

# **SMART STUDENT MONITOR (SSM)**

by

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Demo (Visit <http://www.pdfsplitmerger.com>)



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*Demo (Visit <http://www.pdfsplitmerger.com>)*

## **ABSTRACT**

This final year project studies the general structure of student performance monitoring system in school within Malaysia. Most of the readers are familiar with the term report card that shows the current implementation of the performance monitoring system in our education system. This thesis tries to change the current implementation of the system towards an electronic form using SMS and WAP application. Before that SMS technology has to be studied to find out how it can be mapped to SSM. The evolution of the Wireless Markup Language is also studied as to find out better ways for displaying the information in the limited display screen on the mobile devices. Through the research done, WAP application has a huge potential in the future. Thus this thesis is done to tap the potential and opportunity created by the advancement of the wireless technology. Adapting to the technology evolution will ensure that we will not lose out in the knowledge-based race. It is our hope that this project will help Malaysia to create a niche for herself in information age.

## **ABSTRAK**

*Projek tahun akhir ini mengkaji struktur umum sistem pengawasan pencapaian pelajar di sekolah-sekolah di dalam Malaysia. Sudah pasti ramai di antara kalangan pembaca yang sudah biasa dengan frasa kad laporan yang merupakan sistem pengawasan pencapaian yang digunakan dalam sistem pendidikan pada masa sekarang. Tesis ini cuba untuk memperbaiki sistem yang sedia ada kepada satu sistem yang berbentuk elektronik dengan menggunakan SMS dan aplikasi WAP. Namun sebelum itu, teknologi SMS perlu dikaji dan dipelajari dahulu supaya kita dapat mengetahui bagaimana SMS boleh digunakan dalam SSM. Evolusi bagi "Wireless Markup Language" (WML) juga dikaji untuk mencari jalan yang lebih baik bagi mempamerkan maklumat dalam skrin peralatan mudah alih yang terhad ruangnya. Melalui penyelidikan yang telah dibuat, aplikasi WAP mempunyai potensi yang amat besar pada masa yang akan datang. Oleh itu, tesis ini dibuat untuk mengambil kesempatan dan potensi yang ada pada kecanggihan teknologi tanpa wayar ini. Penyesuaian terhadap perkembangan dan evolusi teknologi akan memastikan kita tidak akan ketinggalan dalam zaman persaingan yang berasaskan pengetahuan. Kami berharap agar Malaysia dapat memasuki nic antarabangsa dalam dunia teknologi maklumat kini.*

# CHAPTER 1: AN OVERVIEW

## 1.1 Introduction

In this project, basically we are trying to develop a system that can monitor a students' performance in school, not only academically such as examination's results and class performance but the students' behavior, attendance and etc. We named it as **Smart Student Monitor (SSM)**. However, for now, our project will only focus on the students' attendance monitor as the prototype system.

This system is best implemented in primary and secondary school as we can see that nowadays parents throw the responsibility of educating and taking care of their child to the school and teacher specifically. Working-parents usually have no time to monitor and care about their children's performance in school. This may lead to social problems such as street fighting, gangsterism and drug addiction.

Now, parents will be able to monitor their children's progress through SSM. This is possible because what a teacher needs to do is just key in the attendance and other details of each student to SSM. There will be complete database to store student's name, student's ID, parent's name, contact number and etc.

SSM will **automatically** generate a report consisting the students' attendance as well as other information. These information will then be sent to parents hand phone via Short Messaging Service (SMS) or it can be displayed on a Wireless Application Protocol (WAP) page where parents can view the report anytime they want.

As mentioned, we will only focus on **students' daily attendance** for this project. Thus, for students who are absent, SSM will automatically send a message to the absentees' parent through SMS after the teacher keyed in the attendance. This is an effective and efficient way to contact the students' parents without spending much time if compared to the ordinary phone call.

With this system, regular interaction between teacher and parent will become a norm. It is believed that this can help in reducing disciplinary problems by students, which in turn evades an uncaring society.

## 1.2 Problem Statements

Though we are moving towards a cyber world where everything is virtually connected, the school today is still the place for shaping our younger generation, intellectually and emotionally. The tasks and burden for the teacher are increasing as more and more parents are leaving the responsibility to the school. It is up to the teacher to make sure that the students do what they are supposed to do in school.

The current trend nowadays is that most of the parents own a mobile phone that can receive messages. This system uses both SMS and WAP because until recently, still not many people have WAP phone. So, for the time being, we would focus on sending messages via SMS, so that it can reach every parent efficiently. But we foresee in the future that every person would carry at least one WAP enabled mobile phone on person.

Now with SSM, the task becomes easier. And the parents are required to chip in too. The teachers still need take in the attendance, record their results, and etc but they do not have to write a report for each parent. The teachers will record everything into SSM and it will generate an online report for the parents. Whenever a student is absent, SSM will be able to automatically send SMS to the parent's mobile phone.



At the moment, parents need to keep in touch with the teachers in order to know more about their children's performance in school. Teachers also have the responsibility to inform students' parents if their children misbehaved or have any disciplinary problem in school. However, it is very hard to contact students' parent since most of the time they are very busy with their career. Below are some of other problems we have identified through analysis of the existing student performance monitoring system:

i. Inefficient system

The current system is not effective because most of the news or status for each student is not in real time i.e. parents will not know about their children until the end of each semester.

ii. Long period of non-contact

Parents and teachers don't often contact each other. Usually parents too busy with their work.

iii. Time-consuming

Parents need time to read report card and give feedback back to the school.

### 1.3 Objectives

Below are three main objectives that we hope to achieve at the end of this project:

- a) To study the requirement of current student performance monitoring system.
- b) To design a prototype that enable communication between parents and teachers through SMS and WAP.
- c) To develop a prototype system that utilizes SMS and WAP technology.

After the full implementation of the SSM, we hope that our project will be able to:

- i.** increase and improve communication between parents and teachers
- ii.** minimize the number of student playing truant
- iii.** help parents to control and monitor their children
- iv.** improve effectiveness of management and administration of students
- v.** reduce the teachers' burden to write a report on each student

## 1.4 Scope

Basically this project can be divided into four modules:

- i) Database module
- ii) User interface module
- iii) SMS module
- iv) WAP module

The first module is the database module which keeps students and parents information. The second module provides the interface between user and the database. This interface is visible to the user. The teacher will key in the required information into the database through this module.

The third module is the SMS module. Here SSM will send details concerning the absentee to the Short Message Service Center (SMSC) through a SMTP (Simple Mail Transfer Protocol) server. Then the SMSC will send the details to the absentee's parent. The fourth module is the WAP module. The WAP pages in this module provides the verification and authentication service for the parents to access the database regarding their children only so that they know what is the current status or performance of their children, especially their daily attendance record and examination result.

## **1.5 Significance Of Research**

There is a vast opportunity for future expansions and enhancement of this project as our country is implementing the smart school concept. Everything will be computerized. Perhaps in the future the teacher will not need to write any report or key in anything. All these works will be done by the help of computer system.

Attendance will be taken by a special hardware e.g. a smart card reader that can read the students' information from their smart card when they entered the class. At the same time the database containing the students information will be updated. SSM will periodically check for updates and send message to the parents as soon as it detects any missing students.

## **1.6 Thesis Outline**

To give the readers a better understanding about this report, a general description of each chapter is given here.

Chapter 2 will focus on the literature review for Smart Student Monitor (SSM). It will cover the definition of Short Messaging Service (SMS) and Wireless Application Protocol (WAP) as well as the history of wireless network. We will also review and compare the existing student monitoring system with SSM and explain the tools used to implement SSM in this chapter.

In chapter 3, we will describe the methodology used to develop SSM that is System Development Life Cycle (SDLC). All the six phases in SDLC and how we implement each phase into our project will be explained in detail.

Chapter 4 emphasizes on the system design of SSM where context diagram, data flow diagram, SMS flowchart and WAP flowchart will be included.

In chapter 5, we will cover the important implementation issues in implementing the SSM.

A completed system has to be tested before it can be introduced to the public to ensure its usability and reliability. So is SSM. We will further describe about the testing and evaluation of SSM in chapter 6.

Chapter 7 is a chapter where we put the conclusions on the working prototype system, the objectives achievements and also the future works that can be done on this system.

## **1.7 Conclusion**

SSM is a special designed prototype system for the school and students' parents to monitor students' performance (specifically attendance) in school using hand phone. Hopefully by implementing this system in

primary and secondary school, interaction between parents and school will become a norm and this is a more effective way to monitor students' performance as it involves both parents and the school. This way we hope that it can help in reducing social problems among teenagers, such as gangsterism and etc.

Demo (Visit <http://www.pdfsplitmerger.com>)

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

In this chapter, we will focus on the literature review for Smart Student Monitor (SSM). It will cover the definition of Short Messaging Service (SMS) and Wireless Application Protocol (WAP) as well as the history of wireless network, the basic structure and architecture of SMS and WAP. We will also review and compare the existing student monitoring system with SSM and explain the tools used to implement SSM.

### **2.2 History of Wireless Network**

#### **2.2.1 GSM Circuit-Switched Data (CSD)**

The Circuit Switch Data allows any user to download or transmit data over the GSM network at a speed of 9.6kbps. Besides surfing the Internet through the PDA or laptop via cable or infrared port from the mobile phone, users are also able to surf the Internet via WAP (Wireless Application Protocol).

#### **2.2.2 High Speed Circuit-Switched Data (HSCSD)**

This is the same as the Circuit-Switched Data, except that it is faster. Users can transmit or download data at the speed of 28.8 kbps. This is almost as good as a normal modem.

### **2.2.3 GPRS General Packet Radio Services (GPRS)**

The theoretical data transfer speed of GPRS is 171kbps. Implementation-wise, the speed will be at 115kbps. The first commercial GPRS service will give users a speed of between 40kbps and 60kbps. GPRS enables data transmission or download in the form of packets, which uses Internet-style packet-based technology.

### **2.2.4 EDGE Enhanced Data Rates for Global Evolution (EDGE)**

After GPRS is the EDGE. This technology boosts the speed of data transmission to 384kbps. Consequently a user will be able to have moving images on the mobile phone, plus simple multimedia applications besides the normal mobile Internet and WAP services.

### **2.2.5 Third Generation (3G) WCDMA**

Under GSM, the 3G technology will evolve from EDGE to W-CDMA (Wideband Code Division Multiple Access). The data speeds under 3G would be 2Mbps. At this speed, users can send videos, attachments through the handheld devices. But the data transfer speed will vary according to the degree of mobility of the users.