UNIVERSITI TEKNIKAL MALAYSIA MELAKA

DESIGN AND DEVELOPMENT OF ADMINISTRATIVE MODULE AND VISITOR MODULE OF WEB-BASED SASARAN PENTING VISITOR MANAGEMENT (SPVM) SYSTEM FOR TELEKOM MALAYSIA, MELAKA

This report is submitted in accordance with the requirement of Universiti Teknikal Malaysia Melaka (UTeM) for the Bachelor of Computer Engineering Technology (Computer Systems) with Honours.

by

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TAJUK: **Design and Development of Administrative Module and Visitor Module of Web-Based Sasaran Penting Visitor Management (SPVM) System for Telekom Malaysia, Melaka**

SESI PENGAJIAN: **2019**

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APPROVAL

This report is submitted to the Faculty of Electrical and Electronic Engineering Technology of UTeM as a partial fulfillment of the requirements for the degree of Bachelor of Computer Engineering Technology (Computer Systems) with Honours. The member of the supervisory is as follow:

Signature	:	……
Name of Supervisor I	:	Puan Norfadzlia Binti Yusof
Date	:	……

Signature	:	……
Name of Supervisor II	:	Encik Aiman Zakwan Bin Jidin
Date	:	……

ABSTRAK

Projek ini adalah untuk merekabentuk dan membangunkan modul pentadbiran dan modul permohonan pelawat yang berasaskan web sistem pengurusan pelawat ke Sasaran Penting. Projek ini dibangunkan adalah untuk memenuhi permintaan Jabatan Pengurusan Keselamatan Telekom Malaysia, Melaka dalam menguruskan pelawat ke Kawasan Sasaran Penting Kategori 2, Melaka. Ini kerana pengurusan pelawat yang sedia ada adalah tidak selamat dan meninggalkan maklumat pengunjung yang boleh didapati oleh sesiapa sahaja untuk melihatnya. Di samping itu, permohonan lawatan tidak diurus dengan cekap kerana maklum balas yang lewat kepada pelawat dan orang yang bertanggungjawab untuk mengendalikan lawatan tersebut. Ini adalah kerana proses untuk memberi kelulusan adalah secara berperingkat dan e-mel sebagai media komunikasi antara setiap peringkat. Kemudian, pemohon dan kakitangan tidak dapat mengesan status permohonan semasa. Pengurusan yang sedia ada juga sukar untuk menjana laporan dan sukar untuk membuat analisis data kerana rekod itu dalam bentuk cetakan. Berdasarkan masalah yang berlaku semasa pengurusan pelawat secara manual, projek ini akan merekabentuk sistem berdasarkan keperluan pengguna yang dikumpul, melaksanakan permohonan melawat dan sistem kelulusan Sasaran Penting; dan menjalankan ujian berfungsi dan tidak berfungsi untuk mengesahkan sama ada sistem ini memenuhi semua keperluan yang dikenal pasti oleh pengguna atau tidak supaya dapat menjadi satu sistem yang lengkap dan dapat menghapuskan semua masalah. Projek ini hanya memberi penekanan kepada dua lokasi Sasaran Penting Telekom Malaysia di rantau Melaka iaitu Stesen Satelit Bumi di Lendu dan Stesen Kabel Dasar Laut di Pengkalan Balak seperti yang diminta oleh anggota keselamatan.

ABSTRACT

This project proposed the design and development of the administrative module and visitor appointment module of web-based Sasaran Penting visitor management system. This project was developed based on the request from the Security Management Department of Telekom Malaysia, Melaka in managing the visitors into Kawasan Sasaran Penting Kategori 2, Melaka. This is because of the current practice on managing the visitor almost no security and leaves the visitor information available to anyone to see it. Besides that, the visit request application is not managed efficiently because of the late feedback to visitor and person in charge to handle the visit. This is because of the multilevel of approval and email as a communication medium between each level. Then, the applicants and staffs cannot track the current of application status. The current practice also difficult to generate the report and hard to make data analysis as the record is in hardcopy form. Based on the problems occur during the current practice of visitor management, this project will design a system based on the collected user's requirement, implement the Sasaran Penting visit application and approval system; and conduct a functional and non-functional testing to verify whether the system fulfils all the identified requirement provided by user to be a complete system which can eliminate all the problems. This project is the only emphasis on two of Sasaran Penting locations of Telekom Malaysia in Melaka region which is Earth Satellite Station at Lendu and Submarine Cable Station at Pengkalan Balak as requested by security personnel.

DEDICATION

To my beloved parents and all my family members who always encourage and support me during my project.

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Special thanks to all my family members for giving me their constant encouragement, strength, support and love I needed to complete my goals. I also would like to express my gratitude to the lecturers who made my experience in graduate school worthwhile.

Lastly, I would like to thanks any person which had contribute to my final year project directly or indirectly. I would like to acknowledge their comments and suggestions, which was crucial for the successful completion of this study.

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LIST OF ABBREVIATIONS

TM	-	Telekom Malaysia
SPVM	-	Sasaran Penting Visitor Management
SM	-	Security Management
AS	-	Admin Station
PR	-	Public relation
GM	-	General Manager
IS	-	Information System
COTS	-	Commercial Software Solutions
GUI	-	Graphical User Interface
AJAX	-	Asynchronous JavaScript And XML
CSS	-	Cascading Style Sheet
HTML	-	Hyper Text Markup Language
JS	-	JavaScript
JSON	-	Javascript Object Notation
PHP	-	Hypertext Preprocessor
SQL	-	Structured Query Language
DBMS	-	Database Management System
SRS	-	Software Requirements Specification
HTTP	-	HyperText Transfer Protocol
OS	-	Operating System
IC	-	Identification Card
PK	-	Primary Key
FK	-	Foreign Key

CHAPTER 1

INTRODUCTION

1.1. Introduction

In today's unsecured world, visitor management is an even more important concern to anyone. The manual method of monitoring visitors can introduce significant risks to the organization. In the modern world with the growing threats to the safety and security of premises, it is very important to keep track of visitors' movement. In many premises, visitors are still registered using handwritten logs. While this method is considered quick and easy, it provides almost no security and leaves the visitor information available to anyone to see it. Automatic visitor management system provides a more professional look to check system, improve security and fulfil compliance mandate for visitor data collection and auditing. Therefore, the automatic visitor management system is easy to access, manage and track visitors effectively and reduce the risk of undesirable intruders within the premises. This paper will discuss on the design and development of administrative module and visitor appointment module of web-based Sasaran Penting visitor management system based on the requested by the staff of Security Management Department of Telekom Malaysia, Melaka in managing the visitors into Kawasan Sasaran Penting Kategori 2, Melaka.

1.2. Project Background

Sasaran Penting locations are the most important areas in Malaysia because it includes any installations or services of product which very important. Sasaran Penting is divided into two of priority levels which known as Sasaran Penting Kategori 1 and Sasaran Penting Kategori 2. Sasaran Penting Kategori 1 means there is no other choice if the function is destroyed or damaged because it would lead to devastating effects on the national economy or national security or the functions of government while

Sasaran Penting Kategori 2 means that the Sasaran Penting is difficult to change if its function is destroyed or is badly damaged which will have adverse effects on the national economy or national security or government functions (Yusof, 2008).

Location of Sasaran Penting Kategori 2 in Melaka region consists of Earth Satellite Station at Lendu, Submarine Cable Station at Pengkalan Balak, and Microwave Station at Bukit Beruang, Melaka. These locations are under the supervision and monitoring of the Malacca State Government Chief Security Officer. Relevant government departments will examine the safety of these locations twice a year, in which Telekom Malaysia will provide information about the installation of infrastructure to the relevant agencies (Abdullah, 2018).

Security Management Department of TM is responsible for providing that information and managing the assets and property security of the company that assisted over security protection. It also responsible against the operation of the security control services and ensuring that all the premises, buildings and company's assets are avoided from security threats. Despite the premises in Sasaran Penting are heavily guarded, the government still allow for a public visit to the premises with several terms and conditions. Therefore, security personnel of TM, Melaka has been requested to develop the visitor management system into Kawasan Sasaran Penting Kategori 2, Melaka. This is because to ensure that the entry of visitors is fully monitored by their parties and to improve their current system being used (Abdullah, 2018).

Currently, TM, Melaka only implements manual visitor management practice, where visitor's application is processed through email and application letter, sometimes it takes a long of processing time for them to approve the application. Then, all the visitor's data are recorded on paper which is not secure because no record is saved. Database on paper is not efficient and costly to maintain. It also includes with the process of check-in and check-out at the Sasaran Penting locations which also not secure because they cannot track the identity of the visitors. This is because each visitor only needs to sign at the check-in and check-out form on the guest book. Additionally, this manual system is extremely vulnerable, where the premises may be

vulnerable to certain security threats as all information about visitors is only recorded on the paper.

The automatic visitor management system is an effective way to maintain a high level of security within the organization and minimize risks by preventing unauthorized site access including unwanted visitors, property theft and vandalism and the potential for kidnapping. It is usually used by organizations that receive a simple and high number of visitors (Kalamazoodirect, 2016). This is because of all visitors are required to report to a security guard for verifying their identity upon check-in into the visit's location by using their Identification Card. Visitor management systems can handle visitors more quickly and effectively, able to store visitor and staff information to improve security efficiency, cost-effective solutions to maintain a safe and secure environment, generate reports automatically and provide detailed information about on-site visitors.

1.3. Problem Statements

The process of current practice in managing visitor into Kawasan Sasaran Penting Kategori 2 by TM, Melaka has taken a lot of time to respond to the visitor that their application was approved or rejected. This is because of the multilevel of approval and email as a communication medium between each level. Hence, the applicant has no way to track their application status because the parties involved in approving the application was not updated the current status of that application. The visit request application was also not managed in an efficient way because of the late feedback to visitor and person in charge to handle the visit. Then, the visitor's record in hardcopy form, not in a digital form was difficult to generate the record and hard to make data analysis. Lastly, the current system was not secure because it does not save the visitor’s record and cannot check the visitor’s information during the visit’s day because all the information is on paper.

1.4. Objectives

There are several objectives to be achieved in this project:

1. To design a system based on the collected user's requirement.

2. To implement the Sasaran Penting visit application and administration system.

3. To conduct a functional and non-functional testing to verify whether the system fulfil all the identified requirement provided by user.

1.5. Scopes

The scopes of this project are as follow:

1. Only emphasis on two of Sasaran Penting locations of Telekom Malaysia in Melaka region which is Earth Satellite Station at Lendu, Submarine Cable Station at Pengkalan Balak.

2. To design and development two system modules: administrator and visitor modules in Sasaran Penting Visitor Management (SPVM) system.

3. Integrate these modules with another modules and subsystem in SPVM system.

1.6. Expected Results

Two modules that able to be integrated and successfully run in SPVM system. Then, visitors are able to use this system to make an application and monitor the status of their application easily. Security manager will be set as an administrator to manage this system. Lastly, this project will able to produce a system that to integrate the several modules and subsystem in the SPVM system. Below show the preliminary results for these modules.

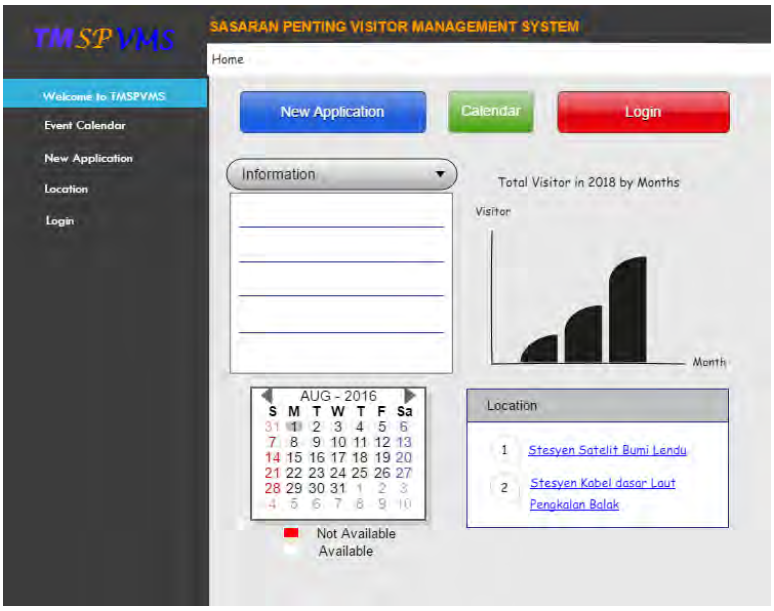

Figure 1.1: Landing page of the system

Figure1.2: Log in page

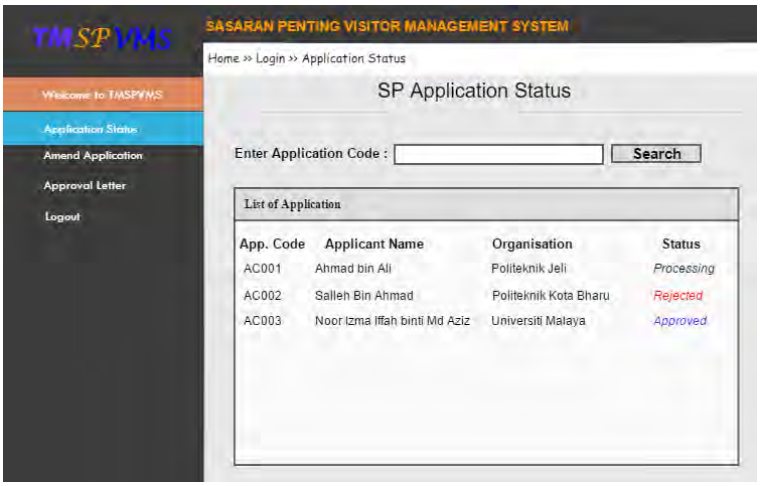

Figure 1.3: Main page for visitor

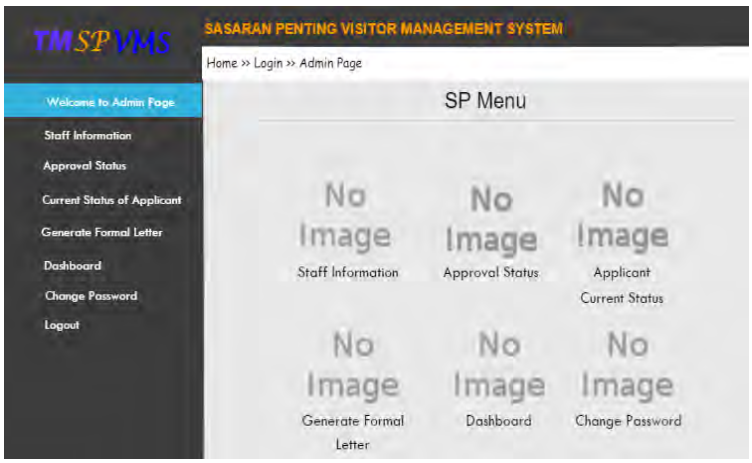

Figure 1.4: Main page for admin

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Literature review has played an important role as the early phase in developing this project because it can help to identify the greatest method to achieve the objectives of the project. This is because it can identify problem that occurred in current system and it can be upgraded to achieve the successful system. Then, it also can know the best software that should be used to develop this system. This chapter tends to discuss and study the literature related to the background of the company, identifying the problem of current system in managing visitors to Sasaran Penting location using manual process in Telekom Malaysia, Melaka; comparing with the existing system of the visitor management system, identifying various research gaps and justifying the need for this research. Lastly, to identify the suitable software that can be used in developing and implementing this project.

2.2 Company Background

2.2.1 Telekom Malaysia Berhad

TM (2017), states Telekom Malaysia Berhad (TM) is an important company in Malaysia which converge the communications services provider. TM provides the service network and the comprehensive communication-solving in broadband, data and fixed lines. TM has a well-positioned to move Malaysia as a regional Internet hub and digital gateway for Southeast Asia. As a market leader, TM is driven to create shareholder value in a competitive environment. The Group places emphasis on delivering better customer

experience through continuous improvement of customer service quality and innovation, despite the focus on improving operational efficiency and productivity.

TM is well positioned to propel Malaysia as a regional Internet hub and digital gateway for South-East Asia to utilize its collective expertise, global and infrastructure network. TM remains committed in its transformation to a new generation of communications provider to establish an integrated digital lifestyle to all Malaysians, and to cooperate in promoting the country towards a high-income economy.

TM is consistently recognized for high standards in Corporate Governance as well as the Prime Minister's CSR Award for Best Workplace Practices two years in a row, in 2009 and 2010. TM has received 5 National Corporate Report Awards (NACRA) 2010, especially the Platinum Award for CSR and 4 Sullivan Malaysia Excellence Awards 2011, including Broadband Service Provider of the Year.

2.2.2 Menara TM MITC Ayer Keroh

Menara TM MITC Ayer Keroh is one of TM branch in Melaka. Menara TM Melaka was launched by Tuan Yang Terutama Tun Dr Mohd Khalil bin Yaakob. Menara TM Melaka was built with 14 floors, which contain 4 lifts, a ‘surau’ on the 2nd floor, 4 main meeting rooms on the 8th floor, cafes and nurseries in the lobby. The building is occupied by nearly 400 employees which consisting of 17 units and branch management. Most senior management TM is conducting discussions, planning production and management-related projects; while the instructions and division of labour are for technical implementation.