UMP STUDENT ATTENDANCE SYSTEM BY USING QR-CODE (USA-QC)

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UNIVERSITI MALAYSIA PAHANG

SUPERVISOR'S DECLARATION

I hereby declare that I have checked this thesis and in my opinion, this thesis is adequate in terms of scope and quality for the award of the degree of Bachelor in Computer Science (Software Engineering) with Honors.

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I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at University Malaysia Pahang or any other institutions.

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In the name of Allah, the most beneficent, the most merciful. Praise be to Allah the Ruler of the universe. May His blessings be upon the noble Prophet Muhammad and the Messengers. Together with beloved family and friends, everything. Firstly, all grateful to Allah for bestowing me with good health and knowledge along my journey to complete this project. All load of gratefulness to my supervisor, Dr Nor Bakiah Binti Abd Warif for giving so many guides and knowledge in finishing this project. I have been blessed for meeting such good lecturer who is very expert in such this project which can really help me throughout all process. Secondly, I am thankful to my beloved parents, sister and friends for giving me moral support and encouragement during the course study as well. No personal development can be improved within me without the interference all of you. Thank you very much.

ABSTRAK

Pada masa ini, UMP menggunakan sistem IMS untuk mengambil kehadiran pelajar yang memerlukan pensyarah untuk memasukkan kehadiran setiap hari. Tetapi malangnya, sistem IMS mempunyai batasan mereka sendiri yang menjadikan sistem tidak cekap untuk digunakan. Pada asasnya, sistem itu memerlukan Java sebagai platform mereka untuk menjalankan sistem tersebut. Jadi masalah lain akan timbul jika komputer riba pensyarah tidak menyokong platform Java. Untuk mengatasi masalah ini, Sistem Kehadiran Pelajar UMP dengan Menggunakan QR Code (USA-QC) dibangunkan. QC-USA membolehkan pelajar menyerahkan kehadiran mereka dengan mengimbas Kod QR semasa kelas serta ia akan memudahkan pensyarah menguruskan senarai kehadiran pelajar mereka. Untuk membangunkan sistem, kami menggunakan Microsoft Visual Studio 2010 untuk membangunkan sistem kehadiran dan menggunakan Android Studio untuk membangunkan aplikasi mudah alih android untuk pelajar UMP. Secara umum, skop projek ini lebih kepada pensyarah dan pelajar. Peningkatan sistem kehadiran ini hanya dengan mengimbas Kod QR supaya pelajar dapat menyerahkan kehadiran mereka ke kelas. Kod QR akan dipaparkan oleh pensyarah semasa kelas. Pembangunan projek yang digunakan untuk sistem ini adalah Pembangunan Aplikasi Rapid (RAD) yang mana kaedah ini dibahagikan kepada empat fasa. Akhir sekali, dengan menggunakan sistem ini diharapkan dapat meningkatkan pengurusan sistem kehadiran pelajar di UMP.

ABSTRACT

Currently, UMP using the IMS system to take the student attendance which it requires the lecturers to key in the attendance every day. But unfortunately, that IMS system have their own limitations which make the system inefficient to use. Basically, that system requires Java as their platform to run the system. So another problem will arise if the lecturer's laptop does not support the platform of Java. In order to overcome this issue, UMP Student Attendance System by Using QR Code (USA-QC) is developed. USA-QC enables the student to submit their attendance by scanning the QR Code during the class as well as it will ease the lecturers to manage their student attendance list. In order to develop the system, it required to use the Microsoft Visual Studio 2010 to develop the attendance system and use Android Studio to develop the android mobile application for the UMP students. In general, the scope for this project is more to lecturer and students. This improvement of attendance system is just by scanning the QR Code in order for the students to submit their attendance to the class. The QR Code will be displayed by the lecturers during the class. The development of the project applied to this system is Rapid Application Development (RAD) which this method is split into four phases. Lastly, by applying this system hopefully can improve the management of student attendance system at UMP.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

QR code (abbreviated from Quick Response Code) is the trademark for a type of matrix barcode (or two-dimensional barcode). Like any other barcode, a QR code is nothing more than a way to store the information in a machine-readable optical label. The data contained by a QR code can be anything from simple text, to email addresses, to phone numbers and so on. This pattern can be scanned and translated onto human readable information, with the help of an imaging device, such as scanner. QR code are used for many purposes such as it can be sued as the online accounts authentication which the websites will display a QR code which user need to scan the QR code using his/her smartphone to login. Next, QR code is also used as Wi-Fi authentication which it can be used to store Wi-Fi networks authentication details such as SSID, password and encryption type, for example when we scan the QR code using our smartphone, it can automatically join that network.

Nowadays, QR code had been widely used as it can act as the platform of database that will record and generate the attendance list of the students to the class. There are a few university had implement this kind of method in their student attendance system to reduce any cheating or skipping of class. The main problem is University Malaysia Pahang (UMP) does not have the new online system for the student's attendance as UMP still use IMS system which it requires the lecturers key in the student's attendance. Because of the limitation of IMS that will be further discuss in problem statement, this project is proposed.

UMP Student Attendance System by Using QR Code (USA-QC) is a mobile application that can be used by the students to submit their attendance during the class.

This purposed of this project is to make an evolution to the existing system that been used by implement QR code for the easier way. This project will give benefits to the university especially the lecturers as they will save their time in order to get the attendance record of their students.

1.2 PROBLEM STATEMENT

Currently, University Malaysia Pahang (UMP) using the IMS system to take student attendance which it requires the lecturers to key in each of the student's attendance every day. But unfortunately, that IMS system have their own limitation which make the system inefficient to use. The IMS system requires Java as their platform to run the system. So it will arise another problem if the lecturer's laptop does not support Java. This is because not all laptop can support Java to run the system. On the other hand, by using IMS system, it will take many time as the lecturer need to key in the attendance each of their students.

Because of that limitation of IMS system, the lecturers decide to take the attendance of the students manually which is by using a sheet of paper that their students need to write names, ID and signature of the students. By writing the attendance on a sheet of paper that listed the student's attendance might be lost or miss placed by the lectures. So, in case of that, the records of student's attendance will be missing. In other hand, by writing the attendance in a sheet of paper, the lecturer need to key in back all the attendance in the system. So, by using this method, it will waste many time and papers just to take students attendance.

Besides that, writing the student attendance on a sheet of paper will cause the cheating of the students. This is because sometimes, there are students that write their friend's name which was absent to the class. So, effect from that, the lectures difficult to trace and control any cheating attendance of their students.

1.3 OBJECTIVES

The objectives of this project are stated as below:

i) To study the existing attendance system with implementation of QR code and without implementation of QR code.
ii) To develop a prototype of USA-QC using QR code for University Malaysia Pahang (UMP).
iii) To evaluate the prototype of the proposed system.

1.4 SCOPES

The scope of this project are as follow:

i) The system is for students and lecturer of UMP
ii) Only can be use when connected to the Internet
iii) Android-user only

1.5 REPORT ORGANIZATION

This report consists of five chapters. Chapter 1 are discussing the introduction of this project. It includes the problem statement of the project which explain the detail of the problem arise nowadays, then the objective, scope of this project and report organisation.

Chapter 2 will be covering on the literature review of the project which will list out the differences in general of the existing system and solutions done by other software developers.

Chapter 3 will discuss the methodology in carrying out this project. It will include the methodology carried out, the hardware and software requirement, Gantt chart and the testing plan.

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