OUTING MANAGEMENT SYSTEM

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OUTING MANAGEMENT SYSTEM

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

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
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2011

DECLARATION

I hereby declare that this project report entitled

OUTING MANAGEMENT SYSTEM

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

STUDENT : _____ Date: 7.7.2011
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SUPERVISOR: _____ Date: _____
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DEDICATION

To my beloved parents, supervisor, lecturers, and my friends for giving assistant and support to me to complete this project successfully.

ACKNOWLEDGEMENTS

Alhamdulillah, praise to Allah s.w.t, I am very pleased and grateful of being able to finish my final year project. First and foremost, I would like to thank my beloved parents and my family for their support and motivation that they gave to me not only for my final year project but also from the very beginning of my study in UTeM.

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ABSTRACT

Outing Management System (OMS) is a web based system that has been developed for Sekolah Izzuddin Shah, Ipoh. There are 3 user in this system which are administrator, wardens and staff. The system allow the user to easily manage the outing process, from the giving permission to students until the statistics that can be viewed by the wardens. All the manual process that currently used is changed to the computer based system. The wardens can give permission, remove permission and block a student from go out from the school. The list of the blocked student on certain date can be printed out. The student, once they get the permission, can go out from the school by scanning their student ID at security post. The system will check whether the student is allowed to go out or not. The same situation happen when the student enter back to school. News also can be posted to inform other user of the system. Also, report can be generated by day or month which show the statistics of the students that go out at certain period. The development of this system is done by using PHP language and MySQL as the database management.

ABSTRAK

Outing Management System (OMS) ialah sebuah aplikasi web yang dibangunkan untuk Sekolah Izzuddin Shah, Ipoh. Terdapat 3 pengguna dalam sistem ini iaitu administrator, warden dan juga pegawai. Sistem ini memudahkan pengguna untuk menguruskan proses keluar kawasan untuk pelajar, daripada memberi kebenaran kepada pelajar sehingga kepada statistik yang boleh dilihat oleh warden. Sistem manual yang diguna pakai sekarang telah ditukarkan kepada sistem berkomputer. Warden boleh memberi kebenaran kepada pelajar, membatalkan kebenaran dan juga menghalang pelajar daripada keluar kawasan. Senarai pelajar yang dihalang daripada keluar kawasan boleh dicetak keluar . Selepas pelajar mendapat kebenaran untuk keluar kawasan, mereka perlu meimbas kod bar yang terdapat pada kad pelajar. Sistem akan memeriksa sama ada pelajar itu dibenarkan keluar atau tidak. Situasi sama akan berlaku semasa pelajar itu mahu masuk semula ke sekolah. Berita juga boleh dihantar unuk memberi berita-berita terkini kepada pengguna sistem yang lain. Laporan juga boleh dikeluarkan mengikut hari atau bulan yang menunjukkan statistik pelajar yang keluar kawasan pada masa tertentu. Pembangunan aplikasi ini telah dilakukan dengan menggunakan PHP sebagai bahasa pengaturcaraan dan MySQL sebagai bahasa pangkalan data.

LIST OF ABBREVIATION

OMS	–	Outing Management System
SMS	–	Short Message Service
CCD	–	Charge-Couple Device
SDLC	–	System Development Life Cycle
ERD	–	Entity Relationship Diagram
GUI	–	Graphical User Interface
PSM	–	Projek Sarjana Muda
PHP	–	Personal Home Page

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CHAPTER I

INTRODUCTION

1.1 PROJECT BACKGROUND

SMA Izzuddin Shah is a boarding school located at Ipoh, Perak. The students of the school are given permission to go out from the school to go to town. Wardens are responsible in giving the students a permission to go out to the town by setting a date and time. But, the current system is still hard and not efficient, where the system is using an outing book. Each student have to go and get wardens signature into their outing book. Then, they have to left the outing book at the security post, and write their name and current time in a log book before they can go out. When they come back to enter the school, they need to take back their outing book and write the current time plus put a signature in the log book.

This system is an transformation from the current system to the computer-based system which named Outing Management System or OMS. This system will be used at Sekolah Izzuddin Shah but also can be implemented to another boarding school as well. This system will solve all the problem that the current system faced and importantly will increase the efficiency of the outing process. In addition, this system will easy the wardens and staff where most of the process will be completed in the computer.

From this project, I am able to apply all the software development skills that I have learned before. This skills include the process from the beginning of the project which is planning phase until the end of the development. Also, this project will expose me to new skills that not teaches in the class or lecture. While developing this project, I am also able to detect my weakness in any area in the project, which I can discover and enhance my skills for the future.

1.2 PROBLEM STATEMENT

There a some weakness in current manual system that Sekolah Izzuddin Shah use, which are:

a) Each time the students are allow to go for outing, they need to queue up and wait for each student to write their name, date and current time into the log book at the security post.

b) The staff at the security post need to check each student's outing book to make sure they have got wardens approval. The staff also need to make sure that the time and date stated in the outing book is valid compared to the current time.

c) Wardens are difficult to track how many students are currently out of the school. If they want to do so, they need to go to the security post to count the outing book that left by the students.

d) To check whether if there are students that go out illegally, wardens need to count the number of names in the log book and make sure that it match the total number of outing book.

e) Each time the wardens want to give permissions to students, they need to put down a signature into each student's outing book. Just imagine how much time the wardens will take if there are 100 students that ask for permission at a time.

f) Students can easily cheat to get the permission to go out by try to imitate the warden's signature.

g) Wardens are hard to check the student that has been block from go out at certain date because of the discipline case. If the wardens accidentally give permission to this student, they are difficult to remove the permission back. They need to find the student and cancel the signature that written before.

h) Wardens are difficult to compile a report on how many students that go out, how many students that late to enter back to school in certain date or month.

1.3 OBJECTIVE

This project aims to develop a computer-based system that can handle the outing process of Sekolah Izzuddin Shah student efficiently. This system will easy the wardens to manage and track the student outing record. Also, this system will decrease the time taking in managing the student outing process. For students, they can shorten time taken at the security post by just scanning their barcode that embedded into their student card to allow them to go out from school.

1.4 SCOPE

Only registered users are able to use this system. The users will be registered by the admin. Other than to manage the outing system for school, this system also able to be implemented to any organization that allow their staff to go out for a certain of time. In addition, this system use a client-server technology, where the database will be placed at the center, allowing the client to retrieve the data directly.

1.4.1 SCOPE OF USER

This system is divided into three categories of user.

Table 1.1: Scope of User

User	Functionality
Administrator	Register and delete the wardens and staff. Other than that, admin can view student outing reports and post news.
Warden	Add, Update, Delete and Search about students information. Wardens also can give permission, remove permission, move students to block list, print student block list, post news, view and print report and edit their profile.
Staff	Staff can run the barcode scan window, edit their profile and view news.

1.4.3 SCOPE OF FUNCTIONALITY

This system is divided into six main modules.

Table 1.2: Scope of Functionality

Module	Description
Add, Update, Delete and Search	This system provides the module add, update, delete and search about the wardens, staff and students.
Login	This system provide login module to verify and validate the right user. Authorized users are allows to interacting with this system.
Sent Password To The User	After the admin has successfully registered a user, this system will send an email to the user to give their initial username and password. But, if the user do not have an email, admin can select to manually give the username and password to the user.
Grant Permission	The system allow the wardens to grant permission to the students to go out from school. Wardens can search the students based on their class, name or student ID.
Block student	This system allow the wardens to select students to be in the block list. All names in this block list will not be able to get permission from the wardens.
Report	The system is able to generate reports for the admin and warden. This report is a total student that go out, student that come back late and others based on specific date or by month.
Generate Barcode	Each time a new student is registered by the warden, a barcode will be generated and able to be printed. This barcode need to be used by the student to scan at the security post each time they want to go out and enter back to school.
News	The system is capable of producing admin and wardens news. The news will be displayed at the home page at each page of the user.

1.4.4 SCOPE OF PLATFORM

Below are the specific project requirements in terms of software, hardware and platform to develop the Outing Management System:

- Operating System – Window 7 Ultimate
- Web Browser – Mozilla Firefox 3.6.16
- Software - Adobe Dreamweaver CS3, Wamp server

1.5 PROJECT SIGNIFICANCE

From this system, wardens of Sekolah Izzuddin Shah will easy to manage the outing process for their students. They can easily grant permission, generate reports, block students from outing and others just in their computer. From students perspective, they do not need to queue up at security post before going out. They just need to scan their barcode and the system will automatically detect whether the students get the permission or not.

1.6 EXPECTED OUTPUT

I expzect to successfully develop a web-based system that can handle the outing process of Sekolah Izzuddin Shah efficiently. Hopefully this system will easy the wardens, staff and students at the school by handling the process faster and keep all information securely in database.

1.7 CONCLUSION

As a conclusion, this system is being develop in order to help the outing process of Sekolah Izzuddin Shah. This system will be able to use to solve all the problem and weakness from the previous manual system. In next chapter 2, Literature Review and Project Methodology will be discussed.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 INTRODUCTION

This chapter main purpose is to describe and review the past research that can be used as a material to this project. According to Haywood and Wragg (1982), the purpose of reviewing previous works is to guide through the kind of work that others have done related to the project field. Based on this review, it may help to decide which methodology to be used in developing the system. The literature review tells the reader that the writer has made research based on the title of the project.

Another part of this chapter is the explanation of the methodology that will be used in this system. Methodology is a recommended method or process of activities that has been used by the developer in developing the system. Based on Avison and Fitzgerald, the reason of choosing the right and best methodology is for:

> "...better end products (meeting user demands); a better development process (improving developer control and productivity); and a standardized process (enabling better systems integration and the benefits of a common approach in an organization). (Avison and Fitzgerald, 2003b)."

Description about the methodology used will be briefly described in the section. Besides that, project schedule and milestone also will be stated and explained.

2.2 FACTS AND FINDINGS

Facts and findings describe about the existing system that available and their problems. This explanation will leads to a definition of a set of options that available that user can choose to implemented into the system.

In the first section, the review describe the domain that related to the system that will be developed in this project. The second section includes the review of the existing system. The review aims to study the current flow of the process.

2.2.1 DOMAIN

This topic will briefly discuss about three main domain of this system which are:

a) Barcode
   - This area will reviewing the barcode technology and its ability in enhance a system.

b) Barcode Scanner
   - This area will reviewing the barcode technology.

c) Web-based system
   - This area will reviewing the revolution of web-based approached and its ability.

2.2.1.1 Barcode

Nowadays, a lot of system are using barcode technology to enhance the system. Usually this barcode is used in business system application, where each product will be given an unique barcode to easy for them to scan and capture its product code.

> "A bar code can best be described as an optical Morse code. Series of black bars and white spaces of varying widths are printed on labels to uniquely identify items. The bar code labels are read with a scanner, which measures reflected light and interprets the code into numbers and letters that are passed on to a computer (Data Identification System, 2002)."

A bar code symbol is a combination of a series of light and dark regions, usually in the rectangle shape. The widths of the dark regions, white regions and the widths different between them indicate the encoded information. From the combination of this regions, a series of code will be produced in number or letter format. Typically, the barcode symbol includes a quiet zone, start code, data characters, stop code ade trailing quiet zone. Information densities of each barcode are different and it contains a different number of elements in a given area which representing different amount of encoded data.

Figure 2.1: Examples of Bar Code

Bar code has a great ability in decreasing the process time involved. Instead of inserting the code by pressing on the keyboard, bar code offer the easiest way to capture the code by scanning the bar code using bar code scanner.

2.2.1.2 Barcode Scanner

"A bar code scanner is a scanning device which can read, or sense, bar code information and which includes means for converting bar code information into digital information (Electronic Information Online, 2006)."

A barcode reader consist of a multiple device which is a scanner, a decoder either it is built-in or external and a cable used to connect the reader directly to the computer. Most of the bar code readers contain decoder which analyze the bar code image data provided by the photo conductor and send the bar code's content to the scanner's output port. There are five kinds of bar doe readers which are pen wands, slot scanners, image

scanners, laser scanner and Charge-Couple Device (CCD) scanner. For this project, laser scanner is used to scan the bar code.

2.2.1.3 Web-Based System

For this project, a web-based system will be used in developing it. From the electronic source, web-based system is described as follow:

> "Web Based Software is a specific and relatively new class of software. All software components usually resides on a web server. Access to the web based software application is through a web-browser, the web-based software only needs to be installed on one web server machine. Users can gain quick and timely access to a wider variety of existing information, anytime, and from anywhere in the world. (WebAsyst Glossary, 2007a)"

"Online" term is usually related with the web-based system. Online can best be define as:

> "A general term for when one computer is interacting directly and simultaneously with another computer. Many sources of information are available online (Instruction and Information Litency, 2007)."

Data access during online process is secure, where there exist the GRANT option in MySql Server. This option prevent the data from unauthorized person to access it. Other than that, the data that being used in the system can be encrypted, so that only authorized person can see the real data that being processed.

The ability of web-based system, is the user can access to the system anywhere as long as there are internet connection to the computer. The system also allows multiple user to access at the same time.

2.3 PROJECT METHODOLOGY

For this system, System Development Lifecycle (SDLC) is chosen as the approach or a method that will be used in developing the system. SDLC approach offer a great probability of a successful system development effort.

2.3.1 SYSTEM DEVELOPMENT LIFE CYCLE (SDLC)

The System Development Lifecycle (SDLC) is a conceptual model that can be used in developing system that describe each stages involved from the feasibility study through the maintenance of the completed system.

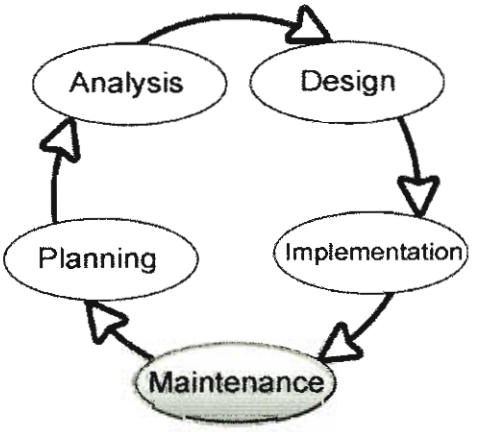

Figure 2.2: System Development Lifecycle Model

A. Planning

Planning is the first stage in SDLC. Preliminary investigation need to be done to verify the current problems. Then, a proposal which describe the introduction of the project will be sent to the supervisor to get their approval. The introduction includes project background, problem statement, objective, scope, project significance, expected output and conclusion. Next, the methodology that will be used will be

identified and the project requirements such as software requirement, hardware requirement and others need to be stated. The last part of this stage is to develop the schedule task and milestone for the project. This milestone will describe about the task that need to be done at certain time.

B. Analysis

Analysis is the second stage in the SDLC. In this stage, the problem that have been proposed before will be studied and analyzed in detail. This research may take a long time to finished depends on the size of the project. The research involved the study of the academic paper research such as books, journals, magazines, articles and conference paper. Then, the detailed data and process model need to be developed. Other than that, the functional and non-functional of the system also need to be stated. The functional requirements will describe in detail what the system are able to do.

C. Design

The third stage of the SDLC is the design phase. The design phase will be started by describing the high level view of the system. Then, the conceptual database which involve business rules and Entity Relationship Diagram will be designed. The Graphical User Interface (GUI) also will be designed which is the medium to connect the user to the system.

D. Implementation

During this stage, the application and the database management software will be installed. During the initial stage of this process, the system enters the cycle of coding, testing and debugging until the system is ready to be implemented. After the installation of the system is completed, the software and hardware used will be tested. Usually, this stage will take the 50 to 60 percent of the total development time. After the testing process is completed and the function of the system is working well, the final documentation will be reviewed. The system is ready to be used at the end of this phase.

E. Maintenance

After the system is been used for a certain of time, the end user might has request for a change to the system. Those changes generate system maintenance activities, which can be grouped into three types which are corrective maintenance in response to the system error, adaptive maintenance due to changes in the business environment, and perfective maintenance to enhance the system. But, for the development of the PSM, this process will not be involved.

2.4 PROJECT REQUIREMENT

2.4.1 SOFTWARE REQUIREMENT

The software requirements to develop this project are:

Table 1.3: Software Requirement

Software	Description
Microsoft Word	Documentation Report
Microsoft Project	Project Planning and Scheduling
Microsoft Power Point	Presentation Slide Preparation
Microsoft Office Visio 2003	Modeling
Windows 7 Ultimate	Operating System
MYSQL	Database System
Adobe Photoshop CS3	Editing Image Used In Applicaiton
Adobe Dreamweaver CS3	Application Design Tool
WampServer 2	Windows Web Development Environment