

Smart Appointment System for CCE Faculty

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Abstract: Students at Caledonian College of Engineering have to meet the staff either lecturers, supervisors or advisors, regularly to clear their questions and doubts. For that students must to conduct an appointment to inform the staff before going to them. There are several ways to schedule the appointments, like contact with the assistant at the department and fill up the appointment request and ,also could send an e-mail to the teaching assistant to inform him/her. Students' appointment records are important documents for academic institutions that reflect the performances of the students and their credibility and availability to think, research, analyse and then to discuss. However, the process of managing these documents had been done manually, by pen and papers thus making it less efficient. These methods are become tricky that sometimes student feels difficult to go to fill out the request form and maybe the forms get missed. This report discusses about the development of a new appointment system for the CCE faculty. The system is almost a software development. Accordingly, the methodology that used are depends on this issue. By this system there will have an easy manner to make an appointment and keeping simple touch between the students and staff.

Keywords: Appointment system, Visual Basic, Android, SMS, OOP, SDLC, Database, Software.

I. INTRODUCTION

Students frequently have many doubts and questions about the lectures, labs, writing reports, exams, projects and many other and they always need to clarify those doubts. So they have to find a proper time to perform a meeting with that particular lecturer. By using the traditional ways to have a meeting like filling up the appointment request, the students will feel difficulty to do that, they just go to the lecturer's office and ask for their doubts. If they do not find him/her they will have to go and return back many times to check his/her availability. This will make disturbance and annoyance for the other staff inside the office especially if they do some important duties and so they will feel bad and resent. Therefore, there is a need for suitable solution to overcome this problem which is faced most of the time daily. Several literature studies that related to the proposed project were collected and gathered from several sources.

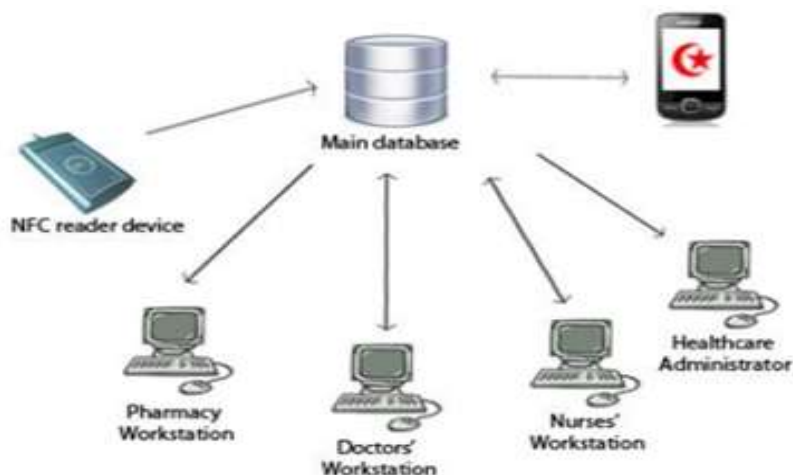


Figure 1: Architecture of NFC Appointment System Taken from (Symey et al, 2013, p.)

Those literatures view several methods and techniques that being used by the other to achieve similar results of this project, such as (Symey, Sankaranarayanan & Sait, 2013) described the ways of patient management in form of taking appointment and arranging the priority calls. NFC Appointment System, paper based appointment system, online appointment system and mobile appointment system were presented in the paper. There are many advantages and benefits of using NFC technology that overwhelm its cons, such as its higher efficiency, all healthcare departments will be awarded about the patient before proceeding with the consultation, faster operations, well scheduling, prioritization, high security level and reminder system. There were some systems comes before NFC Based Mobile Appointment System which were paper based appointment system, online appointment system and mobile appointment system. But these systems had its disadvantages, such as inefficient scheduling, services towards prioritization and no reminder system for both patient and doctor. Therefore the NFC system is initiates to overcome these weaknesses. NFC has many applications where it can be used in addition to healthcare such as consumer electronics, information collection and exchange, access control ...etc. Online scheduling system was highlighted in IEEE (2009); online scheduling system is a Web-based application that allows individual to conveniently and securely their appointments and reservations online through any Web-connected device. Online scheduling systems also come equipped with other beneficial features like automated e-mail and text message reminders. Stroustrup (1988) was talked about object-oriented programming in his paper. OOP is a model of programming language that structured to considering objects instead of "actions" and data instead of logic. OOP provides more data security, more reusability, more flexibility and the abstraction is more. In addition, OOP gives the data more importance and can handle very complex programs.

By good researching and understanding the proposed situation, can develop a proper application that will provide a solution that solves the problem and so the randomly entering will be organized. The proposed application also can enable the students to find easy way to contact with any staff at the college and make appointments. Actually, the system will save the time of both lecturer and student; that the lecturers can set all the dates and times where they can be available and so each student will select the suitable time from the multiple choices that he/she has. The proposed system is an application that written by visual basic codes and android operating system. The system consists of control system, staff application and student application.

II. PROPOSED SYSTEM

A. Block Diagram of the System:

The block diagram of the system is shown below in figure 1. It shows the main working of the Appointment System.

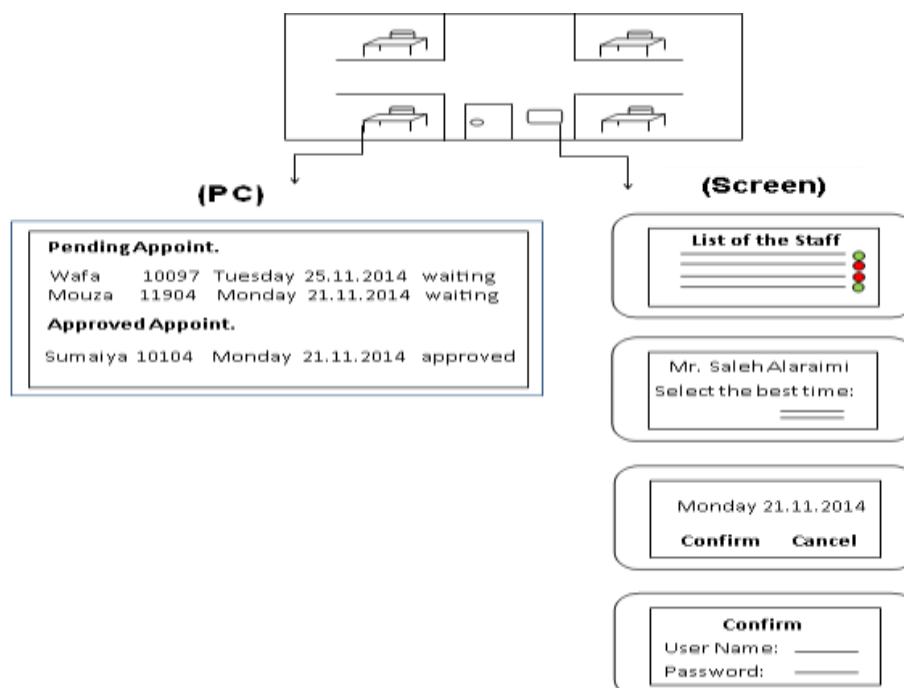


Figure 2: Block Diagram of the System

B. Working of the System:

In the front of each department in the college, there will be a screen that views names of the staff that are inside that particular department. The student then can select the lecturer that he/she want, and follow the steps to make an appointment, as displayed in figure 1. Inside the department, at each desktop there will be an application that enables each lecturer to control the appointments that comes from students, even by approve the appointment or reject it for any reasons. The reason for rejection will be sent as SMS to the student. The system consists of control system, staff application and student application.

C. Design and Methodology:

There have explanations of system development life cycle (SDLC) that describes the steps and operations that followed in order to complete and develop any software system. As well, there will be a flowchart which terms the working principles of the student application.

C. a. System Development Life Cycle (SDLC):

Any software has a life cycle that should run through it to be developed. Software development life cycle (SDLC) is a process that contains series of operations and steps to provide a model of an application or system to show its development and determine its lifecycle management. It called also system development life cycle. Process methodologies of SDLC can be different from one industry/organization and another, but standards like ISO/IEC 12207 show the processes that establish a lifecycle for software, and provide a model for the development, acquisition, and configuration of software systems, as mentioned by (rouse, 2010). The main use of SDLC process is to help the industries and organizations to produce a product that has low cost, more efficiency and effectively, and has high quality. After the application being made, the SDLC selects the proper deployment and shutdown of the system once it becomes a legacy. The steps and stages of SDLC methodology are: Design, Build, Test, Release and Maintenance.



Figure 3: Software Development Life Cycle

Analysis is the first stage in the SDLC, there should determine the purpose of the system and the requirements that needed to make the system established. Then, at the construction or build stage the actual code of the application should be written; which means that the software is produced at this stage. At the next stage, the code that written in the previous stage should be tested using several analyses such as static, dynamic as well as manual testing to make sure that the application is not easy to be hacker. During this stage, it will be useful to use Veracode that the security situation of the applications can be verified without the need to use of any additional hardware, software, or personnel. Once the software being secured, it can be implemented in a testing environment to see its usability and then it will fully release to enter to maintenance stage. Maintenance stage allows the system to be modified to organizational, systemic and utilization changes.

C. b. Flowchart of Student Application:

Figure 4 shows a flowchart that describes the operation of android application. The application starts with check if there is a connection to the internet or not. Therefore, if there is a connection, the student can select the wanted lecturer. But if there is no connection, then system will keep checking for it. Once the student selects the lecturer, then he/she should insert the username and password. Then the system will check if it is valid username and password. Hence, if it is not valid, the student should re-insert a valid username and password. Or else, if it is valid, then the appointment will be arranged successfully.

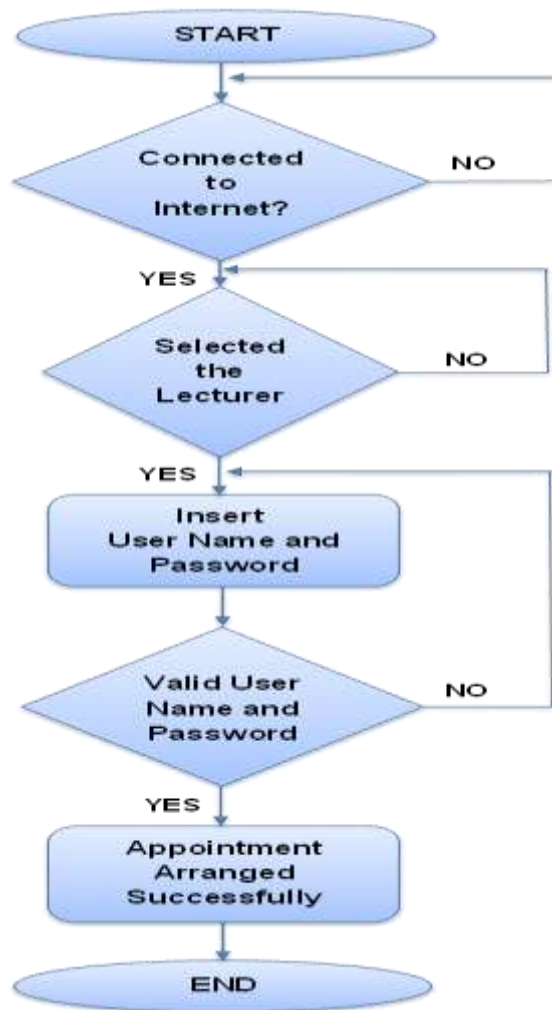


Figure 4: Flowchart of Android Application

III. RESULT AND DISCUSSION

The results and outcomes were obtained after running the applications by installing Android Application on a tablet and installing VB.NET Application on a desktop. The figure below shows the way of communication between both applications through the internet:

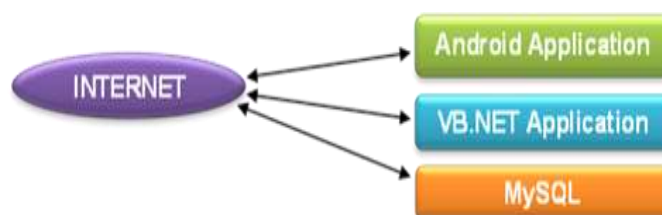


Figure 5: Relations between Applications through Internet

A. Control System:

Where can add the students and staff information in the system as well as delete them from the system.



Figure 6: Login to MeetMe Control System

B. Staff Application:

Where the staff can accept or reject any appointment with the reason that will be sent to the student as SMS through the internet.



Figure 7: Login to MeetMe (Staff Application)

C. Student Application:

Where the student can select suitable time and fixed the appointment.



Figure 8: MeetMe (Student Application)

IV. CONCLUSION

To sum up what were presented about the project through this paper, the literatures were mentioned different systems, formations and technologies and by reading and understanding the concepts of each of them, there was an ability to describe and analyse them and then compare it with the proposed system. The traditional way of conducting appointments became useless and with the technologies improvement it is easily to develop a new system or applications to perform similar results with more efficiency, saving time and fast. Those done in this project by writing a well programming codes using visual basic and creating an application using android operating system. There were number of aspects that being considered while designing and developing an appointment system; includes user interface, flexibility and dependability. The diagram of the system was drawn, the codes being written and then the performance of the system being seen and ensuring that how much the system can be useful for the college. Furthermore, a questionnaire being distributed into small sample size (around 40 students), highest percentage of those students were satisfied with the new proposed appointment system and were happy for the idea to apply such useful system in the college. At the end, would like to say that the objectives that being seated in the begging had been achieved, and some of the recommended modifications to improve the performance of the proposed system will be mentioned in the next chapter.

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