CLASS SCHEDULE VIA MOBILE (CSM) BY USING SIMULATOR

NUR AZARIA BINTI GHAZALI

A report submitted in partial fulfilment
of the requirements for the award
of the degree of
Bachelor of Computer Science (Computer Systems & Networking)

Faculty of Computer Systems & Software Engineering
Universiti Malaysia Pahang

MAY 2011

ABSTRACT

In this globalization era, people tend to use a mobile phone as a way of communication that gives those benefits as a reminder or personal assistant. Class Schedule via Mobile (CSM) by Using Simulator is developed to help the users in future which are going to be implemented in a mobile phone, in order to give and show the class schedule besides of personal information and class notification. This is as a new improvement from the existing system or manual method. This new approach would ease them in teaching and learning process at UMP. CSM by Using Simulator is run in a simulator, soon can be deployed in a Smartphone. The system is using the web service to connect with the web page. CSM by Using Simulator is applying System Development Life Cycle as a development methodology (SDLC). It is created with Visual Studio 2008 that designed for the user interface; while SQL SERVER 2005 is a platform for the data recorded and also by using the Windows Mobile Smartphone simulator in the Visual Studio 2008. CSM by Using Simulator is believed would be able to meet the user's requirements with the profit it gives.

ABSTRAK

Dalam era globalisasi kini, orang ramai cenderung menggunakan telefon bimbit sebagai satu alat komunikasi yang memberikan mereka manfaat sebagai medium peringatan atau pembantu peribadi. Sistem Jadual Kelas melalui Mobile (CSM) dengan Menggunakan Simulator dibangunkan untuk membantu para pengguna dalam memberikan dan menunjukkan jadual kelas selain dari terdapatnya maklumat peribadi dan notis kelas. Ini adalah sebagai peningkatan dari sistem yang sedia ada atau pun kaedah-kaedah manual. Pendekatan baru ini akan memudahkan mereka dalam proses pengajaran dan pembelajaran (P&P) di UMP. Sistem CSM dengan Menggunakan Simulator ini dijalankan ke dalam sebuah simulator yang pada masa akan datang akan menggunakan telefon bimbit pula. Sistem ini menggunakan perkhidmatan web terhubung kepada sebuah laman web yang bertujuan untuk menghubungkan data dan aplikasi jadual kelas ke dalam telefon bimbit mereka. CSM dengan Menggunakan Simulator ini mengaplikasikan *'System Development Life Cycle'* (SDLC) sebagai metodologi pembangunan. Sistem ini dibuat dengan menggunakan Visual Studio 2008 yang digunakan untuk merekabentuk aplikasi bagi pengguna, sementara SQL SERVER 2005 adalah merupakan platform untuk data direkodkan. Simulator Smartphone yang mengandungi platform Windows Mobile juga digunakan yang mana terdapat dalam Visual Studio 2008. CSM dengan Menggunakan Simulator ini diyakini akan mampu untuk memenuhi keperluan dan kehendak pengguna.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF SYMBOLS

CSM	- Class Schedule via Mobile
VB	- Visual Basic
ID	- Identification
UMP	- University Malaysia Pahang
GPS	- Geographical Positioning System
SDLC	- System Development Life Cycle
ERD	- Entity Relationship Diagram

CHAPTER 1

INTRODUCTION

This chapter will give a brief description and overview for the project includes of Problem Statements, Objectives of the project, Scopes and Thesis Organization. Through this chapter, it will be easy to define and show clearly the goals of this project. In this chapter, it would help to aim the project to be successful develop later.

1.1 Introduction

Mobile phone is considered as an essential part of today's modern life. For some people, they cannot even last an hour without their mobile phone. Application such as reminder, calendar and alarm clock is so common in today's mobile phone; practically all of modern mobile phone contains such application. Besides that, it is common for a mobile phone to allow the user to download new application which greatly enhanced its functionality beyond mere calling and personal organizing.

A mobile phone is an electronic device used for full duplex two-way radio telecommunications over a cellular network of base stations known as cell sites. Mobile phones differ from cordless telephones, which only offer telephone service within limited range through a single base station attached to a fixed land line, for example within a home or an office[1]. In addition to being a telephone, modern mobile phones also features many additional services and functions such as SMS, email, Internet access, gaming, Bluetooth and infrared short range wireless communication, camera, MMS messaging, MP3 player, radio and GPS. Low-end mobile phones are often referred to as feature phones, whereas high-end mobile phones that offer more advanced computing ability are referred as Smartphone. A Smartphone is a mobile phone that offers more advanced computing ability and connectivity than a contemporary basic feature phone [2]. Smartphone and feature phones may be thought as handheld computers integrated within a mobile telephone, but while most feature phones are able to run applications based on platforms such as Java ME, [3] a Smartphone allows the user to install and run more advanced applications based on a specific platform. Smartphone run complete operating system software providing a platform for application developers [4].

University of Malaysia Pahang (UMP) is an institute of higher-learning located in Pahang, Malaysia and it has two different campuses which are located at Gambang and Pekan, both in the state of Pahang. Every year, there will be thousands of new students enrolled for undergraduate studies in UMP. For every new semester, students will be given a printed schedule of their session for current semester which can also be viewed via UMP official website; E-community (http://www.ump.edu.my) [5]. The printed schedule usually contains days, time, subject code, lecturer's name, section and also the class location. Class schedule in E-community also provides the information except there is no lecturer's code but with the addition of subject name. This kind of schedule usually leave students frustrated and confused since they cannot get the exact lecturer's code that teach them the subjects they are registered for current semester. They also tend to forget the subject code which leads to difficulties with printed schedule provided by the faculty which only contains the subject code.

The project developed, aptly named "Class Schedule via Mobile by Using Simulator" is essentially trying to solve this very problem. Student can get information about their class schedule without getting confused along the way. Information such Name, IC number, Course and Program can also be easily displayed in Student Information module. It can also help them get more information about lecturer in the Lecturer Information under students module. It makes it easier for them to contact their lecturer for teaching and learning purposes. In addition to the Students Module, there is also Lecturers Module, which lecturers can also view their information and can keep updating the event notification for the students. This application of Event Notification would help lecturers to easily inform the students about their class every single day without need to login through the E-comm.

1.2 Problem Statements

As we know, there are several problems occurred for students when using the printed class schedule. They encountered some difficulties to understand the class schedule for the first time user because it is not user friendly enough. To prove this, some conversations with a number of students is done about this matter. From the result, 65% of them find it is hard to understand the schedule when they are using it for the first time. Therefore, here are the problem statements that can be highlighted in order to develop this project.

i. Printed class schedule that is currently used now is not friendly user whereby it shows all students sections for the particular batch on the same class schedule. Therefore, there will be more than one section on a piece of paper thus will confusing them.

ii. Not all students know the code or short form name of the lecturer for the subject registered that have stated on the printed class schedule especially on early of the semester. Students commonly getting a mistake while writing the lecturers' full name especially while submitting the assignments and reports.

iii. Students sometimes are not be able to meet their lecturers before the class or else they do not even know who is the lecturer that teach for the subjects taken.

iv. The printed class schedule has only the subject code while via website; it has only listed the subject name too below the class schedule. Besides, they may forget to bring it before going to the class.

v. The printed class schedule is highly in cost because it needs a number of students to print their schedules. Therefore, the usage of paper is getting increased.

1.3 Objectives

To successfully develop a project, numerous requirements and high concentration is needed to ensure it will run smoothly. The objectives here are to overcome the problems occur in the previous system. In order to convince that this project will be a success, a survey has been done to 30 respondents consist of UMP students. 25 out of 30 students do agree that this project is useful where it translates to 83% of the respondent. The objectives of this project are to:

i. Develop a prototype Class Schedule via Mobile by using Simulator to view out the class schedule every semester.

ii. Create and help to construct a safe environment and lower the cost for printing out the schedule for a number of students.

1.4 Scope

Every project developed must have aim and would point out to certain possessions. Here are the project scopes of this simulator mobile application:

i. This prototype system is focusing on the target users who are UMP students and lecturers in Computer Systems & Software Engineering Faculty.

iii. Provide a system in future that can give information to students concerning who is the lecturer for the subjects registered for the current semester that would ease them to meet their lecturers before the class starts.

ii. The modules to be used are LoginFrom, Student, Lecturer, Schedule, Section, Event, and Subject that will be keeping as data in SQL SERVER for database.

iii. Software that can be used is Visual Studio 2008 that runs Windows Mobile platform by using simulator.

iv. The advantages of using this application is it is easy to view out through mobile phone soon it build into the mobile without bring any printed class schedule anymore.

v. The prototype SQL database is used to show how the project of this prototype mobile application will interact with the server to get the data.

1.5 Thesis Organization

This thesis consists of six chapters:

Chapter 1 is Introduction part that explains the project overview of the system, the main objectives of the project where those objectives are approaching from the problem statements. As well, it clearly defined the scopes of the project to be focus on in this system.

Literature Review is in Chapter 2. It is focusing on the studies and discussion of the existing system or else the related information about the project. The comparisons and opinions are declared in this chapter.

In Chapter 3, it is about the methodology terms to be discussed on in developing the project. Through this chapter, it wills reviews all the technology and methods that are used to develop and implement the project. The development process used is also defined as a guideline in the system development such as SDLC.

Implementation is in chapter 4 which describes the process involved in the system development. It explains the development of the project with some details about the database and designs in the system.

Chapter 5, Results and Discussion are presented in this chapter where it shows the output of the system and the new prototype of the system after the implementation phase. The good values and constraints of the system also have discussed to improve the system for future development.

The Conclusion is assigned under Chapter 6 which concludes the mobile application system development with the upcoming potential.

CHAPTER 2

LITERATURE REVIEW

This chapter will briefly defined the studies and discussion on the existing system, the technologies in the system and other related information regarding the project.

2.1 Introduction

Mobile applications and technologies era have been urbanized in this entire world. Therefore, this era makes people around the world need those applications and technologies in the mobile phones to create a better life for themselves. In order to have a better life for future, they need to know all the applications and technologies they needed in each of the mobile phones in market presently. According to Mobile

Marketing Association (Sep 2008), mobile applications are rapidly developing segment of the global mobile market. They consist of software that runs on a mobile device and performs certain tasks for the users of mobile application. Also known as downloadable, mobile applications are common on most phones, including inexpensive, entry-level model. "A phone is not a PC, it is a smaller, more intimate device, and too many phones are made to look like PCs. We wanted to come up with a user design that was different, that moved beyond the metaphor of the PC." (Joe Belfiore, Vice President of Windows Phone) No matter what it is, this phenomenon had attracted the whole community in University of Malaysia Pahang (UMP) to go along with this new development of life. University of Malaysia Pahang is located at Bandar MEC, Gambang had been developed to produce the potential students and staffs for future used. Every year, there are thousands intake in UMP of new undergraduate students and a few of postgraduate students in several different courses offered in UMP.

Every new semester starts, students will be given a piece of printed class schedule that is using for their teaching and learning purposes. The faculties will print out about a number of sheets for the students to ease them to look at their class schedule instead of by viewing it out through the E-community website which needs the students to online and access to the internet through the laptop. The printed class schedule contains the days, time, subject code, lecturer's code and section name. The printed class schedule is quite confusing the students as it states all the students' class schedule for every level in their major on a piece of paper. Therefore, students have to know their sections to ensure they will go to the right class everyday without missed a class though. Unfortunately, not all the students know the lecturer's code and subject code especially if they are new students or never have a class with the lecturer before. Therefore, through this mobile application, the students in UMP would easily know about some information before they go to the class everyday by referring to the class schedule application via their mobile phones with getting access to the wireless internet. The application would help them through giving out the lecturers' name and subject name for that particular semester. Besides, the contrast of having printed class schedule is they

need to bring all the way the printed paper by hands everyday while via the mobile application, they could easily viewing the class schedule and also the class notification via the Internet as well people are always not forget to bring the mobile phones anywhere they will go because of realizing the importance and benefits of the mobile phones itself. So, it is more easily to have this application compare to the printed class schedule.

2.2 Studies on Related Systems using Mobile Applications

Regardless of how the applications are delivered to users, mobile applications are a large and continuously growing market and served by an increasing number of mobile applications developers, publishers and providers. There are different types of mobile application have been differentiated from technical view of point regarding the runtime environment in which mobile applications are executed. Those are: (Mobile Marketing Association, 2008)

i. Native platforms and operating systems, such as Symbian, Windows Mobile and Linux.

ii. Mobile web, browser runtimes, such as Mozilla/ Firefox, Webkit, Opera Mini and RIM.

iii. Other managed platforms and virtual machines, such as Java/J2ME, BREW, Flashlight and Silverlight.

These are the main types of mobile applications that shown in Table 2.1:

Table 2.1: Mobile Application types

Table 2: Mobile Application Types
Communications:
- E-mail Clients - IM Clients - Mobile Web and Internet Browsers - News/Information Clients - On-Device Portals (Java Portals) - Social Network Clients
Games
- Puzzle/Strategy (e.g., Tetris, Sudoku, Mah-jong, Chess, Board Games) - Cards/Casino (e.g., Solitaire, Blackjack, Roulette, Poker) - Action/Adventure (e.g., Doom, Pirates of the Caribbean, Role-Playing Games) - Sports (e.g., Football, Soccer, Tennis, Basketball, Racing, Boxing, Skiing) - Leisure Sports (e.g., Bowling, Pool, Darts, Fishing, Air Hockey)
Multimedia:
- Graphics/Image Viewers - Presentation Viewers - Video Players - Audio Players - Streaming Players (Audio/Video)
Productivity:
- Calendars - Calculators - Diary - Notepad/Memo/Word Processors - Spreadsheets - Directory Services (e.g., yellow pages) - Banking/Finance
Travel:
- City Guides - Currency Converters - Translators - GPS/Maps - Itineraries/Schedules - Weather
Utilities:
- Profile Manager - Idle Screen/Screen Savers - Address Book - Task Manager - Call Manager - File Manager