMS Gateway.

2.5 EQUIPMENTS

On this part, I will review about the equipments that needed for proposed system as stated below:

2.5.1 Web Server

Function of a web server is to deliver web pages on the request to clients. This means delivery of PHP documents and any additional content that may be included by a document, such as images, style sheets and scripts. In the proposed system, server needed to host webpage of the system. Besides that, it is needed to save all of related media like documents and database

CHAPTER 3

METHODOLOGY

3.0 METHODOLOGY

This chapter discuss the concept of methodology used for develop Smart Driving School System. This chapter also informs and describe about the System Development Life Cycle, software and hardware specification that are needed for implementation and develop the system.

3.1 INTRODUCTION

This chapter will explain methodology or step by step approaches to use in developing project and on the same time to fulfill all of requirement that needed to make

sure this project successful. Methodology very important to describe all of step to develop the system more detail. This methodology should be chosen early during the project planning. The methodology depends on requirements and on both the general project plans and the roadmap plan. The approach will be certainly affecting all of the planning for system development therefore it plays a huge part in system development as a foundation of the system. The project approach is not established until the project completed.

Development of Driving School Information System based on System Development Lifecycle (SDLC) to achieve the entire objectives. SDLC describes important elements of project development in a common and consistent way. It is an iterative process broken down into six phases. It is planning, system analysis, design, development, testing and maintenance.

3.2 SYSTEM DEVELOPMENT LIFECYCLE (SDLC)

System Development Lifecycle is a structured methodology used in the development of software products and packages. This methodology is used from the conception phase through to the delivery and end of life of a final software product. This methodology gives much advantage to Smart Driving School System.

3.3 MODEL USAGE/APPROACH

The model or approach here is used in developing this project.

3.3.1 Planning

One of the most important tasks in the development of software using the SDLC is gathering and defining the requirements for the project. In this Smart Driving School System, this requirement phase needed for me to investigate and communicate with