

**SCHOOL MANAGEMENT SYSTEM (SMS)**



**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

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# SCHOOL MANAGEMENT SYSTEM (SMS)

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## DEDICATION

I would like to express my special dedication to my beloved parents and supervisor who have been giving me to guidance and encouragement throughout my project. Especially, please allow me to dedicate my greatest gratitude to the following significant advisors and contributors.



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## ABSTRACT

School Management System (SMS) is a web based system that helps student, teacher and parent to manage and view their daily record. Currently the system that school is using paper based with physical book or file for managing all the record and data. It is time consuming when doing things manually and easily get damaged by a fire, insects or by a natural disaster like tsunami. When a student register, all the personal detail are recorded in a file and those files are stored in a special cabinet. If want to searching student previous record management will be in a great problem and take time to process. Therefore, data is not always reliable as it is hand written and some human error in calculate student academic marks are done by manually. Besides that, inconveniences parent always need to go to school take his/ her children academic result report. Therefore, this SMS system can improve the efficiency of school management by replacing existing manual paper based system. In the same time, can minimize human errors in calculate student academic result mark and without data redundancy by enforcing key constraints. This system convenience parent use to check their children academic result and attendance report while also convenience teacher to searching and keep data of past dozen years into a proper system with a database. Furthermore, SMS is use Waterfall Model based on Database Life Cycle (DBLC) as my methodology to develop. Because waterfall model have a lot advantages that is simple and easy understand. It is also easy to manage due to the rigidity of the model each phase has specific deliverables and a review process. Thus, DBLC contains six important phases that is database initial study, database design, implementation & loading, training & Evaluation, operation and maintenance & Evaluation. As a result, SMS will be develop for school management to improve the procedure or progress more efficient and evolve the management of information from manual world to computerized system in order to solve the current problem those are occurring in the management.

## ABSTRAK

Sistem Pengurusan Sekolah (SMS) adalah sistem berasaskan web yang membantu pelajar, guru dan ibu bapa mengurus dan melihat rekod harian mereka. Pada masa ini sistem yang sekolah menggunakan kertas berdasarkan buku atau fail fizikal untuk menguruskan semua rekod dan data. Ia membazir masa apabila melakukan perkara secara manual dan mudah rosak oleh api, serangga atau oleh bencana alam seperti tsunami. Apabila pelajar mendaftar, semua butiran peribadi direkodkan dalam fail dan fail tersebut disimpan dalam kabinet khas. Jika ingin mencari pelajar pengurusan rekod terdahulu akan menjadi masalah besar dan meluangkan masa untuk memproses. Oleh itu, data tidak selalunya boleh dipercayai kerana ia ditulis tangan dan ralat manusia boleh berlaku dalam mengira markah akademik pelajar dilakukan secara manual. Selain itu, ibu bapa perlu selalu pergi ke sekolah untuk mengambil laporan hasil akademik anaknya. Oleh itu, sistem SMS ini dapat meningkatkan kecekapan pengurusan sekolah dengan menggantikan sistem berasaskan kertas manual yang sedia ada. Pada masa yang sama, dapat mengurangkan kesilapan manusia dalam mengira markah akademik pelajar dan tanpa redundansi data dengan menguatkuasakan kekangan utama. Sistem ini menggunakan ibu bapa kemudahan untuk memeriksa hasil akademik anak dan laporan kehadiran mereka sementara juga guru kemudahan untuk mencari dan menyimpan data selama beberapa belas tahun ke dalam sistem dengan pangkalan data. Selain itu, SMS menggunakan Waterfall Model berdasarkan Database Life Cycle (DBLC) sebagai metodologi saya untuk berkembang. Kerana Waterfall Model mempunyai banyak kelebihan yang mudah dan mudah difahami. Ia juga mudah untuk dikendalikan kerana ketegaran model setiap fasa mempunyai hasil yang khusus dan proses kajian semula. Oleh itu, DBLC mengandungi enam fasa penting iaitu kajian awal pangkalan data, reka bentuk pangkalan data, pelaksanaan & pemuatan, latihan & penilaian, operasi dan penyelenggaraan & penilaian. Akibatnya, SMS akan dibangunkan untuk pengurusan sekolah untuk meningkatkan prosedur atau kemajuan yang lebih cekap dan berevolusi pengurusan maklumat dari dunia manual kepada sistem komputerisasi untuk menyelesaikan masalah semasa yang berlaku dalam pengurusan.



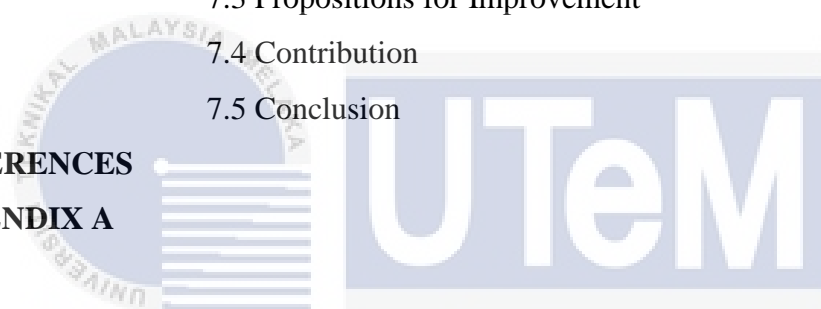
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## LIST OF ABBREVIATIONS

SMS	-	School Management System
RAD	-	Rapid Application Development
DBLC	-	Database Life Cycle
DFD	-	Data Flow Diagram
GUI	-	Graphical User Interface
DDL	-	Data Definition Language
DML	-	Data Manipulation Language
ERD	-	Entity Relationship Diagram
NF	-	Normal Form
PHP	-	Hypertext Pre-processor
CPU	-	Central Processing Unit
OS	-	Operating System

## CHAPTER I

### INTRODUCTION

#### 1.1 Project Background

Nowadays, every educational institution is facing challenges regarding the proper arrangement of their day to day activities, either it can be a teacher, student or a management. This system provides the detail structure of the school campus and its departments. School management system synchronizes the working of all the departments. It looks on all aspects of a school, its students, teacher, marks, result and other co-curricular activities. Therefore, a school management system is one of the efficient that we can think of. As a result, the following proposed system aims to develop web system for school management. This system can used to manage the data of all type of educational institutes. Renata Lemos and John Van Reenen (2014) state that “Good management in schools has a stronger effect than class sizes or quality teaching, according to new international research.”

In addition, the main modules involved in this system are login, forms and reports. For login modules is used to check whether the user is an authorized person to use the system or not. For this the user should give the correct username and password. There have three type of main users will be involved in the school system management system. There are admin, student, teacher and parent. Admin can control whole school management system, its teacher and every other person or thing that is associated with the school. Admin has power to create, update and

delete any data of the system and able to view the profile of any user in the system. Teacher can view all student profile, mark the attendance of the students and key-in student academic result into database. For student just can login own personal profile to view the examination result and edit own profile. While parents can monitor the daily activities of their children in the school. They will be able to view the attendance and the mark of the children search by used student identification no/IC No.

Furthermore, the forms module consists of the following sub modules. There are student registration form, student marks form, teacher detail form, subject detail form and attendance form. The student registration form is designed for registering the new student detail. The student marks form is designed for key-in the exam marks of the students for a particular course or and individual student. The teacher details form is designed for entering the staff details and other relevant details. The subject detail form is designed for entering the different subject available in the school and other relevant details. The attendance form is designed to record the student and staff each month attendance record. The last modules is report module, this module is mentioned data are stored in the back end and can be retrieved as reports with filtering options. The following are the reports can be taken student academic result report and attendance report.

Lastly, of this system all the details regarding school, whether it is small or big will be computerized. As this school management system will be centralized, the chances of the duplicate data in the system are close to nil. Teacher no need take the student attendance and key-in student academic result by using manually and writing on the papers. In today's rush hour of the life, it is difficult for a parent to go to the school to take his / her children academic result. Parent can view his/her children academic result and attendance through this system.

## 1.2 Problem Statements

Currently the school system is a manual system. When a student register, all the personal detail are recorded in a file and those files are stored in a special cabinet. Calculate of student academic marks or result are done by manually. As the current system is a file based system, management of school has put much effort on securing those file. They can easily get damaged by an insects, fire or even by a natural disaster like tsunami. Keeping files takes much time and wastes much precious man hours. Although accuracy of calculation are done by manually cannot believe, it's not a surprise that problem are encountered. Besides that, teacher will taking time to search previous student record.

Furthermore, teacher difficulty generate student attendance report on weekly or monthly because a lot of data need and everything related to their progress is marked manually. A regular student, going to the school every day is marked absent for a day by mistake. Therefore, the process is greater chance happen human error and time consuming. In today's rush hour of the life, it is inconveniences for a parent to go to the school to take his/ her children academic result and view the attendance report of every month. This will cause the teacher and parent loss interaction and less follow up his/her children status in school.

Besides that, Bain & Co state that “looked at 12 school systems nationwide and surveyed more than 4,200 teachers, assistant principals, and principals. The researchers found that the average principal was responsible for reviewing the performance and development of 37 teachers plus other instructional staff far more than the five people that an average manager in accounting or human resources is tasked with overseeing, according to the report. It says the result is overworked principals and assistant principals who are not able to provide effective feedback or observations to their teachers.”

Summarize all the drawbacks of manual SMS can mention as following:-

- i. It is time consuming when doing things manually and requires lots of manual labour for manual record keeping.

- ii. Data is not always reliable as it is hand written example wrong telephone among other and some human errors in calculate student marks and result might have occurred.
- iii. It is difficult for searching and retrieving records among all files or data of past dozen years.
- iv. Inconveniences parent always need to go to school take their children academic result report.

The above mentioned problem caused for the decline of efficiency and inconveniences of the school management.

### 1.3 Objective

The objectives of developing School Management System (SMS) are identified based on the review of the problem statements stated at **Section 1.2**. The objectives are listed as below:

- i. **To improve the efficiency of school management system by replacing the existing manual paper based system.**

Admin and teacher are able to use this system to replacing paper based system manage and modify data easily. This system can help admin and teacher manage file and data in short time and efficiency.

- ii. **To minimize human errors in calculate student academic result report and without data redundancy by enforcing key constraints.**

Admin and teacher are able to manage and modify data by using this system without happen human error in calculate student exam total mark and average of mark of result.

- iii. **To maintain and secure the data related to student personal details with keep data of past dozen years into a proper system with a database.**

Administrator and teacher are able to retrieve and searching data or files of past dozen year with easily and can found it in short time. Maintain and secure the data lost and prevent damaged by insect or natural disaster.

**iv. To convenience parent to check his/her children academic result and attendance details report through this system.**

Parent can through this system to check their children academic result or attendance report at any place. This system can convenience and save parent time to go to school take their children academic result.

#### 1.4 Scope

The scopes of this project are focus on two major points which are module to be developed and target user.

##### 1.4.1 Module to be Developed

i. Login Module

Login module is used to check whether the user is an authorized person to use the system or not. For this the user should give the correct username and password.

ii. Form Module

Forms module consists of the following sub modules. There are student registration form, student marks form, teacher detail form, subject detail form and attendance form. This module is keep track teacher, student and subject data into database.

iii. Report Module

Report module is mentioned data are stored in the back end and can be retrieved as reports with filtering options. The following are the reports can be taken student academic result report and attendance report

iv. Search Module

Search module are able admin, teachers and parent's convenience to search and retrieve large amount of student detail, attendance report, academic result and guardian detail in database by using specify words.

#### 1.4.2 Target User

There are four types of end users for School Management System (SMS). The end users are Admin, teacher, student and parent. Admin can access to all system functionalities without restriction. Different types of teacher can access to all system functionalities with different type of limited restriction. Students can access their own account, edit profile and view result. For parents, they can access their own account and view their children's profile.

a. Admin

Admin can access all system functionalities without restriction that include insert/update teacher, student, parent, class, subject information detail. While Admin can key-in student exam mark and take student attendance. Besides that, Admin are able to searching, retrieving and viewing all the data are inside database.

b. Teacher

Teachers are able to access all system functionalities with different type of limited restriction. Teachers are able to insert/ update student, parent and teacher own profile detail. While teacher cannot insert/update other teacher detail just only can viewing other teacher detail. Besides that, teacher are able