NotisMe!: Crowdsourced Student Tasks Reminder with Gamification

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ABSTRACT

Students, tasks and time is inextricably linked. Each student is required to complete their tasks or assignments within a given period of time. However, for a certain number of students, they do not notice that there is a task that has been assigned to them and they lack motivation to finish the task given by lecturers. Therefore, the aim of the developed application is to increase students' awareness of the task that has been assigned to them and increase the students' motivation in finishing the task given to them. Mobile Application Life Cycle (MADLC) model has been chosen as the methodology for this project because it is frequently used in developing a mobile application. Gamification which consists of several game elements such as challenges, rewards, points, and badges are implemented in the application. The platform chosen for the application is android mobile-based platform. This project is about a mobile application that reminds students about tasks using the techniques of crowdsourcing and gamification. This application is a reminder application that allows users to share assigned tasks with their groups and reward users in term of badges for adding the tasks and completing them. Functionality testing has been carried out for the developed application. The outcome of the test is successful as all the twenty-two test cases is passed. Further improvement can be added to the application, for instance, add features like chat and leader board to the application. In conclusion, the application has been successfully developed and all the objectives have been accomplished.

KEYWORDS: Task, Crowdsourcing, Gamification, Mobile Application Life Cycle (MADLC)

1   INTRODUCTION

As a student, task and time management are vital. It is a responsibility of a student to complete every task within a given period of time. It has been identified that some students lack awareness of tasks given by lecturers that need to be completed in a given time. This behaviour may lead to awful consequences such as affecting their CGPA. On top of that, students lack of motivation in completing the given tasks. In order to overcome these problems, the mobile application is developed. This application is developed as a mobile-based application that uses crowdsourcing technique to gather tasks from lecturers and implement gamification to ensure enjoyable experience while using the application.

By using crowdsourcing, students will be more aware about tasks they are assigned to as they may create and update tasks to share to the others. Study by [5] stated that the goal of crowdsourcing is to provide a platform that includes participants from user devices to solve collaborative problems. For instance, Wikipedia is one of the crowdsourcing platforms [6].

Gamification in this project is used to encourage students' motivation to complete their tasks. According to [3], gamification offers game-like experience to users with the purpose of affecting users' behaviour. It is usually used for educational or non-educational matter.

2   SIGNIFICANCE

The development of this mobile application help students be aware of tasks assigned to them throughout the semester. It makes it easier for students to track their projects and assignments progress and due dates.

Furthermore, this application may increase students' motivation to complete tasks given through gamification. The application provides interesting rewards to students once they complete their tasks.

3   METHODOLOGY / TECHNIQUE

NotisMe!: Crowdsourced Student Tasks Reminder with Gamification applied Mobile Application Development Life Cycle (MADLC) as methodology. MADLC is always used to develop an Android mobile application [7]. However, only four phases from six phases of MADLC are adapted to the development of this mobile application as shown in Fig. 1. The phases involved are Identification, Design, Development and Testing. MADLC is used as mobile application because mobile application is complex and has a lot of functionalities. MADLC enables a systematic approach in developing this mobile application [1]. According to [7], MADLC enables developers to build a robust and fully optimized application. Crowdsourcing can be defined as taking a task that is normally performed by a group and outsourcing it by introducing an open call to an enormous network of people [2]. Furthermore, crowdsourcing technique is used in order to gather tasks from lecturers which is contributed by students. Gamification is also applied in this mobile application and can be defined as implementing game-design elements and game principles in non-game contexts [3]. Gamification is implemented as a reward in the form of badges to students when they have completed given tasks.
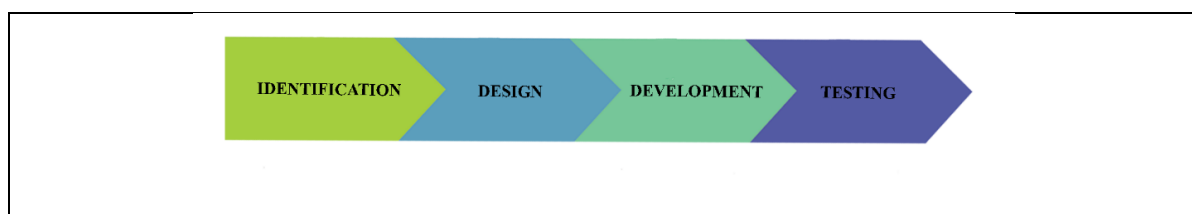

Fig. 2: Mobile Application Development Lifecycle (MADLC) (Adapted from Kaur & Kaur, 2015)

Fig. 2 shows the techniques used by the application. Crowdsourcing is used when users able to work in group to create, update and delete tasks and subtasks for the desired joined group. Badges are given when a user achieved certain achievements.
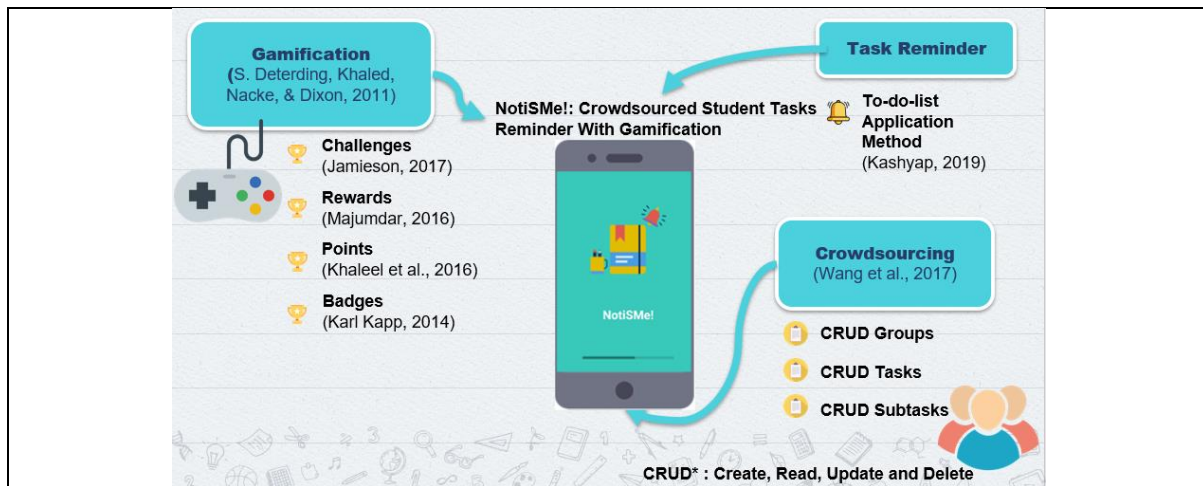
Fig. 2: Descriptions of Techniques Deployed in the application.

4 RESULTS

Functionality testing has been conducted for this application and the application produces the expected output. For all test cases, the outcome of the functionality testing were the expected results. Table 1 shows the summary of the functionality testing of the application.

Table 1 Summary of Functionality Testing

No	Test Cases	Test Objective	Result
1	Sign Up	To store new user data in database.	Achieved the intended outcome.
2	Login	To login to the application.	Achieved the intended outcome.
3	View User Profile	To view user profile.	Achieved the intended outcome.
4	Edit User Profile	To edit user profile and store it in database.	Achieved the intended outcome.
5	Create Group.	To create group.	Achieved the intended outcome.
6	Edit Group	To edit group and store it in the database.	Achieved the intended outcome.
7	Join Group	To successfully join a group.	Achieved the intended outcome.
8	Leave Group	To successfully leave a group.	Achieved the intended outcome.
9	Add Group Member	To successfully share the group key.	Achieved the intended outcome.
10	Delete Group	To successfully delete group.	Achieved the intended outcome.
11	Delete Group Member	To successfully delete group member.	Achieved the intended outcome.
12	Create Task	To successfully create task.	Achieved the intended outcome.
13	Edit Task	To edit task and store it in the database.	Achieved the intended outcome.
14	Delete Task	To successfully delete a task.	Achieved the intended outcome.
15	Set Reminder Task	To successfully set reminder for a task.	Achieved the intended outcome.
16	Receives Notification	To successfully receives reminder notification for the task.	Achieved the intended outcome.
17	Add Sub Task	To add sub task to a task.	Achieved the intended outcome.
18	Edit Sub Task	To edit sub task and store it in the database.	Achieved the intended outcome.
19	Remove Sub Task	To successfully remove a sub task.	Achieved the intended outcome.
20	Marks Task Progress	To successfully mark a sub task.	Achieved the intended outcome.
21	View Task Progress	To successfully view task progress.	Achieved the intended outcome.
22	View Badges	To view badges.	Achieved the intended outcome.

This mobile application enables users to create group, create task, update task, delete task, set reminder to tasks, view task progress and many more. Fig. 3 shows the interface of user menu, group menu and view badges. This shows that NotisMe!: Crowdsourced Student Tasks Reminder with Gamification functioning as it was designed.
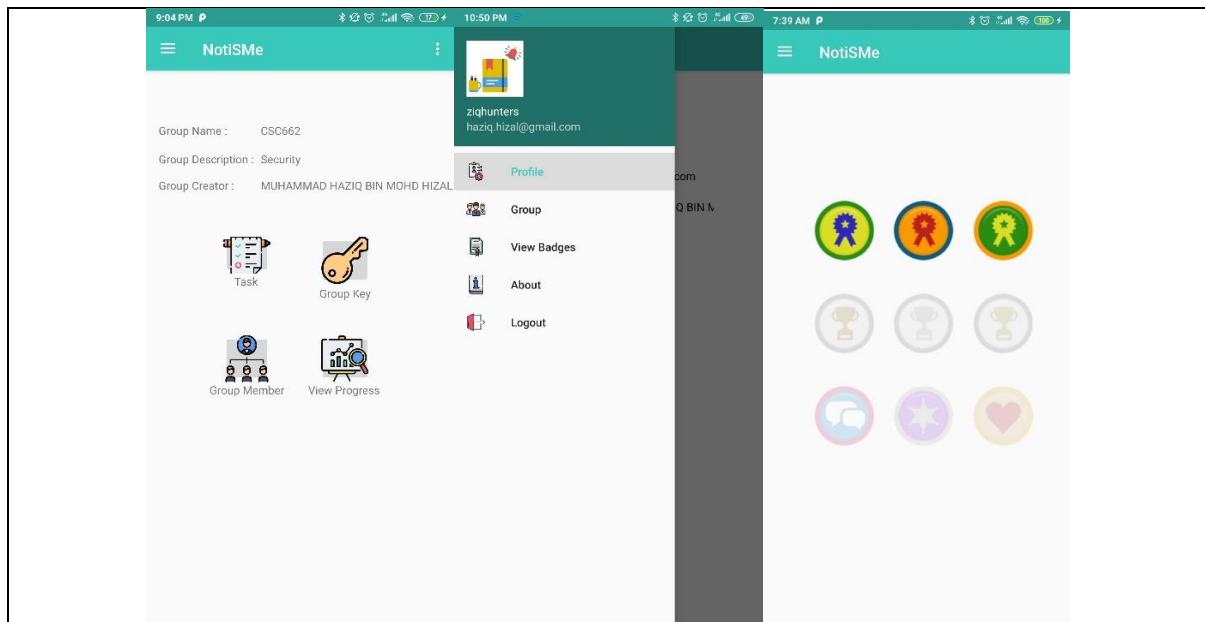
Fig. 3: Interfaces of User Menu, Group Menu and View Badges.

5   CONCLUSION

Initially, problems regarding students' lack awareness of tasks and motivation to complete the tasks are identified. Due to the problem, a mobile-based application to remind students about the tasks is developed. Crowdsourcing technique is used and gamification elements are implemented in the mobile application and is believed to be the most efficient way to overcome the problems. Crowdsourcing is used to gather information to help students to be more aware about tasks they are assigned to while gamification is used to provide rewards, badges and points to increase students' motivation to complete their tasks.

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