



Faculty of Computer Science and Information Technology

QUICK FACILITIES REPORTING SYSTEM FOR COLLEGE RESIDENTS

BACHELOR OF COMPUTER SCIENCE WITH HONOURS

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Quick Facilities Reporting System for College Residents

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This project is submitted in partial fulfilment of the requirements for the degree
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FORM B

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10 AUGUST 2020

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ABSTRACT

College management plays an important role to cater the residents' needs by providing a platform where the residents could make a complaint regarding college facilities. Complaint system is essential for an organization or management to allow members or residents to point out any dissatisfaction which will allow quick action for areas of improvement. This improvement can be made by taking a step to integrate manual approach which is paper based and time consuming to a computerized system. Quick Facilities Reporting System for College Residents is a new approach to facilitate the workflow of reporting any fault in college facilities. This system will eliminate the necessity for the user to manually fill in the form at the management office to enable them making any facility complaints. This system is easily accessible as it can be access quickly through smart phone by scanning QR code where user automatically will be redirected to the particular website.

ABSTRAK

Pengurusan memainkan peranan penting dalam menjaga kebajikan penghuni kolej seperti menyediakan saluran aduan supaya dapat memudahkan penghuni kolej membuat sebarang aduan berkaitan kemudahan kolej. Sistem aduan adalah penting di sesebuah organisasi mahupun pengurusan kerana sebarang ketidakpuasan hati atau aduan dapat diselesaikan atau ditambahbaik dengan segera. Salah satu cara penambahbaikan dalam sistem aduan adalah dengan menaiktaraf sistem secara manual yang mengambil masa yang lama kepada sistem berkomputer. Sistem Aduan Pantas untuk Penghuni Kolej merupakan salah satu pendekatan mudah untuk membantu dalam proses aduan berkaitan sebarang kemudahan yang terdapat di kolej. Sistem ini akan membantu dalam memudahkan penghuni kolej membuat aduan tanpa perlu mengisi sebarang borang di pejabat pengurusan. Sistem ini juga mudah untuk diakses kerana pengguna dapat menggunakan telefon pintar untuk membaca kod QR yang telah disediakan untuk terus ke laman sesawang yang dihaskan bagi membuat membuat aduan.

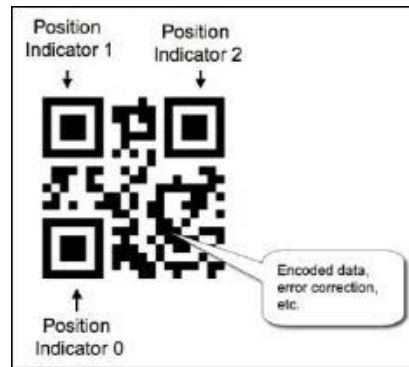
CHAPTER 1: INTRODUCTION

1.0 Introduction

Quick Facility Reporting System is a web based system that allows college residents to submit any complaint on facility faults within the college especially in their apartment. Complaint regarding equipment faults or any part of a facility that may require replacements, servicing or repairs can be done by allowing the residents to scan a QR code that is placed in each apartment. QR code often contains URL to entire website which scanning them will automatically open the website or even a specific page within the site which will make the site search easier and the reporting could be done as quick as possible. Reporting facilities issues can be troublesome especially when any passer-by or resident that never lodge any report have to search for the website site URL which they are not familiar with or they have to do manual report by physically go to the management office. Technology that can be implemented in this system is Automatic Identification and Data Capture (AIDC) which QR code is a part of AIDC. AIDC refers to a method of automatically identifying objects, collecting the data and entering that data directly into a computer system without any interference of human.

A QR code is a matrix barcode readable by smart phones or mobile applications with camera. It contains machine-readable information concerning the item to which it is attached in both vertical and horizontal directions (Singha & Verma, 2019). The information encoded in a QR code can be a URL, a phone number, a message, a V-card or any text which can be decoded at high speed. QR code is a convenient way to add the virtual to physical in a short time by saving a visiting card or connecting to WiFi network. Besides, QR code is low-threshold technology where it is low-cost, easy to implement, easy to use if implemented wisely (Ashford, 2010).

Figure 1.1 shows the elements of QR code



In this project, a web based system will be developed to provide a platform for college residents to lodge complaints regarding the facilities in the college. A website that can easily accessed by scanning QR code is proposed which will be able to minimize website URL searching time. The manually existing system required the residents to lodge a complaint at the management office physically. The aim of the project is to improve manual existing system into a computerized system which will beneficially for both the managements and residents. This new approach will ease the facilities faulty report and helps in data management of complaints record.

1.1 Problem Statement

Existing reporting system require a lot of process compared to using a computerized system. In order to report a problem regarding any facilities in the apartment, the residents must fill up provided form at the management office. The report can only be made during office hour and working days. Thus, it will limit the time for the residents to report any problems as students may not be available to do the reporting during working hours. In some cases, the faulty facility is being neglect for a few days as the students may not be able to attend management office during office hour due to classes or other activities until any of the apartment members able to lodge a report to the management office.

There is no referral number or follow up being made to keep the informer aware with their report in the loop. The only signalling is after the particular problem has been resolved, a piece of paper will be given to the student by the staff as a proof that the problem already resolved. Students may be clueless with the status of the complaint made as there is no update regarding the complaint until they received the paper as a sign that the complaint already resolved. Redundant reports made by the students may take place unless they are told by the staff that the respective reports have been made. This redundancy of complaint could happen where the same complaint is made due to the uncertainty of the complaint status from the previous complaint.

In term of database, the staffs keep all the related paper form in a file for their future reference. This system is quite inefficient especially in retrieving old reports and the staffs must update the file regularly. It takes more effort and physical space to keep track of paper document. The existing complaint system is a paper-based system where too many paper used and storage to keep all the files exist. The files with the gathered reports eventually will be thrown away due to lack of storage. With manual system, information often must be written down and copied more than once which also will lead to duplication of data entry

1.2 Project Scope

This project is mainly focused on Sakura College management and the residents as the target user. This project required smart phones or any mobile application with camera and Internet connection to scan the QR code. Both Android and Apple devices can be use as the QR code will link to a website as this project is not a mobile application based.

1.3 Aims and Objectives

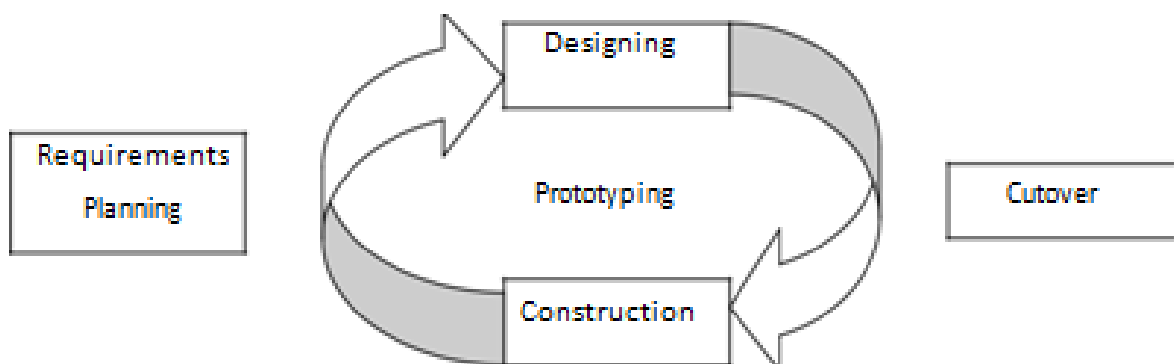
List of objectives for this project:

- To design a web based report management system that will improve the existing manual system to a computer aided system.
- To provide a system that is accessible for both managements and the students to report any problem regarding facilities in the apartment.
- To build a systematic system that will avoid duplicate reports, data loss and assist in data retrieving.

1.4 Brief Methodology

The methodology that will be used is Rapid Development Model (RAD), one of the examples of Agile method. The key benefit of the RAD approach is fast project turnaround and focus on minimize development time and maximizing progress of the project (Lucidchart, 2018). This method will give an accurate measure progress and communicate in real time on evolving issues or changes. There are four phases required in this which are requirements planning, designing, construction and cutover.

Figure 1.2 shows phases in Rapid Development Model



1.4.1 Requirements Planning Phase

This phase is the basic phase upon completing the project as it is where the initiation of the project occurs. Researching the current problem, defining the requirements for the projects such as objectives, project scope and expected outcomes are being identified and gathered to be analyzed before proceeding to next phase. Interview and questionnaire will be done to require information on proposed project. Software used in this project is PHP as the language program and MYSQL to store the database. The hardware requirements are laptop and any mobile phone with camera.

1.4.2 Designing Phase

The requirements gathered will be use in the process of designing the website to provide specific design. By understanding of overall system architecture, the design should meet the preference especially regarding the website features. Elements that need to be considered are the position of the button, colour of the interface, size of wording and adopting simple user interface for the website. In this project, online software such as WireframePro is used to facilitate the project.

1.4.3 Construction Phase

This phase is where the actual development occurs based on the specific design that have been finalized from the previous phase. The QR should be generated and the website application should be functionally work and able to store information. The website also should be reachable by scanning the QR code. If there is error or defect in constructing the project, there is need for the developer to going back to design phase and repeat the phase over again. Both of design and construction phase will be repeated as often as necessary until the complete prototype that meet the requirement is achieve.

1.4.4 Cutover Phase

Cutover phase will all the implementation of the project to be carried out as the successful and complete prototype has been achieved. Data conversion, testing and user training are involved in this phase. All the final changes are made while the system is continuously resolved any errors or flaws found in the system in the previous phase. For this project, the system is expected to reach the report management website by using QR code generated and fully function. Apart of that, the system is expected to fulfil the objectives and able to ease the management side by resolving redundant complaint and store complaint report.

1.5 Significance of the Project

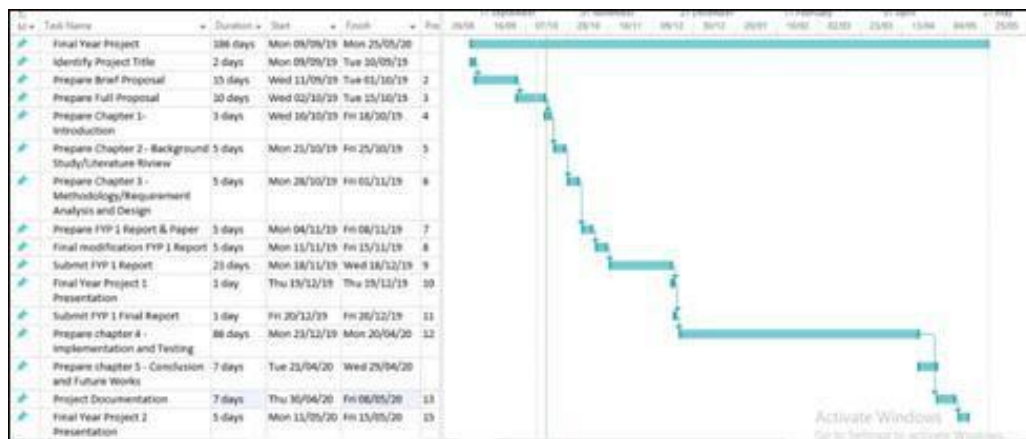
There are several significances from the project such as

- The QR code report system able to present a website that running a report management system in systematic ways. The system will eliminate paper-based manual system and helps in data management.
- The system will help management to manage the data in term of preserve all the reports that have received, retrieved old and latest report if required and avoid report duplication in the system.
- The project will become a tool in aiding fault facilities report at the apartment as the users are able to access the system in short time which increase the performance and efficiency in the system.

1.6 Project Schedule

Final Year Project (FYP) starts on 9th September 2019 and end on 14th August 2020. Below is the plan schedule to complete 6 chapters along with the prototype of proposed project which is divided into FYP 1 and FYP 2.

Figure 1.3 shows plan schedule for the project



1.7 Expected Project Outcome

The expected outcomes for this project:

- The system will be able to ease the complaint process for college management and the residents by achieving all the objectives listed.
- The college management able to keep track complaint records in efficient way by eliminating paper-based system.
- Avoid problems regarding time constraint, report redundancy and ease the process of reporting facilities problem to be made.
- Able to achieve quick access to the college reporting system website.

1.8 Summary

Chapter 1 provides brief details about the proposed project. An introduction, problem statements, aims and objectives of the project, brief description of methodology used for this project, scope covered in this project, timeline for developing this project and the expected outcomes of the project are discussed in this chapter. All the problems have been listed and explained in the problem statement section. The objectives and the scope of this project are defined to give a clearer vision of this project. The methodology used also been briefly explained and the schedule of the project also being produced to keep the project in the right track.