FKEKK CLASS TIMETABLE USING ANDROID APPLICATION SYSTEM

POOBALLAN A/L MARIAPPAN

This report is submitted in fulfillment of the requirements for the award of the Bachelor of Electronic Engineering
(Telecommunication Electronics)

Faculty of Electronic and Computer Engineering

Universiti Teknikal Malaysia Melaka

(UTeM)

June 2015

UNIVERSTI TEKNIKAL MALAYSIA MELAKA
FAKULTI KEJURUTERAAN ELEKTRONIK DAN KEJURUTERAAN KOMPUTER

BORANG PENGESAHAN STATUS LAPORAN
PROJEK SARJANA MUDA II

Tajuk Projek : FKEKK CLASS TIMETABLE USING ANDROID APPLICATION SYSTEM

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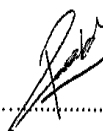(TANDATANGAN PENULIS)   (COP DAN TANDATANGAN PENYELIA)

Nazreen Binti Waeleh
Pensyarah
Fakulti Kejuruteraan Elektronik Dan Kejuruteraan Komputer
Universiti Teknikal Malaysia Melaka (UTeM)
Hang Tuah Jaya
76100 Durian Tunggal, Melaka

Tarikh: 12/6/2015   Tarikh: 12/6/2015

DECLARATION

I hereby declare that this project report entitled is written by me and is my own effort and that no part has been plagiarized without citations.
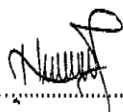
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APPROVAL

"I hereby declare that I have read through this project report and in my opinion this project report is sufficient in terms of scope and quality for the award of Bachelor of Electronic Engineering (Telecommunication Electronics)".

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Supervisor: PN. NAZREEN BINTI WAELEH

Date: ...12/6/2015...............

DEDICATION

For my beloved family, friends and supervisor

ACKNOWLEDGEMENT

I would like to express my deepest gratitude to God, who with His willing gave me the opportunity to complete my Final Year Report safely and peacefully.

I would like to extend my deepest gratitude to Miss. Nazreen Binti Waeleh my supervisor for inducing and assist me in carrying out this final year project successfully. Advice and guidance given by Miss. Nazreen Binti Waeleh, has been a great help for me in conducting the project well. I am highly indebted in her guidance and constant supervision as well as for providing necessary information regarding the projects that I have conducted.

Last but not least, I wish to thank all my colleagues and friends for their valuable support and guidance throughout the Final Year Project period.

ABSTRACT

FKEKK Class Timetable using Android Application system was developed to improve the manual operation of booking system and timetable viewing system in the Faculty of Electronic & Computer Engineering (FKEKK). The system also will make the process of timetable viewing and booking more flexible and can be done easily without burdening the lecturers and students. The FKEKK Class Timetable is an Android based application. The objective of this system is to develop a timetable viewing system using google drive and to develop a booking system to reduce the workload of lecturers particularly in doing booking for classrooms. Only authenticated users can use this system and it is limited to the Android application users only. This system uses software called App Inventor to interact with Android. Meanwhile the software that used to complete the project was App Inventor 2. Database also used to store the data more efficiently. This intended system is economically and environmentally friendly.

ABSTRAK

Jadual Waktu Kelas FKEKK yang menggunakan sistem Permohonan Android telah dibangunkan untuk meningkatkan operasi manual sistem tempahan dan sistem melihat jadual yang sedia ada di Fakulti Kejuruteraan Elektronik & Kejuruteraan Komputer (FKEKK). Sistem ini akan membuatkan proses melihat jadual waktu kuliah dan menempah bilik kuliah lebih fleksibel dan boleh dilakukan dengan mudah tanpa membebankan tenaga pengajar dan pelajar. Jadual Waktu Kelas FKEKK adalah sebuah aplikasi berasaskan Android. Objektif sistem ini adalah untuk membangunkan satu sistem melihat jadual menggunakan 'google drive' dan untuk membangunkan sistem tempahan untuk mengurangkan beban kerja pensyarah khususnya dalam melakukan tempahan untuk bilik kuliah. Hanya pengguna yang disahkan boleh menggunakan sistem ini dan ia adalah terhad kepada pengguna aplikasi Android sahaja. Sistem ini menggunakan perisian yang dipanggil App Inventor untuk berinteraksi dengan Android. Sementara itu perisian yang digunakan untuk menyiapkan projek itu adalah App Inventor 2. Pangkalan Data juga digunakan untuk menyimpan data dengan lebih cekap. Sistem ini mesra penguna dari segi ekonomi dan mesra alam.

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CHAPTER I

INTRODUCTION

1.1   Introduction

Timetable is any schedule or plan designating the times at or within which certain things occur or are scheduled to occur. Thus, Class Timetable is a university or college catalogue listing of all classes taught during a semester, along with the time that each class is held, the instructor's name and venue of the class. However, the timetable system being used nowadays mainly through manual process which burdens the lecturer and students. This process accumulates waste of time and energy. Besides that usage of paper also increase in time and not environmental friendly. Therefore, in this project an Android application system for class timetable is proposed to replace with the existing manual system.

1.2   Project Background

Nowadays Information & Communication Technology (ICT) proven to be an extremely advancing cutting-edge technology in the world of digital. These digitalized worlds have been moving forward within a blink of eye. Yet the advance in technology could not solve the timetable problems that always arise in the Faculty of Electronic and Computer Engineering (FKEKK), University Teknikal Malaysia Melaka (UTeM). There have been always problem in assigning the effective venue for replacement classes and thus leads to clashes and conflicts between lecturers and the lecture period. Hence to avoid such problem from occur, we came up with an effective solution using android as a platform and named FKEKK Class Timetable Using Android Application System. This system will very helpful and aid the students and/or lecturers in performing a better and organised learning environment.

1.3   Objectives of Project

The general objective in developing this system is to improve the manual timetable and the   quality of service in Faculty of Electronic and Computer Engineering (FKEKK), University Teknikal Malaysia Melaka (UTeM). Below are the lists of objectives of the project:

- ➢ To develop a timetable viewing system.
- ➢ To develop a booking system application for the aid of students and lecturers.

1.4   Problem Statement

The idea to develop this application occurs from the several problems that have been identified with the existing traditional timetable system in the faculty which is handled manually. This manual process requires staff including lecturers and administration staff to identify every schedule to make sure there are no

redundancies for the class placement at any specific time. This process will be a burden to be done by the assigned staff and it require a lot of discipline and logistic for checking. Besides staff this slow process also effect students who repeat their subjects. As an example the students have to manage their own timetable depending on the subject timetable that has been offered for them in that semester.

Meanwhile this manual system also will consume more time and energy in order to make the venue and the time of a certain lecture room available at that particular time. For example, when a lecturer indented to make a replacement class they will consults with the respective class representative to find a lecture room that is available for the particular day and time. This process could take at least one or two days as the class representative have to discuss with the classmates and check with the administration to book the room. Hence, it is a waste of time and energy of all the individuals.

This proposed FKEKK Class Timetable Using Android Application System is an independent system where by viewing the PDF format timetable lecturers or student can easily determine the time and venue which are available for replacement class. To make the process smooth a manual booking system is implemented whereby lecturer can make the booking of classroom by filling up the respective information in the booking slot and send it to the respective administrator via SMS, Gmail and WhatsApp. Besides that, call also can be made to do the booking to avoid any clashes or inconvenient with other lecturers or courses.

This project is mainly concerned for the use of lecturer's and students who can only view the timetable of the particular semester subjects and not entitled to change the time or venue of classes. Although this project not student friendly yet it can be done some future upgrades by using a system called dual log-in. Whereby, lecturer and student both can log into the application and rearrange the class schedule or can discuss the changes of class time and venue. This will help the students who are repeating the subjects.

Functions of the application:

1. User will be able to view the timetable in an easy readable format.
2. User not able to change or modify the timetable as it is in PDF format file.
3. Lecturers entitled to do booking either manually or automatically using the booking form in the application to avoid constraints and clashes of classes.

Features of this application:

1. Android based system
   - System is dynamic (Mobile)
2. Simple to use and understand
3. Highly secured
   - In the access level there will be a login page which is only entitled for the lecturers and students of FKEKK. The data will be stored in web database using MIT Tiny Web Database (TinyWebDB) to smoothen the process.
4. Economy
   - Lightweight utility
   - Inexpensive to develop
   - Low cost
     - ➢ Does not require any printing or photocopying.
5. Low time consumption and energy
6. Environmental friendly
   - Free from usage of papers.

1.5   Scope

The scope part will explain on the limitation and the target user of this system.

1.5.1   Users

The target users of this application are lecturers and students in Faculty of Electronic Engineering and Computer Engineering (FKEKK) of University Technical Malaysia Malacca (UTeM).

1.5.2   Limitation

Students and lecturers who are users of android application only.

1.6   Conclusion

As the conclusion of this chapter, this android class timetable application system can be used as a solution to the complicated manual timetable scheduling into being a fast build and efficiency way to solve timetable problem.

In chapter 2 the literature review will be highlighted followed by methodology in chapter 3. Chapter 4 will consists of results and discussion and chapter 5 will conclude the overall work with highlighting the future work and conclusion.

CHAPTER II

LITERATURE REVIEW

2.1   Introduction

For this project, literature reviews were done based on the comparison between the existing system followed by the comparison between the technologies and related journals.

This chapter contain all the research that have been done on the previous system and existing system on the internet including reviews on the features, capabilities and so on. All the weaknesses on the current or existing system were identified in order for this project to overcome and the strength of the existing system are identified and studied   so   that   it   can   be   implemented   in   this   system.

2.2   Facts and Findings

Facts and finding is a discovery of facts or accurate information. This section conveys about the timetable, analyse the existing system, to find out the strength and weakness of the system. After all the weakness and strength has been analysed, it then will been applied to the system and the weakness then will be improved. All the fact and finding will be support by a review of the existing system and technique related used by others.

2.2.1   Data analysis

The data analysis method that will be used for this project is using software named App Inventor. This software is easy to handle and more suitable for Android based platform applications although have more sophisticated analysis software. The blocks of App Inventor source code of java will be analysed and stimulate using Emulator to rectify and debug any incorrect command in the blocks arrangement.
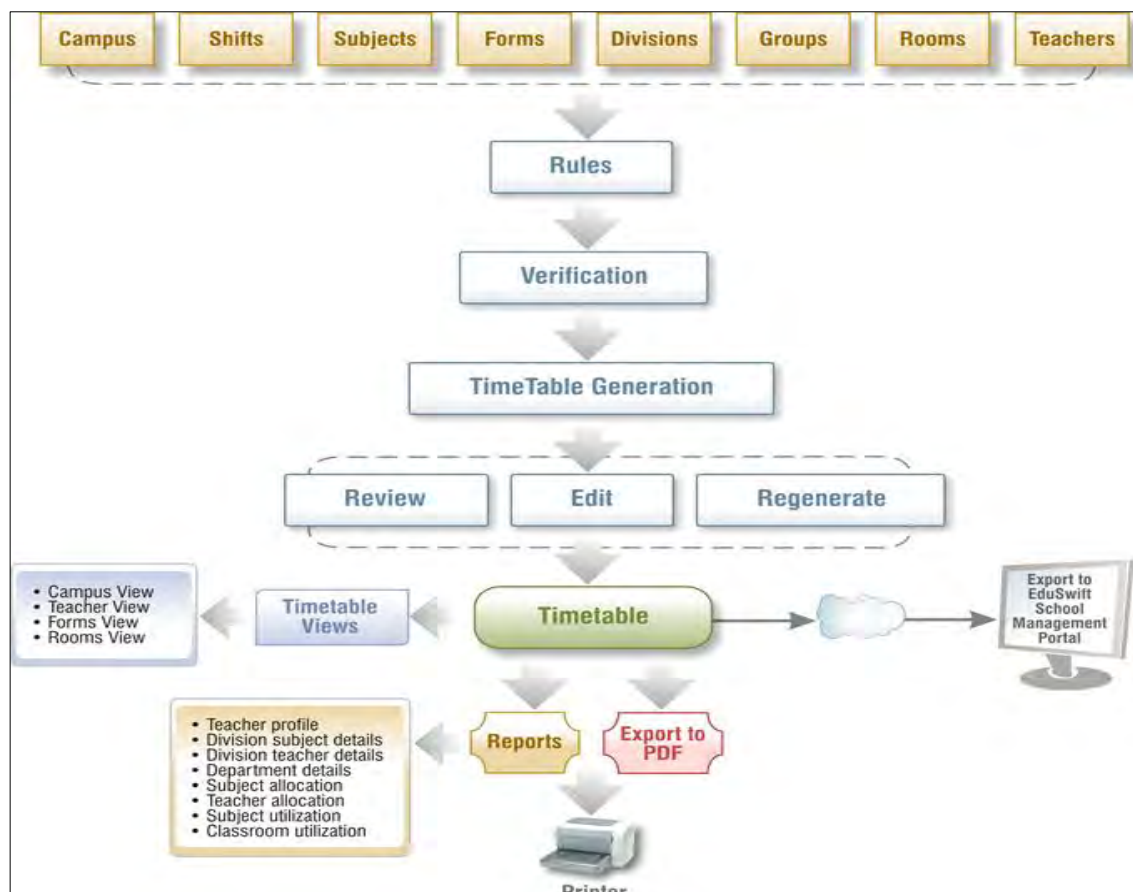
2.3   The Existing System

Figure 2.1: The existing timetable process

FKEKK currently timetable system after the timetable being produced is based on a manual process. Whereby there are still some issues in retrieving the timetable from the university official portal. This issue burdens the students as consume their time. This could cause some issues which related to human mistakes that can cause to timetable redundancy during manually scheduling the timetables. Since the timetable kept by the lecturers and student are printed on paper, this could lead to missing of data if it is not kept and organised properly.

2.3.1 Comparison between the Existing Systems

In this section 3 existing systems will be discussed to highli9ght the techniques used and advantage of it.

1. Automating Class Schedule Generation

This system was developed by Sandhu (2001), to develop this system he uses student information system to provide on timetable administration to use in timetable generation. In this system is providing the function to generate timetable view to be queried from room, student, staff and course table. This view table can manually generate and automatically generate also to ability to print the timetable. Furthermore the system can generate the report. The manual timetable generate creates timetable that assist in a decision support system capacity by the provision of informed information.

One of the techniques applied to generate timetable is crossword pulzee algorithm. Backtracking occurs upon either failure to fill a slot or successfully completed timetable generation. The process of algorithm is initial, space traversal, and finalization and termination of the dynamic slot table. First step is initial create from room list by matching subject classes and the constraints. Second step is space traversal, all variable with all possible combination of their dynamic maintained. Then instant the element into a variable, a number of checks are performed to complete the process. Third step is finalization and termination of dynamic slot table, this step is required the storage has been generate into database.

2. Time Traveller Timetable System

This system is allows for an administrator to log on and be able to manage change all of the data contained on the system including the system database tables. The interface of the system design is straight forward to use even for inexperienced computer users. The feature of the system is the ability to add and drop the courses.

Second the student is able to print their timetable on a local or networked printer. Third, the student ability to view the marks of all previously taken courses up to date. Finally, the student can see the listing containing the Message of the Day, a list of important dates for the current month, and can view curse information for all

classes offered which include course prerequisites, full course description of each course and other relevant information.

2.4 Technology

Technology part will highlight on the comparison between the technologies that intended to use and the other reliable technologies.

2.4.1 Android

Android is a mobile operating system (OS) based on the Linux kernel and currently developed by Google. With a user interface based on direct manipulation, Android is designed primarily for touchscreen mobile devices such as smartphones and tablet computers, with specialized user interfaces for televisions (Android TV), cars (Android Auto), and wrist watches (Android Wear). The OS uses touch inputs that loosely correspond to real-world actions, like swiping, tapping, pinching, and reverse pinching to manipulate on-screen objects, and a virtual keyboard. Despite being primarily designed for touchscreen input, it also has been used in game consoles, digital cameras, regular PCs and other electronics.

In this part the comparison of Android with iOS was done. This project will be using Android as the Operating System. Android was chosen as the operation system due to its capability in adapting to most of the smart phones in the market nowadays and it's easier to develop compared to iOS.