

Examination timetable alert mobile application for UiTM students

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Abstract: Final examination day is the most distress day to all UiTM students. This is because, their knowledge and understanding on the course taken will be officially tested. Therefore, it is important to the student to be alert on the examination schedule and other related information. So that the student could avoid any difficulties such as overlook on the exact date, identify the wrong location and time. However, in real situation, the final examination schedule and its related information are difficult to be retrieved and extracted. To solve this issue, an alert system is required in order to assist the student by reminding them on the examination schedule. Thus, the project which named as Examination Timetable Alert Mobile Application for UiTM Students has been proposed. It was a mobile application based that will alert the students on the final examination schedule for each subject that has been registered. Specific date, time and location of the examination will be provided to help the student to be prepared mental and physical and also manage their time wisely. This mobile application is developed by using Android Studio that followed the Waterfall methodology through the series of different stages. The performance of the proposed application has been evaluated by using the user acceptance test. The preliminary result of this project has shown that, the proposed project will elevate the way of student accessing, viewing and managing their examination timetable effectively.

Key words: *examination, timetable, alert system, mobile application.*

INTRODUCTION

Timetable is a kind of schedule that sets out times at which specific events are intended to occur. By using timetable all events that have been planned can be visualize in real without need to memorize. All the details such as events' name, time, date and location also can be stated so it will not be forgotten. Otherwise for university student, class and examination timetable are very importance for them in managing their college's life [1]. They need timetable to view date, time, and venue of their class and examination. However, not all students have ability in memorizing the timetable especially during the examination week. They need a mechanism or tool that can help to remind them on exact time, date and venue of the class or examination. If the student keeps using manual method of getting examination schedule, some of the student may misread the schedule because the PDF file contains examination schedule of all courses for

all UiTM campuses. For students that are not alert with their examination schedule, they may be late to sit for an examination or they may also end up by sitting in wrong examination venue [3].

One of the mechanisms that can be implemented in reminding the student is by using alert system. An alert system plays an importance role in helping the student to be prepared earlier on the upcoming events [2]. Thus, to assist the student in managing their daily activities efficiently, a mobile application that integrates timetable display with an alert system is proposed. The objective of this application is to elevate the way of student accessing, viewing and managing their examination timetable effectively.

This paper consists of four main sections. Section 1 describes the idea and highlighted issues of the proposed project. Section 2 explains several

important topics related to mobile application and alert system. Meanwhile Section 3 provides the methodology used in developing the application and

LITERATURE REVIEWS

This section discusses several topics on mobile application and alert system. In addition, a few existing systems that related to the proposed work were also being provided.

Mobile application

Mobile applications are software programs that are developed for mobile devices such as smartphones and tablets. It includes a set of programs running on a mobile device and performing the user's bound tasks [4]. Mobile apps are categorized as web-based or native apps created specifically for a particular platform. Native applications refer to specifically written and developed applications for a particular mobile operating system [5]. In other word, it won't be able to use the Android app on iPhone. According to Nazari & Ahmad (2017) native applications usually the best performance applications [6]. Users prefer to use these applications because can have full access to device features and offline capabilities. Native apps are installed through an application store such as Google Play or Apple's App Store.

Examination Timetable

Timetable is a sort of schedule that specifies moments when particular occurrences are to take place. The timetable gives students accurate information on when a specific item is scheduled. Moreover, examination timetable is schedule that contain information about examination subject, date, time and venue. Examination timetable is produced by universities and colleges for every semester or year examinations in conducting final examination [7]. Student that take final examination will refer timetable to get the details of the examination.

Alert System

The alert and notification system are a software-hardware combination that provides a tool to deliver a message to a number of recipients. The activity relating to an account is commonly shown. There are 3 type of alert that commonly used by mobile application that are, email notification, SMS notification, and push notification. Email notification commonly are automatic emails generated by system or software application and sent to designated recipients. The actions are the standard

Section 4 presents the interfaces and preliminary results on user acceptance. Finally, Section 5 concludes the overall work.

text and list of email recipients. Email alerts are linked to processes, flows, rules on workflow, approval or entitlement processes. Email notification is an 'electronic messaging system' that suitable for the transmission of electronic messages by specific recipients, including text messaging.

Short message service or simply known as SMS is form of text message that can be send to mobile phone through a service called Short Message Service Centre (SMSC) at the maximum payload of 140 bytes, the SMSC can send SMS messages to the end device [8]. SMS Notifications are text messages that are sent out of band in response to events or transactions that occur elsewhere. SMS notification tends to look similar to push notification when shown up on mobile lock screen, but text messages may be longer because it can be opened by the user to read the whole message. A push notification is a message that pops up on a mobile device. Application publishers can send push notifications at any time. Push notification allow application to notify users about incoming messages, while users don't need to be in the app to get the notification [9].

Push notifications look like SMS text messages and mobile alerts, but it only reaches users who have installed specific application that support push notification. Even that, push notification still widely used by application publisher for sending notification, since it doesn't get caught in spam filters as email notification, and the user doesn't need to spend any cost to receive notification as SMS notification that need some cost [10].

Existing systems

This section highlights the existing systems that available in web browser, Google Play Store, and Apps Store. The systems are My Study Life - School Planner, Timetable, Lumos UiTM, UiTM Final Examination Timetable Fetcher, UiTM iStudent App. The first application as shown in Figure 1 is My Study Life – School Planner developed by My Study Life, Ltd. This application is cross platform application which can be run on Android, IOS, and browser. All data synchronizes all devices seamlessly and is accessible even offline. My Study Life supports week-to-day rotation schedules and traditional weekly schedules. Incomplete tasks and future classes and exams will be notified to users.

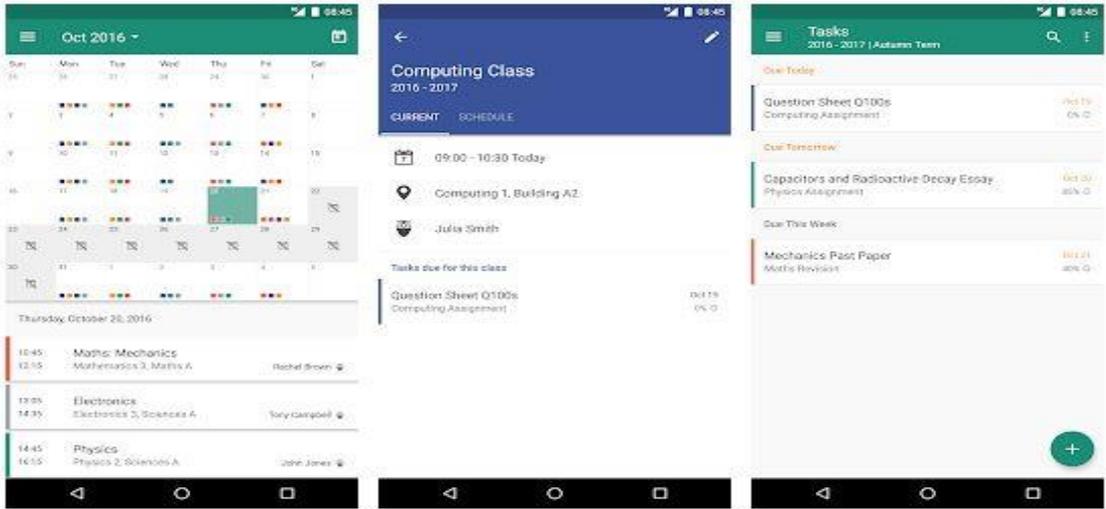


Figure 1 A screenshot of My Study Life – School Planner application [11].
Source: [11]

Figure 2 presents the second application is Timetable developed by Moritz Iseke. This application has many additional features such as calculate the amount of absences, automatically mute mobile device during events and so on. Multi-language support

also included. But user must manually input all the details such as course code, time, classroom, etc. to operate all the features in this application. User also will get notification for upcoming classes or exams.



Figure 2 A screenshot of Timetable application [12].
Source: [12]

Next application is Lumos UiTM as shown in Figure 3 offered by Cyber X. This application tends to be most popular application among UiTM student since this application have lot of unique features. User can generate timetable automatically, however user need to login to this application by using their matric id and

password and then select the campus before the timetable can be generated. The timetable generated is only class timetable. User can set notification about upcoming class. This application development is discontinued, and the user doesn't have access anymore to this application.

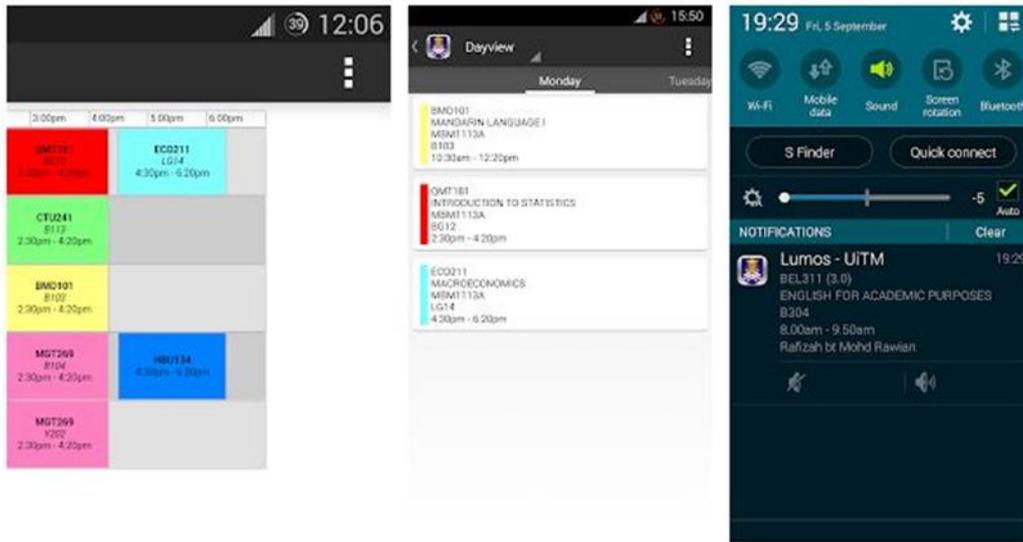


Figure 3 A screenshot of Lumos UiTM application [13].
Source:[13]

The fourth application is UiTM Final Examination Timetable Fetcher by Afif Zafri as shown in Figure 4. This application is a web-based application. Final examination timetable of UiTM student

will be generated after the user select all of their courses. This application will fetch data from an UiTM website. However, this application didn't provide alert or notification feature for upcoming exams.

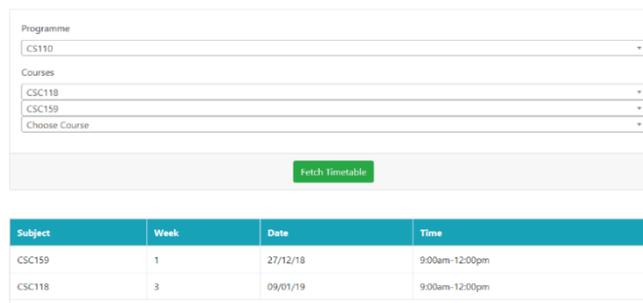


Figure 4 A screenshot of UiTM Final Examination Timetable Fetcher [14].
Source: [14]

Next application in Figure 5 which is UiTM iStudent App. This application is developed by UiTM and available for Android also IOS platform. UiTM iStudent App is not an application that only specific to

timetable. However, user can also view their class timetable by only login to this application using matric id and password. This application also lacks notification and alert feature.

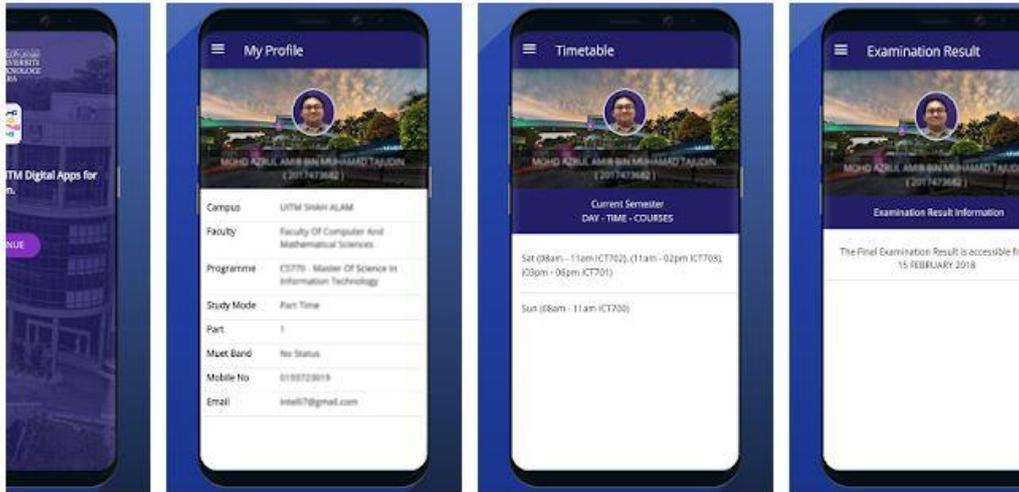


Figure 5 A screenshot of UiTM iStudent App application [15].
Source: [15]

Table 1 shows the differences and comparison of different timetable application that has been observe by the project.

Table 1 Comparison between existing timetable applications.

	My Study Life – School Planner	Timetable	Lumos UiTM	UiTM Final Examination Timetable Fetcher	UiTM iStudent App	Proposed App
Platforms	Android, IOS, Browser	Android	Android, IOS	Browser	Android, IOS	Android
Automated Timetable Fetch	No	No	Yes	Yes	Yes	Yes
Additional Features	Task list	Task list, grades calculator, hours absent counter	CGPA calculator, Radio, campus maps	No additional feature	View profile, view examination result	Automatic timetable fetcher, Examination days counter, alert notification
Notification/Alert	Yes	Yes	Yes	No	No	Yes
Accessibility	Offline	Offline	Offline/ Online	Online	Online	Online

It can be concluded that, Lumos UiTM application is the best application among others since it has several additional features, include automated timetable fetcher, and alert function. However, My Study Life – School Planner may be the worst application rather than other existing applications since lack of function and features. The proposed work will be run in android platform and the function of automated timetable fetch will be implement. Examination Timetable Alert Mobile

Application for UiTM Student also will be included with notification and alert feature.

METHODOLOGY

Figure 6 illustrates the system architecture of Examination Timetable Alert Mobile Application for UiTM Student. Firstly, data scraper API will scrap the final examination data from source web page. Then retrieved data will be saved into scraper database. Next, the application will interact with scraper API and database to get all the user details

and timetable data based on parameter input by the user since the user login into the application. APIs scraper technique is implemented to application to make data scraping more effective and reliable. At the end, final examination timetable will be displayed, and the alert system will automatically set push notification and alert for the user that contains examination details based on date and time data of search result.

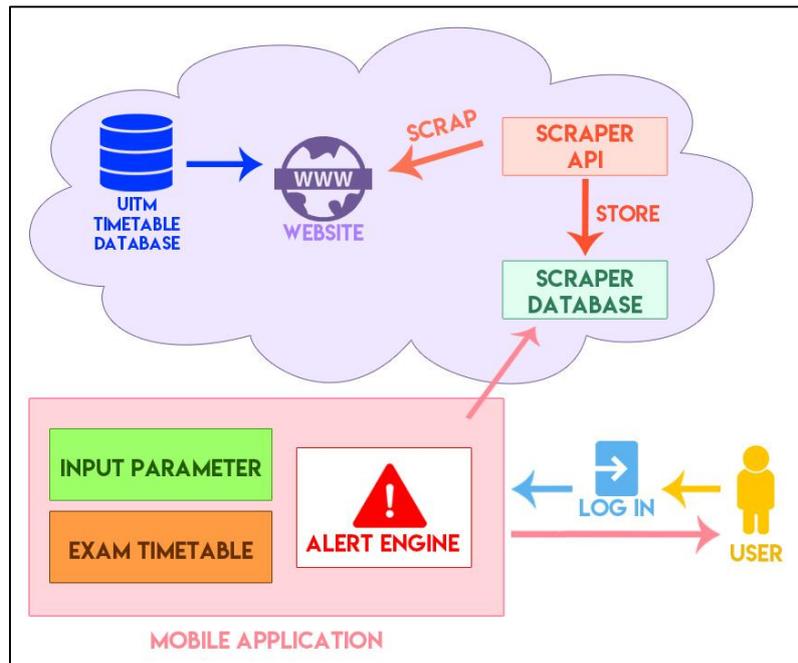


Figure 6 System architecture of the proposed application.

IMPLEMENTATION AND RESULTS

During the data gathering phase, the project collects data from survey that is collected from UiTM’s students from several campuses. This survey is conducted to seek information to analyses whether students prefer to get and view the final examination timetable by using mobile application or by using the conventional way. The total respondents of the survey are 82 students. In this questionnaire, students are asked whether the student having difficulties on getting examination timetable and importance of alert system. The result in the following figures is based on the students’ survey result.

Based on Figure 7, the pie chart illustrates 81.7% of the respondents agree that it is difficult for them to get the examination timetable details. And the scale of how difficulties can be observed in Figure 8. As shown the bar graph is the scale of difficulties of getting final examination timetable in scale from 1 (very easy) to 5 (very hard). Most of student rate the scale of 3 and 4 which is moderate and hard with the percentage of 43.25% and 42% respectively. From this questionnaire, the study can state that the student may had difficulties by conventional way of getting examination timetable such as by getting from a PDF file provided or using source website.

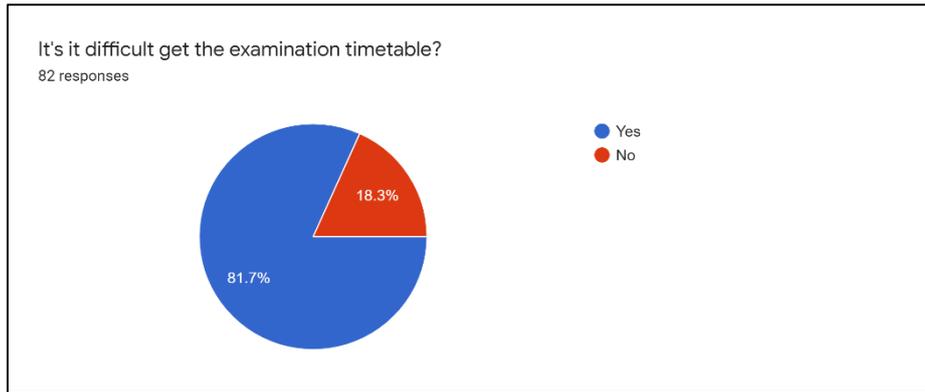


Figure 7 Pie chart of difficulties in getting examination timetable.

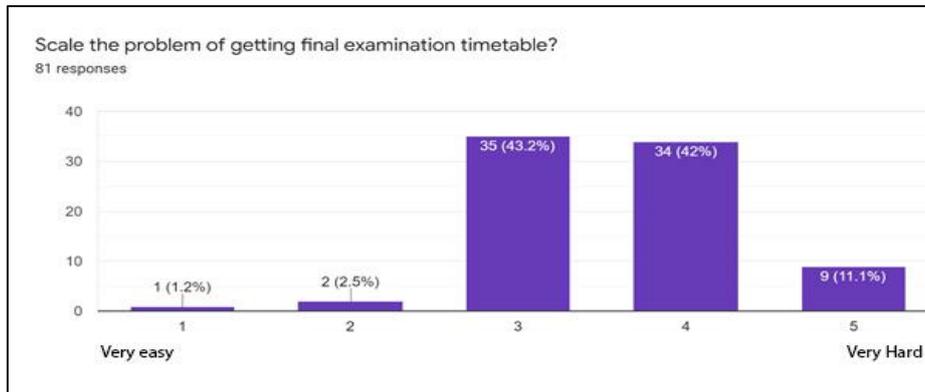


Figure 8 Bar chart scale of problem getting examination timetable.

In addition, the following figure can prove the analysis that was explained, showing that students are indeed facing difficulties in getting examination timetable. Figure 9 shown that only 17.1% of students from the survey respondent not having difficulties to read and find examination timetable details from their source compared to 82.9% of student that facing issue of getting final examination

timetable. This may occur because by using conventional ways, the student need scroll entire page or website that contains all examination details of courses for all UiTM campuses to find their timetable.

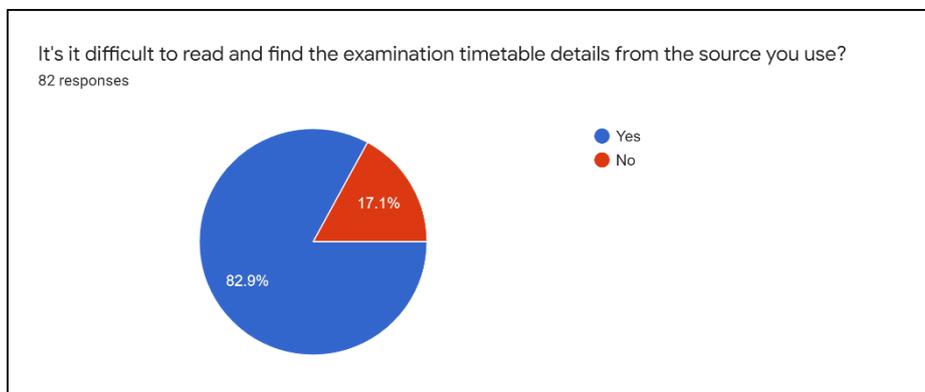


Figure 9 Pie chart of problem in read and find examination timetable detail.

The next questionnaire is about what medium the student prefers to view the examination timetable. Based on Figure 10, the bar chart shown 86.6% of student more prefer to view the timetable in mobile rather than laptop/pc and printed paper which the

percentage of 17.1% and 18.3% respectively. This may be due to fact that mobile phone is smaller device that easily to be carry and portable. Furthermore, in nowadays, most of the student already have their own mobile phone.

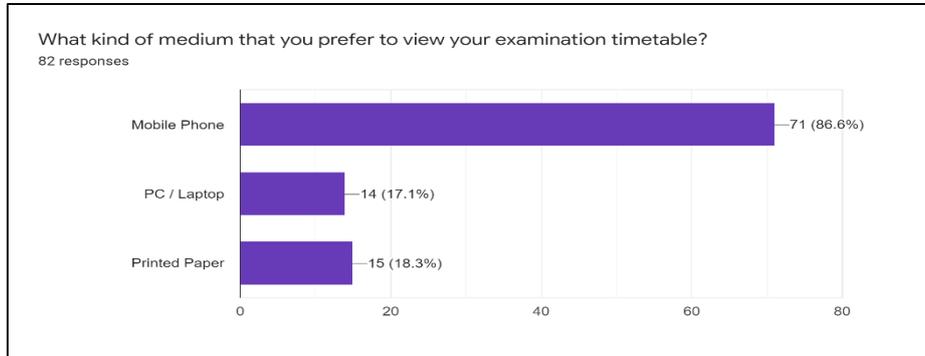


Figure 10 Bar graph of preferred medium to view examination timetable.

Based on Figure 11, the questionnaire is about test users whether alarm is needed to make them on time to sit for exam. The pie chart illustrates 90.2% of respondents do need alarm to make them be on time and remind them for exam. This might be because

they stayed up too late studying the night before an exam and eventually causing them to wake up late the next morning for their exam. The remaining percentage shows that some students can be on time without the help of alarm.

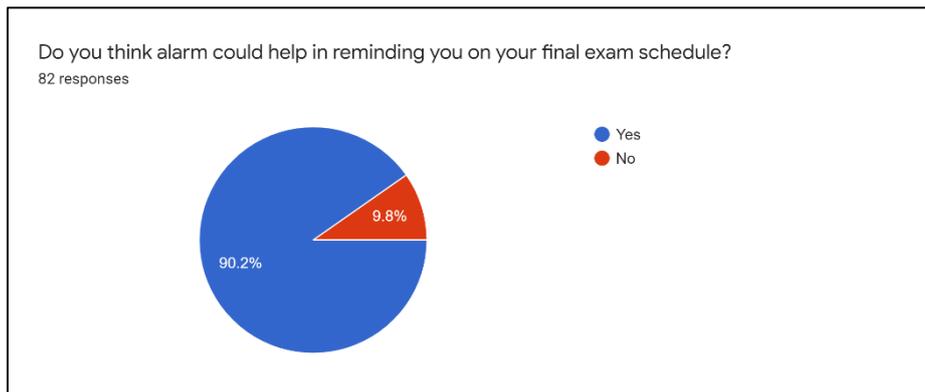


Figure 11 Pie chart of student's perspective that alarm can be useful.

Figure 12 shown the interface of the proposed mobile application. There were several sections that has own function. The student will need to login to the application by using their student ID and password. Next, the application will fetch timetable data and redirect the student to the calendar interface

that display calendar along with the date of examination. The student can select whenever want to display the timetable in calendar view or simple list view. The alarm will be automatically activated based on date and time of examination since the timetable data is fetched.

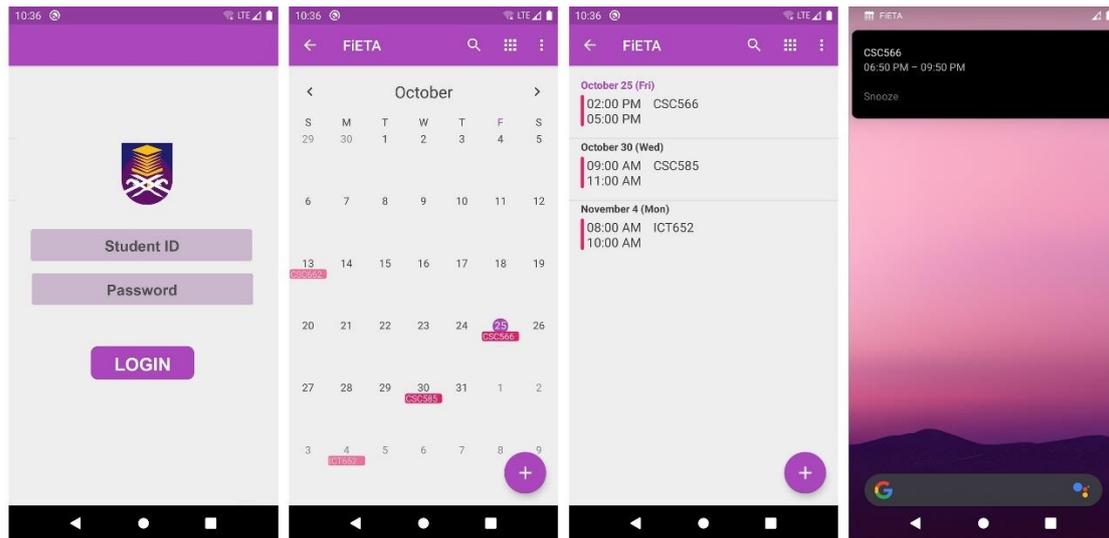


Figure 12 Mobile application interface design.

CONCLUSIONS

The proposed project will help UiTM students and change the way of student to get and view the examination schedule using effective way rather

application to help them alert and remind the students for their examination schedule so that they will not be missed to study early before the examination date. In the conclusion, the proposed project Examination Timetable Alert Mobile

REFERENCES

- [1] Faisal Z.Miqdadi, Abdulla F. ALMomani, Mohammad T, and N. M. E. (2014). The Relationship between Time Management and the Academic Performance of Students from the Petroleum Institute in Abu Dhabi , the UAE. *ASEE 2014 Zone I Conference*, 4, 1–5.
- [2] Hanover Research. (2014). Early Alert Systems in Higher Education. *Academy Administration Practice*, (November). Retrieved from <http://www.academicimpressions.com/news/vetting-early-alert-technologies>
- [3] Time, K., Time, T. K., & Supervision, F. C. (2017). *How to manage late arrivals*.
- [4] Islam, M. R., & Mazumder, T. A. (2010). Mobile Application and Its Global Impact. In *International Journal of Engineering & Technology IJET-IJENS*.
- [5] Jobe, W. (2013). Native Apps Vs. Mobile Web Apps. *International Journal of Interactive Mobile Technologies (IJIM)*, 7(4), 27.
- [6] Nazari, M. A., & Ahmad, W. (2017). *Evaluating Mobile Application Development Approaches and Recommend Appropriate Among Them*. (January).
- [7] Bania, R. K., & Duarah, P. (2018). Exam Time

than old method that may lead the student misread the document contents then getting false details. It is because the conventional method sources contain examination schedule of all courses for all UiTM campuses Additionally, for students that are not alert with their examination schedule can use this Application for UiTM Student is proposed in order to create an alternative to the students by reminding them on the examination schedule. This project will elevate the way of student accessing, viewing and managing their examination timetable effectively.

Table Scheduling using Graph Coloring Approach. *International Journal of Computer Sciences and Engineering*, 6(5), 84–93.

- [8] Brown, J., Shipman, B., & Vetter, R. (2007). SMS: The short message service. *Computer*, 40(12), 106–110.
- [9] Visuri, A., van Berkel, N., Okoshi, T., Goncalves, J., & Kostakos, V. (2019). Understanding smartphone notifications' user interactions and content importance. *International Journal of Human Computer Studies*, 128, 72–85.
- [10] Sumitra Narayanan. (2016). Reason Use Push Notification.
- [11] My Study Life, L. (2017). My Study Life - School Planner. Retrieved May 3, 2019, from https://play.google.com/store/apps/details?id=com.virblue.mystudylife&hl=en_IN
- [12] Moritz Iseke. (2014). Timetable. Retrieved May 3, 2019, from https://play.google.com/store/apps/details?id=mimi.android.timetable&hl=en_IN
- [13] Cyber X. (2017). Lumos – UiTM for Android – xTech. Retrieved May 4, 2019, from <http://cyberx.x10.mx/v2/lumos-uitm-for-android/>
- [14] Afif Zafri. (2017). UiTM Final Exam Timetable Fetcher. Retrieved May 4, 2019, from <https://uitmtimetable.com/finalexam/>

[15] UNIVERSITI TEKNOLOGI MARA. (2018).
UiTM iStudent. Retrieved May 4, 2019, from

[https://play.google.com/store/apps/details?id
=my.edu.uitm.istudent&hl=en](https://play.google.com/store/apps/details?id=my.edu.uitm.istudent&hl=en)