Mobile Class Assistance Application
(EzClass)

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Abstract

Classes are essential things in a student life. Normally classes hold around thirty students and still using hardcopy attendance record system. During the class, the attendance sheet will be pass around the class to be signed by each of the class member and for those who come late might miss the attendance sheet. Classes also do a lot of lectures, quizzes and exam for the certain lesson period. However, these things are not easy to remember the date by most of the class participant since the events or classes are only posted on notification boards or eLearning. Furthermore, with the multiple class joined by, it is easy for these thing to get confused. Therefore, this project aims to develop a mobile based companion application for class that enables the user to manage attendance record, easily view upcoming events and class schedules and also participate in question and answer.

Keywords: Class Assistance, Mobile App, Agile, RUP, Waterfall, Android

1.0   Introduction

Class or the learning session is very important to be held in convenient state to make sure the student or the class participant may understand and gain the knowledge required. The class participant also must be prepared before entering any classes or sit for any event held by any classes. An application that enables user to manage attendance; view classes, lectures and upcoming events; and conducting a discussion would benefit the class participant. However, such an application that available in the market offers limited features. The Table 1 below shows the strength and weakness for each of the existing system.

Table 1 Comparison between Existing Systems

	Strength	**Weakness**
Attendance Tracker App	• Simple and user friendly interface • Can list event or class handled • Can easily manage attendance record. • Can generate and export attendance report.	• Cannot list upcoming event • Cannot interact with other user Stand-alone system
Facebook	• Simple, and user friendly interface design. • Functionality: lots of functionality available. • Have event management functionality • User can subscribe to events to receive notification about events organized by them in the future.	• Events system is too complex and requires invitation to fully works. • Cannot list events from multiple sources unless the source is subscribed. • After event attendance list is not reliable.
UTM eLearning	• Interface design simple. • Functionality: lots of functionality available. • Have upcoming event listing	• No application available on mobile phone. • Student cannot share their events with others. • Events management limited to certain user only. • No attendance record available.

From Table 1, we can see each of available application offers different kind of features. For Attendance Tracker App, the application has a great value in managing the class attendance and generate report but it been developed as stand-alone system which result some difficulties to interact with other user and cannot list the upcoming event. On the other side, Facebook offer better event management and user conservation but the system is quite complex where it requires invitation to fully work and after event attendance list is not reliable. For UTM eLearning, it offers almost similar feature as Facebook with simpler interface design and have a lots of functionality available such as upcoming event listing. However, the application is does not have attendance record features and not available in mobile application.

Therefore, the objectives of this project is to develop a mobile application that helps the users to manage and analyze the attendance record; to develop a mobile application that helps the users to view and manage all classes details and events; to develop a mobile

application that helps the users to post questions as well as discuss the answers, and also finding solutions to answered questions. We describe the methodology used in Section 2. In Section 3 we present our result and while discussion held in Section 4. Section would be conclusion regarding this study.

2.0   Methodology

One of the factors that determine the success of a system development is the choice of the methodology suitable to the system that is developed. Failure to use a suitable methodology in system development could results in problem while developing the system. The development of EzClass app requires an effective methodology that is able to effectively commence development in terms of cost and time. The very common approaches are waterfall model, agile model and Rational Unified Process methodology (Dyck, 2012).

The waterfall methodology is a linear approach in development. It can be seen as a waterfall continuously flow downwards with six phases which named as requirement analysis, system design, implementation, system testing, system deployment and system maintenance (Verma, 2014). Each phase of this model has well defined criteria. Agile means able to move quickly and easily. Agile methodology refers to software development which executed as fast as possible (Mauro, 2016). An agile software development methodology is quite popular and well accepted these days. It is a creative process run in dynamic development environment to meets flexibility and applies practicality to deliver the complete product. Rational Unified Process or in short RUP is an iterative software development process framework that is created by Rational Software Corporation, a division of IBM (Anwar, 2014). RUP is an adaptable process framework intended to be modified by organizations and software developers to fit in with their needs. RUP project life-cycle consists of four phases.

The Rational Unified Process was chosen as a methodology of this project due to its process model that provide for completing a system development project. The factors of choosing RUP as the software development methodology for EzClass system are; i) A complete methodology and emphasis on the accurate documentation; ii) A documentation that can show how the system should work; iii) This project need less time because it goes on throughout the Software Development Life Cycle.

3.0   Result

Use case model can be used to define the functionality of the system. Use case diagram should represent the interaction between the user and system. Use case modelling consist of two elements which is the actors and the use case. The following Figure 1 is the overall use case model for the EzClass application. While user interfaces design is one of the important aspects in an application. The design of the user interface should ease the user to perform tasks on the application system. Figure 2 illustrated an example of some EzClass interfaces available.
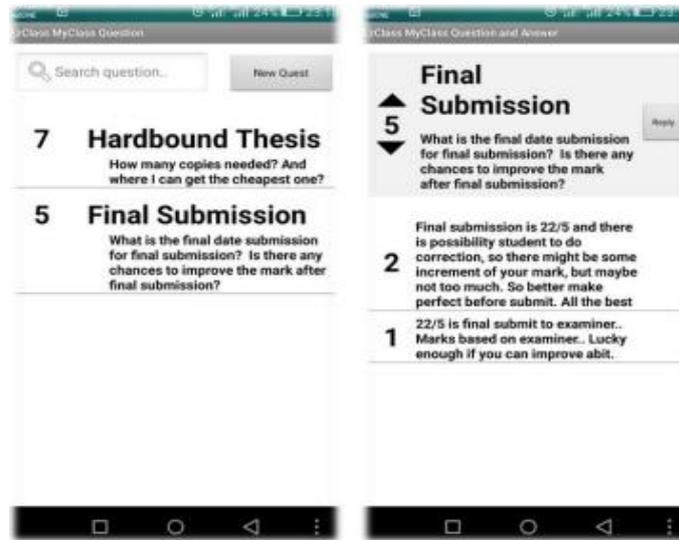
Figure 1 Use Case Diagram for EzClass
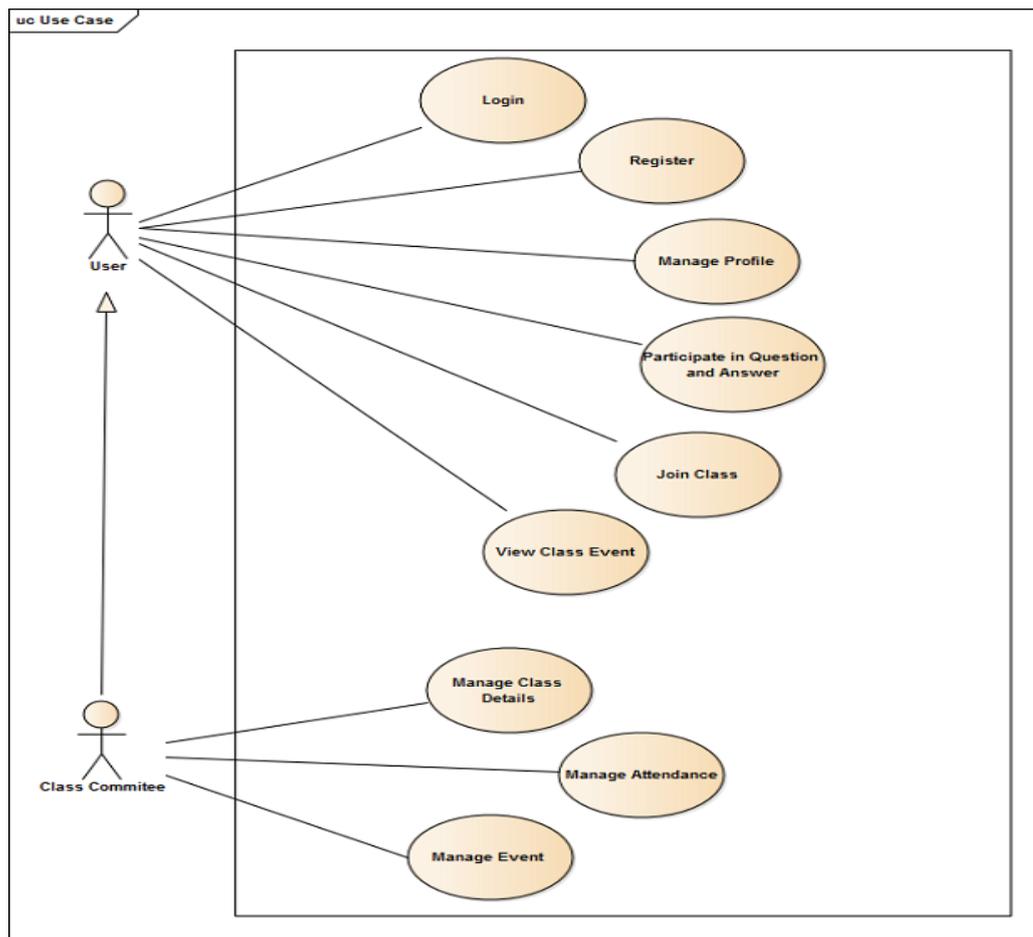

Figure 2 Interface for Class Discussion in EzClass Application

4.0   Discussion

EzClass is a mobile application purposed to manage attendance record, manage and view the events from which classes that are being scheduled and join class discussion. Basically EzClass should manage to encounter the weakness on existing methods and system available that been discussed in Table 1. This mobile application also should be run on mobile device that run with Android operating system and develop in JAVA languages. It is due to the usage of Android mobile device is much higher than other mobile device with different operating system and JAVA is its main programming languages. Every user interface has been designed as simple as possible to bring peace of mind for the users.

The advantage of this application, it is developed as mobile application which have huge number of user and using web server as database which allow user to share information. A part from that, the other advantage using this application is the application able to help the users to manage and analyze the attendance record; the application able to help the users to view the all classes events that are being scheduled; and the application able to help the users to post questions as well as discuss the answers, and also finding solutions to answered questions. As for the disadvantage that are present in the system is poor GUI design; poor error handling; the application has no notification for incoming event; and the application relies heavily on the server such that without connection to the server, the application fails to function.

5.0   Conclusion

The main outcome and achievement of this project is to achieve all the objectives. Therefore, EzClass is developed as mobile based system that able to ease instructor and students to handle class attendance, view all class related events and participate in class question and answer discussion.

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