MUSEUM DATABASE MANAGEMENT SYSTEM

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BORANG PENGESAHAN STATUS TESIS

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MUSEUM DATABASE MANAGEMENT SYSTEM

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This report is submitted in partial fulfillment of requirements for the Bachelor of Computer Science (Database Management)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2016

DECLARATION

I hereby declare that this project report entitled

MUSEUM DATABASE MANAGEMENT SYSTEM

is written by me and is my own effort and that no part has been plagiarized without citations.

STUDENT : _____ Date : 30/8/2016

(NUR HASLINA BINTI HASSAN)

I hereby that I have read this project report and found this project report is sufficient in term of the scope and quality for the award of Bachelor of Computer Science (Database Management) With Honour.

SUPERVISOR : _____ Date : 30/8/2016

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DEDICATION

To my beloved family.

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ABSTRACT

In general, the report discuss on the process of developing a system named Museum Database Management System (MDMS) from starting phase until the end phase. The report start with the introduction chapter that comprises of project background, problem statements, the objectives of developing the system, the significance of the project and the boundary of the system. It continues with project methodology and planning chapter that discuss on the methodology to be used in developing the system which is in this case, Agile Software Development Methodologies. It simplicity and work minimization concept makes it an ideal method in developing the system. Gantt Chart has been used as a guideline in order to complete the system within the time given. The report went more detail in the analysis chapter where the functional and non functional requirement have been specified in level 0 of data flow diagram and level 1 of data flow diagram. The diagram indicates the flow of data through different processes or function in the MDMS. In the design chapter, the system architecture design that have been implemented for the system is in three-tier design which comprises of presentation tier, application tier and database tier. The Entity Relationship Diagram (ERD) of the system consists of eight (8) tables named Activity, Employee, Asset, Ticket Info, Visitor, Visit, Museum and Booking. The implementation chapter shows all the Data Definition Language (DDL), Data Manipulation Language (DML), stored procedures and triggers used in developing the system. After the completion of implementation part, testing activity is conducted with a list of test requirement is being specified in the form of test cases and being test in the form of test plan. The report is concluded with the possible weaknesses and strengths and suggestion of improvement have been stated for guidance of future developer.

ABSTRAK

Secara umum, laporan ini membincangkan tentang proses membangunkan sistem, Museum Database Management System (MDMS). Laporan bermula dengan bab pengenalan yang terdiri daripada latar belakang projek, pernyataan masalah, objektif, kepentingan projek dan skop sistem. Laporan ini diteruskan dengan bab metodologi projek dan perancangan yang membincangkan metodologi yang akan digunakan iaitu, Kaedah Pembangunan Perisian Agile. Metodologi ini menggunakan konsep pembahagian tugas. Carta Gantt telah digunakan sebagai panduan untuk melengkapkan sistem ini dalam masa yang diberikan. Laporan menjadi lebih terperinci dalam bab analisis di mana *functional requirement* dan *non-functional requirement* telah di nyatakan. Dalam bab reka bentuk, reka bentuk seni bina sistem yang telah dilaksanakan untuk sistem ini ialah *Three-tier Architecture*. *Entity Relationship Diagram* terdiri daripada lapan (8) jadual iaitu Aktiviti, Pekerja, Aset, Info Tiket, Pelawat, Lawatan, Muzium dan Tempahan. Bab pelaksanaan menunjukkan *Data Definition Language* (DDL), *Data Manipulation Language* (DML), *stored procedure* dan *trigger* yang digunakan dalam membangunkan sistem. Kemudian, aktiviti ujian dijalankan. Dalam bab kesimpulan, kelemahan dan kekuatan sistem dan cadangan penambahbaikan telah dinyatakan untuk panduan pengkaji pada masa depan.

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CHAPTER I

INTRODUCTION

1.1 Project Background

Museum is one of the most popular places to be visited among local and foreign tourists. Usually, there are many visitor visit museums during holiday or festival seasons. Hence, many data will be obtained and must be manage properly for future use. It is difficult to manage all the scattered information without a proper database management system. Finding and using data in growing collection of file folders become time consuming. There are high possibility to lose data when using file-based system as it adequate for small amounts of data. Therefore, an easier access system is needed.

There are several factors that are needed to be focused in museum environment. The most important factor for a museum is the visitors. It can be said that a successful museum depends on the visitor that visit the museum. Museum need to manage a lot of visitors daily and among them, there is various types of visitors and can be classified into several groups such as adult, children, foreigner and disabled. The classification of visitors is very crucial for a museum to analyze which groups of people frequently visit

the museum. The second important factor for a museum is the events. Museum need to organize an event to promote the museum as well as to attract the visitors to visit the museum. It would be great if the museums have a centralized system that allow the employee of the museum to register any upcoming events and at the same time the public can view all the events that have been registered. Nowadays, most of the museum offers the visitors to do early booking. It is very beneficial as the employee of the museum can predict the total visitors that will be visiting the museum each day and can make enough preparation to welcome them.

Besides that, museum is very popular as a place that store many types of artifacts or assets. It might be the reason why people want to visit museum. It is one of the attractions for people to visit museum to have a real, short-distance view of artifacts that have been presented at the exhibition hall of a museum. The name and description of the artifact, the date when the artifact have been registered and the image of the artifact are very important information that museums need to manage for future used. Statistical reports also play an important role in museum environment. Report such total visitors that visit the museum daily is very important to assist the employee of the museum to see the pattern of visitors visit the museum throughout the year so that the museum can make an appropriate plan in organizing suitable events or activities.

1.2 Problem statements

1. It is difficult to manage all the scattered information.

User faced difficulties because there are many separated system to do works. This makes the data management inefficient and increasing the data redundancy problems. For example, if the staff wants to record information about booking, the staff need to open a physical file or other system to do so. Same goes to the information about assets. If the curator wants to register the asset, they need to open different system to record it.

2. It is difficult to manipulate and retrieve data.

User faced difficulties to manipulate and retrieve data when needed. For example, if the curator need to find all the asset that have been registered on March 2009, the curator need to get the related file and start searching manually which is time consuming and lack of data integrity. The curator tend to do mistakes on searching the asset as they need to do that manually.

3. It is difficult to provide a statistical report with good evidence.

User faced difficulties to provide a statistical report with good evidence due to the current system that still did not implement a systematic computerized system. For example, if the curator wants to produce a report, the curator need to do the report based on the record that have been saved. Sometimes, the record is missing or damage that leads to an unreliable report.

1.3 Objectives

1. To develop a Museum Database Management System that can reduce data loss, avoid data redundancy problems, and implement data manipulation.

2. To produce a reliable statistical report for the Museum Database System Management.

1.4 Scope

There are three types of actor that involve in this system, that are visitor, staff and curator. The visitor is the one that act as a customer for a museum while the staff involve in administration work. In the other hand, the curator has responsibility to manage the assets and the artifacts of the museum. Hence, the three actors have their own page and requirement when using the system. The modules involve in the system are visitor module, staff module and curator module. The three modules have different types of views and function that the system provide to the actors.

Visitor Module

Visitors need to fill in visitor form to register into the system. Upon registration, visitors can fill in booking form to make a booking to a specific event. Besides that, the visitor can used this system to view on past and upcoming event details as well as museum's details. The visitor also can view their past visit to the museum to keep track on when the visitor visit which museum.

Staff Module

Staffs need to fill in staff form to register into the system. After the staff log into the system, the staff can register visitor's visit daily and any activities or events that the museum want to organize. Furthermore, the staff can update their own details and the information of activity managed by the museum. Staff also can view booking and visit information as well as visitor's details. The visit information is organized according to the types of ticket and the total ticket sold for each day together with the current total visitor the museum receive so far. Besides that, the staff can view booking information such as the name of visitor who made the booking, when the booking have been made, how many tickets that the visitor booked for which events as well as the total payment that the visitor is expected to pay for the booking.

Curator Module

Curator can register asset into the system and update the information when necessary. The curator can view all transaction happen in the museum. For an instance, the curator can view booking and visiting details daily and any upcoming or past events handle by the museum. The curator also can view reports, staff related details and asset information. The curators also have the authority to remove staff information that are no longer work at the museum and view the archive information.

1.5 Project significance

The actor that will get benefits from this system are visitor, staff and curator. Each of the actor have specific function, view and task that are provided by the system. Table 1.1 shows the significance of the project to the visitor, staff and curator.

Table 1.1: The significance of the project to the actors

No	User	Significance
1	Visitor	Can sign up to the system and get updated information of the activities held by the museum
		Can register booking into the system
2	Staff	Record visitor's visit daily
		Record information about the activities and programs held in the museum
		Update the information on activities when necessary
3	Curator	Register information related to the assets and insurance
		Produce reports for total visitors and patterns of visitors who visits the museum

1.6 Expected Output

With this database system, it is expected that the institution will know which museum has the highest visit from visitors and which group of visitors frequently visit museum (in terms of gender or race). It is also expected to provide report on total visitor of each museum so that the trend people visits museum can be analyze and appropriate action can be made in terms of promotions and activities.

This museum database management system can centralized the overall system from all museum branch in Malaysia and manual file system at some of the branch can be substituted by this system. In the future, there is no more collection of file folders kept in file cabinet which use a lot of space and is time consuming when it comes to searching and cumbersome. This database system is expected can help the institution operation went smoothly. Table 1.2 shows the expected output of the project in tabular format.

Table 1.2: The expected output of the project

No	Expected Output
Output 1	Accurate report for total visitors who visits the museum in tabular graph format
Output 2	Pattern of visitors who visits the museum based on gender and race
Output 3	To display a screen for the visitor to key-in information of booking
Output 4	A form for the curator to register new assets
Output 5	A form for the staff to register any activities and programs held in the museum
Output 6	A form for the museum residents to register to the system
Output 7	A form for the visitor to sign up into the system

1.7 Conclusion

As a conclusion, this system can be used to help in managing information and reduce data loss and data redundancy problems, do data manipulation and data retrieval easily and can calculate the data efficiently and produce a reliable statistical report. The next chapter of this report will discuss on project methodology and planning of the project.

CHAPTER II

PROJECT METHODOLOGY AND PLANNING

2.1 Introduction

This chapter will discuss on project methodology and planning throughout the system development and specific chart used to illustrate it. Planning plays an important role in developing software. This chapter also will state in detail the dates and milestones involve within the process.

2.2 Project Methodology

The methodology that will be used while completing this project is Agile Software