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JUDUL: Leave Management System via SMS (LMSS)

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Tesis dimaksudkan sebagai Laporan Projek Sarjana Muda (PSM)

LEAVE MANAGEMENT SYSTEM via SMS

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This report is submitted in partial fulfillment of the requirement for the Bachelor of
Computer Science (Networking)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

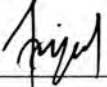
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DECLARATION

I hereby declare that this project report entitled
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is written by me and is my own effort and that no part has been plagiarized without
citations.

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DEDICATION

I would like to say a lot of thanks to my family especially to my beloved mom and dad who always give me encouragement to finish this project.

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Alhamdulillah. In the name of Allah, I finally complete this project successfully. Firstly, I would like to thank my project supervisor, En. Mohd Najwan bin Md Khambari for giving a lot of assistance and idea to complete this project. Without him as guidance this project will not finish in time. He had given me moral support to keep me doing this project.

Secondly, I would like to thank my parents for their support and motivation during completing my project. In the time being my parent have support me by giving money to support all the cost needed to complete this project.

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ABSTRACT

Currently, most of company still uses manual apply leave. Staff will fill the form and submit to their manager. Staff will wait for the manager to approve the form. This can waste a lot of time. Leave Management System via SMS (LMSS) is developed to solve the problem. This system can be use to apply leave via web and SMS. After staff apply leave, head of department will be notify by SMS and can approve the leave application via SMS. Then, manager will be notify by SMS after head of department has approve the leave application. Once manager has approved the leave application, staff will get the result of leave application by SMS. With this the time used to apply leave can be reduce. The objective of this system is to make easier for staff to apply leave and to approve the leave application by manager as fast as possible. This system use System Development Life Cycle (SDLC) as methodology, Hypertext Pre-Processor as a programming language and MySQL as a database. This system use GSM Modem as a medium to send and receive message. The project will be developed by a few phases which are plan, analyze, design, implementation and test. In this system manager and head of department will be responsible to approve or reject all the leave apply by the staff.

ABSTRAK

Kebelakangan ini, kebanyakan syarikat masih memohon cuti secara manual. Staf akan memohon cuti dengan mengisi borang terlebih dahulu dan borang tersebut akan diserahkan kepada pengurus. Staf akan menunggu kelulusan dari pengurus. Pembaziran masa akan berlaku sementara menunggu kelulusan. Oleh itu, Leave Management System via SMS dibina utk menyelesaikan masalah ini. Sistem ini boleh digunakan untuk memohon cuti melalui web dan juga SMS. Selepas memohon cuti, ketua jabatan akan mendapat notis melalui SMS dan akan meluluskan permohonan tersebut melalui SMS. Kemudian pengurus akan mendapat notis melalui SMS sejeurus selepas ketua jabatan meluluskan permohonan cuti tersebut. Selepas pengurus meluluskan permohonan tersebut, staf akan mendapat keputusan permohonan cuti tersebut melalui SMS. Dengan ini, penggunaan masa dapat dikurangkan. Objektif system ini adalah untuk memudahkan staf memohon cuti dan untuk meluluskan permohonan cuti oleh pengurus secepat yang mungkin. Metodologi yang digunakan oleh sistem ini adalah Sistem Pembangunan Semula. Sistem ini dibangunkan menggunakan bahasa pengaturcaraan Hypertext Pre-Processor (PHP) dan pangkalan data MySQL. Sistem ini akan mengguna GSM Modem sebagai medium untuk menghantar dan menerima mesej. Projek ini akan dibina melalui beberapa fasa iaitu perancangan, analisis, reka bentuk, implimentasi dan juga pengujian. Dalam sistem ini pengurus dan ketua jabatan bertanggungjawab untuk meluluskan atau menolak segala permohonan cuti oleh staf.

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CHAPTER I

INTRODUCTION

1.1 Project Background

The system that will develop is Leave Management System via SMS. This system developed for staff to apply leave and manager to manage leave application. Currently, most of company still uses manual apply leave. Staff will fill the form and submit to their manager. Staff will wait for the manager to approve the form. This can waste a lot of time.

Leave Management System via SMS (LMSS) is a web-based system that design and develop to apply and approve leave through web and SMS. User will apply leave through web and waiting confirmation by SMS. This system will reduce time taken for the staff to take the leave and this system will make the staff to be easier to apply for a leave.

By using this system, the company not only save their time but since this system record and save every application made to the manager, so the company can use the data to make an analysis. Using the manual system, the staffs are facing difficulties to apply their leave. After the staffs apply for leave, they usually get the approval letter quite late. The management of the company was also having difficulties to store all the leave

application systematically. The leave application letter cannot be kept for too long since they are using paper for the leave application.

1.2 Problem Statements

The problem statements of this project are:

- Manual system is hard to use. Sometime staffs take very long time to apply leave and get confirmation. This can cause a problem to staff if the staff needs the leave immediately.
- The system that currently used is not systematic.
- The leave application form is written in paper and this form can be missing.

1.3 Objective

The objectives of this project are:

- To develop a system that can apply leave.
- To develop a system that more systematic and save time.
- To develop system that can send/receive SMS message to mobile device
- To make user easier to approve leave by SMS.
- To enable user to get notification by SMS after apply and approve leave.

1.4 Scope

The scopes of this project are:

- Target users are staff, manager and head of department.
- Module to be develop are:
 - Apply leave
 - Reject leave
 - Approve leave
 - Update staff record
 - View staff record
 - View people on leave
 - Generate report
 - Update leave type
 - Update department
 - Register new staff
 - Send notification via SMS

1.5 Project Significant

There are several benefits by using this project. Staff can apply leave through web. By using SMS, manager and head of department can approve leave application. Staff will wait for confirmation SMS before taking leave. Besides that, this system also can save time and energy of the user.

This system is more easy to use than the previous system which is manually filling the form. It is also more effective and reliable. With this system, staff didn't have to fill the paper form and submit to the head of department or manager by hand. Staff will only need to fill the online form and send the application through Internet. Manager

and head of department can approve staff on leave by SMS and can manage all leave application through Internet

1.6 Expected Output

The expected output of Leave Management System via SMS (LMSS) is the company will have a new system that can be apply and easier to use. This project will save time and energy of the user. The company will have a new system that more systematic than the previous system.

1.7 Conclusion

As a conclusion, this project will develop a new system that can be use by the staff, manager and head of department to apply leave and approve leave. This project enable user to reduce time used to apply leave.

The next activity is to develop chapter 2. Chapter 2 will explain briefly about literature review and project methodology. This chapter will analyze the existing system.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This chapter will be discussing about the existing system related to the web and comparison between the current system and the project. This chapter also will briefly explain about some similar web based that had been widely used. It is important that to make sure all of the past system is been review for further enhancement for the new system.

Literature review and project methodology are the basic fundamentals of project or research that being undertaken. Without both of the method, project or research cannot be completed as there is no clear guideline to where the project starts and end. Some project may require specific approach or general overview of the whole picture in terms of the purpose of the project and how it will influence the users alike to integrate and make use of the functions available within the system.

A literature review summarizes, interprets and evaluates existing “literature” in order to establish current knowledge on the project. The purpose for doing so relates to ongoing research to develop that knowledge. The literature review may resolve a controversy pertaining to certain issues to the related field of the project thus establishing the need for additional research and proper defining of the current issue to fit the related

project. Literature review involves a few important steps such as describing the problem area; gradually shifting focus to specific research hypotheses, purposes or questions. The significance of an issue should also be explicitly be specified prior to introduction to a paper, thesis or current issue. Literature review should emphasize the findings of previous research and this not only includes the methodologies and variables studied. Most importantly, the literature review should and must be written in as an essay, not annotated listing which predefines a certain issue being addressed.

A project methodology addresses the principles, practices and procedures for performing project management. Project management is a critical value adding process that improves the probability of project success. Project methodology predefines the process definition of a project such as outlining the software architecture to the subject, making risk assessment and the least-cost path to avoid unnecessary failures when a project is being developed. It also serves as guidelines in which monitoring from time to time involving time and cost estimation is given outmost priority to conclude the success of that project. Various methodological tools are available to suit the needs for developing a certain project but the whole process of the project must be taken into account on which methodological model is suitable or the project.

2.2 Literature Review

The literature review represents the method of searching, collecting, analyzing and drawing conclusion from book writers or other open sources about certain topics. Most of the literature reviews are done based upon the facts and findings from writers of IT books. For this project, the literature reviews are collected from books and journals and also from internet.

2.2.1 Domain

The domain of this application is ICT in Advanced Manufacturing Technology. This application will be designed to fulfill the needs because of many reasons. The SMS will be used as the human-machine interaction because of efficiency and well-known technology that can be used widely. Manager can approve their staff on leave via SMS and website. Staff can apply leave via website and get the approval via SMS. Generally, people may have own mobile phone, so they will get the updates as soon as possible from the system. The list of benefits to adding the technology to send and receive SMS into the public is endless.

2.2.2 Keyword

There are several terms that being used in this project. The terms are SMS, GSM Modem, PHP, Database and WWW. Below are the explanations of each term.

2.2.2.1 SMS

SMS stands for Short Messaging Service originally part of the GSM (Global System for Mobile Communications) system. It is a technology that enables the sending and receiving of messages between mobile phone and has over one billion users worldwide. Short Messaging Service (SMS) is a communications protocol allowing the interchange of short text messages between mobile telephone devices.

The SMS technology has facilitated the development and growth of text messaging. The connection between the phenomenon of text messaging and the underlying technology is so great that in parts of the world the term "SMS" is used as a synonym for a text message or the act of sending a text message, even when a different protocol is being used.

SMS as used on modern handsets was originally defined as part of the GSM series of standards in 1985 as a means of sending messages of up to 160 characters (including spaces), to and from GSM mobile handsets. Since then, support for the service has expanded to include alternative mobile standards such as ANSI CDMA networks and Digital AMPS, as well as satellite and landline networks.

2.2.2.2 GSM Modem

GSM stands for "Global System for Mobile Communications". GSM modem is a wireless modem that works with GSM wireless network where it sends and receives data through radio waves. This refers to a digital cellular phone technology that is primarily based on a specified standard for how data is sent over a wireless network. It can provide you with important features like a fax machine, encryption, text messaging (this is the most commonly used among its services), call forwarding, caller ID, call waiting and multi party conferencing. GSM cellular phones use a combination of Time and Frequency Division Multiple Access.

A GSM modem can be an external modem device, such as the Wavecom FASTRACK Modem. Insert a GSM SIM card into this modem, and connect the modem to an available serial port on computer. A GSM modem can be a PC Card installed in a notebook computer, such as the Sierra Wireless Aircard 750.

A GSM modem could also be a standard GSM mobile phone with the appropriate cable and software driver to connect to a serial port or USB port on computer. According to <http://www.fgprs.com>, any phone that supports the extended AT command set for sending/receiving SMS messages, as defined in the ETSI GSM 07.05 specification can be supported by the now SMS/MMS Gateway .

A dedicated GSM modem (external or PC Card) is usually preferable to a GSM modem. This is because of some compatibility issues that can exist with mobile phones.

According to Till, A. (1997), GSM is a global standard for digital wireless communications, with extensive roaming capabilities for both voice and data services. GSM has been commercially available since 1992. GSM networks are currently operating in more than 100 countries worldwide. There are now in excess of 55 million GSM subscribers worldwide. GSM offers advanced mobile data capabilities, previously unavailable on analog cellular networks.

GSM data offers mobile workers a use anytime, anywhere capability, unmatched by fixed telephone networks. Wireless GSM data can be used for a wide range of applications including Email, Facsimile, Internet access and Remote LAN Access. GSM is uniquely positioned to meet the mobile data needs of handheld computer users. Co-operation between the GSM handset manufacturer and data solutions providers is a set of key to developing reliable, robust products.

In the near future, high speed data services will be available, which will provide both circuit switched and packet based services. GSM has now fully developed as a global standard for digital mobile communications, offering an unrivalled level of coverage and services matched by no other mobile communications standard.

Based on the statement above, GSM modem act as a device to sending and retrieve message. By using GSM modem, systems that will be develop able to sending and retrieve message to network administrator.

2.2.2.3 PHP

PHP stands for Hypertext Preprocessor. PHP is a scripting language originally designed for producing dynamic web pages. It has evolved to include a command line interface capability and can be used in standalone graphical applications. PHP is a widely-used general-purpose scripting language that is especially suited for web development and can be embedded into HTML. PHP is installed on more than 20

million websites and 1 million web servers. PHP included web/http server and MySQL database server. PHP has many benefits including the following:

i. High Performance

PHP is very efficient. It is faster to code and faster to execute. Using a single inexpensive server, millions of hits per day can be served.

ii. Database Integration

PHP has native connections available to many database systems. Direct connections can be made to database such as MySQL, PostgreSQL, Msql, Oracle, Hyper wave, Informix and among others.

iii. Built-in Libraries

Because PHP was designed for use on the Web, it has many built-in functions for performing many useful Web-related tasks. These include generation of GIF images on-the-fly, connecting to other network services, sending email, working with cookies and generating PDF documents.

iv. Low Cost

PHP is free and readily available. Queries to the PHP mailing lists are often answered within minutes. Anyone may visit the numerous PHP Web site such as www.phpbuilder.com, www.php.net and www.zend.com for download the complete source code that available.

v. Dynamic Support

PHP is available for many different operating systems. PHP runs on UNIX, Windows, and Macintosh OS X. PHP is designed to integrate with the free technology, Apache Web Server. It is the most popular web server on the Internet.

2.2.2.4 Database

Database is an integrated collection of logically-related records or files consolidated into a common pool that provides data for one or more multiple uses. One way of classifying databases involves the type of content. Other classification methods start from examining database models or database architectures.

Databases are structured to collect and store information so users can retrieve, add, update or remove such information. Database programs are designed for users so that they can add or delete any information needed. The structure of a database is tabular, consisting of rows and columns of information.

2.2.2.5 WWW

The World Wide Web (commonly shortened to the Web) is a system of interlinked, hypertext documents accessed via the Internet. With a Web browser, a user can view Web pages that may contain text, images, videos, and other multimedia and navigates between them using hyperlinks.

To visit the Web Page, the users need to obtain data from web server. Web server is a piece of computer software that can respond to a browser's request for a page and deliver the page to the Web browser through the Internet. Web server helps people to create both static and dynamic pages. All HTML pages (with or without client-side