

MULTIMEDIA UNIVERSITY

SECOND TRIMESTER, SESSION 2018/2019

EES 3036 MIDTERM REVIEW

EES 3036 – PROJECT MANAGEMENT

Lecturer: Chan Mun Leong

(Group 13)

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PROJECT DETAILS

Type of Project: Mobile Application Development

Project Name: Instant MMLS Notifications

Development Platform: Android Studio

Project Management Software: Github.com, Git

Project Members Job Scope:

Chai Yee Ting (Project Manager):

Task:

- General project administration.
- Progress and resource monitoring.
- Overseeing the production and development of project deliverables. Acquiring support and advice to further enhance project output.
- Host and conduct meetings to ensure collaboration between members.

Liyana Safinaz binti Abdul Kadir (Project Planner):

Task:

- General planning for the timeline of the project.
- Estimate resources required by the project and the members Joint management duties along with the Project Manager
- Identify specific activities that is required to be performed during the project. Drafting of the software development model that the project shall utilize.



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Haziq Imran bin Hanip (Sales Engineer):

Task:

- Analyze and identify business requirements.
- Perform estimates on project costs by studying the requirements, related customer documents as well as software requirements.
- Determine improvable factors by performing analysis on the cost-benefit ratios Obtain acceptance by means of presentation or demonstrating to the end-users
- Prepare sales report by collecting and processing the information acquired from the project.

Hor Sui Lyn (Product Owner):

Task:

- Analyze market trends and provide suggestion to the team.
Communicate with the end users of the production.
- Maintain communication with the stakeholders of the product.
- Provide insightful feedback to the project team in terms of the work and the process of the work
- Aiding the team to continuously improve their methods.

Ahmad Nabil bin Nasrudin (Software Developer):

Task:

- Designing the flowchart and the design block diagrams of the product
- Implementation of the software architecture in code set forth by the project members.
- Provide insights regarding the technicalities of the implementation of the ideas onto code
- Combining the elements and modules to perform testing and verification.
Ensure the adaptability and flexibility of the program.



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Chia Jason (Software Developer):

Task:

- Ensuring the overall quality of the project is satisfied through extensive testing and feedback.
- Develop methods and functions to aid the development process
Maintain and produce quality software.
- Maintain excellent version control of software as well as to provide comprehensive documentation to the software.
- Provide feedback on the process and product of the project through auditing.



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Timeline:



Figure 1.0 Gantt Chart for the project timeline. (Created using LibreOffice Calc)



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Cost Estimation:

Calculated using 2 point estimation model.

Activity	Optimistic(RM)	Pessimistic(RM)	Estimation(RM)
Salaries of Software Development Team	4000	7000	5500
Standard GUI (Freelance Designer)	50	150	100
Engagement and Marketing	100	200	150
Android Developer License	100	120	110
Hardware Components	300	500	400
Quality Assurance(QA)	50	150	100
Additional Cost(Utilities,Office Rental,Other software license)	1750	2250	2000
Total	6350	10370	8360

Figure 1.1 Project Cost estimation metrics.



BUSINESS CASE

Introduction:

Multimedia Learning System (MMLS) is Multimedia University's (MMU) online learning portal, functioning as an online bulletin board for students to view course notes, assignments and announcements. Posting of updates on MMLS are a common practice among lecturers, as it is common for students to monitor MMLS for updates. Although MMLS is a convenient way to access course materials and view updates, the lack of notification system meant that users are to periodically monitor MMLS for new content and updates.

With MMU students being the core target audience, A survey of sample size 38 is conducted among them. It was shown that 68.4% of students checked MMLS at least once a day with 31.6% checking it multiple times a day. This can be attributed to students checking for class cancellation or change of venue, replacement classes, lab sheets, test results and other updates.

How often do you check MMLS using web browser?

38 responses

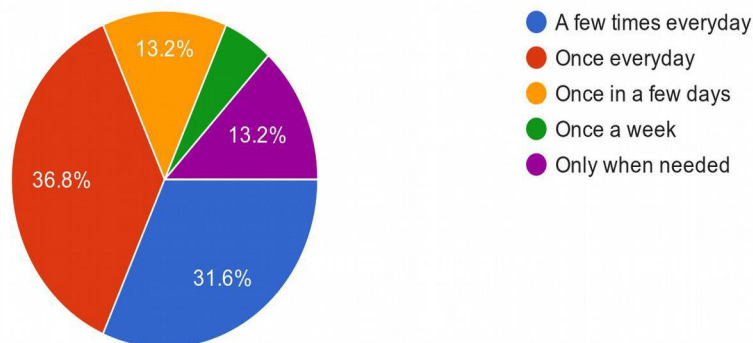


Figure 2.1

MMLS usage on web browsers



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Solution:

Notifications provide convenience to users by providing real time updates when something new is released. The MMLS main page, where all the announcements can be viewed, retains all the updates made, even though they may no longer be useful. The average student has 4 classes in a trimester, and with multiple announcements in a week, there exist a possibility to miss an announcement as weeks go by and the main page becomes cluttered. A push notification is sent to the user when there is a new announcement or new content available - depending on the user's preferences.

The following pie chart from the study shows that **86.8%** of the surveyed individuals find the existence of a mobile application which listens to MMLS posts and notify them whenever and wherever to be useful. (Refer to appendix 1 for extra statistics on the survey)

If there is a mobile application which will generate notifications whenever there is an update on your MMLS account.....

38 responses

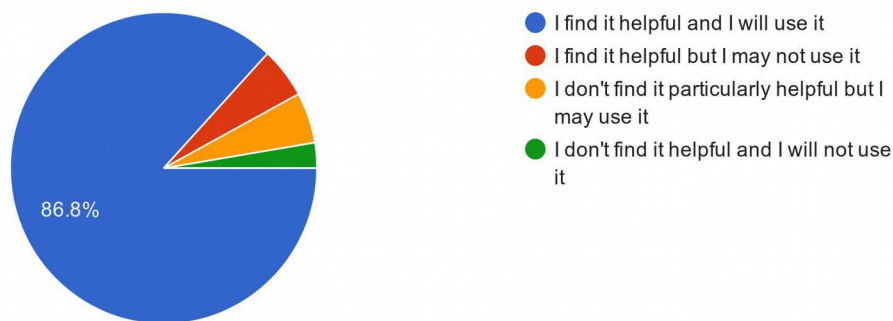


Figure 2.2

Surveyed Output on the market demand for the proposed application



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Existing Solutions :

Currently there is no system which provides real time MMLS updates. “MMU Online”, the official mobile app created by MMU, provides access to services such as MMU Portal, Bulletin Board, MMLS and Student Service Center but it **does not** provide a notification service. The application is also reported to request for user credentials periodically to stay authenticated with the system. In fact, only 10.5% of the surveyed individuals responded that they will use the app frequently.

Are you using the MMU Mobile application to check MMLS?

38 responses

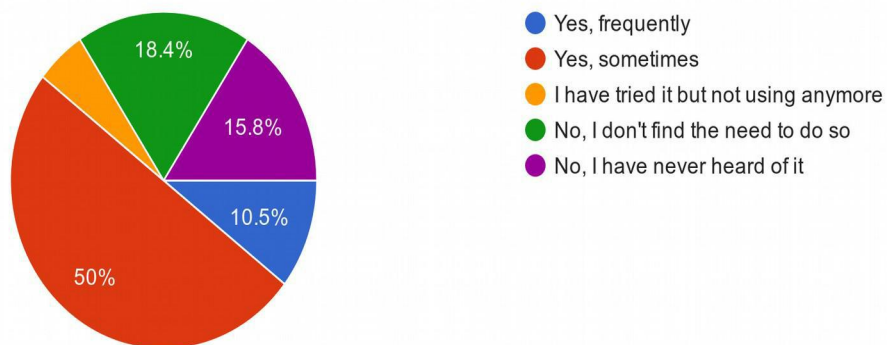


Figure 2.3

Surveyed Output on the feedback for existing applications



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Functionality and Features :

1. The application shall access onto MMLS and periodically (15 minutes /6 hours/ 1 day/ 3days/ Never) checks for updates and sends a push notification when it detects there is new data. The push notification has two options, one to dismiss and another to view the entire message. If the user chooses to view the message, the user's default browser will be used to display the HTML content retrieved and detected as "latest updates".
2. Additionally, The option to 'share' the notification onto a social media platform such as WhatsApp or Facebook to alert more of his or her friends who may not have the App installed but the user is aware to be in the same class is made available to users of the application.
3. Due to limited connectivity concerns, Operating in the 'offline' mode which allows user to view posts that were previously loaded onto their phone is also possible. MMLS post can be checked regularly even where there isn't any internet connection available to the user.
4. Ultimately, the implementation of an organizing framework such as a search bar which in turn allow users to freely sort and search for the post that they are interested to view again. Most student may need to recheck a single post multiple times and this functionality serves to handle that demand without the navigating through MMLS or the MMLS app.
5. Usability and simplicity are the main focus of the project, a simple but efficient app has far more value compared to a complicated one if utilized correctly.



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SWOT (Strength, Weakness, Opportunities and Threats):

- Strengths: Simple and clean, easy to use application that can be used by many to improve and enhance their MMLS experience.
- Weaknesses: Only available on the Android Platform, constant checking requires decent internet connection and may take a toll for users on mobile data.
- Opportunities: As a model for a campus wide notification system (Amber Alert, Notify Electricity Shutdowns or Closure of Venues etc.)
- Threats: User credential is stored locally on the smart phone to ease access however is a security threat. Further work is required on encryption to secure the password.

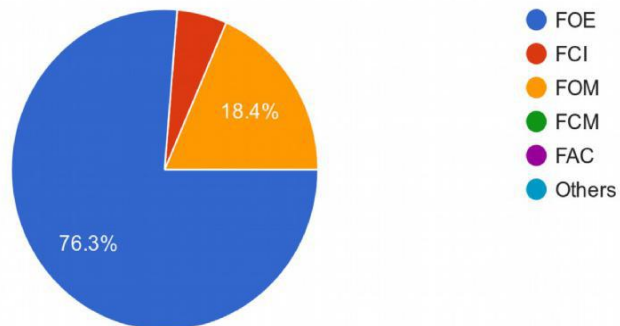
Recommendations:

As such, the production of the described application is recommended to tackle the missing link in the current market, to provide a simple and clean method to allow users of MMLS to stay up to date and notified whenever and wherever there is any new postings on the learning system. The application is highly recommended as it has the potential to substantially impact the community in Multimedia University.

Appendix 1

Which faculty are you from?

38 responses



Which year are you in?

38 responses

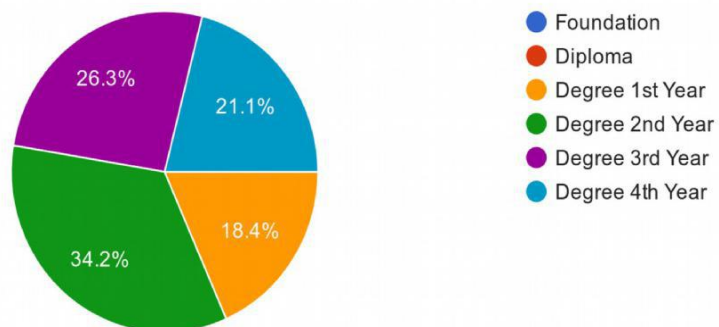


Figure A1 & A2

A1 : Demographics of surveyed audience (Faculty)

A2 : Demographics of surveyed audience (Year of study)

DELIVERABLES

1. Meeting Minutes

- Meeting Minutes 1
- Meeting Minutes 2
- Meeting Minutes 3
- Meeting Minutes 4

2. Standard Operational Procedure (SOP)

- Bug Reporting and Fixing
- Customer Support and Feature Request

3. Design Documentation

- Program Flow Chart
- Mobile Application Use Case
- Mobile Application User Flow Chart

4. Software Requirement Document



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Project Name : Instant MMLS Notifications

Minutes of the weekly meeting

ALTF4-MEETING/26112018

Date : 26 November 2018
 Time : 1:05 pm
 Venue : Design and Innovation Lab (AR0008), Faculty of Engineering, MMU Cyberjaya

Present:

No	Name	26/11	4/12			
1.	Chia Jason	/				
2.	Chai Yee Ting	/				
3.	Ahmad Nabil bin Nasrudin	/				
4.	Haziq Imran bin Hanip	/				
5.	Hor Sui Lyn	/				
6.	Liyana Safinaz binti Abdul Kadir	/				

/ : Present

L : On Leave

- : Absent

O : Official Duty

No	Item	Action / Due Date
01	Confirmation of Minutes	
	Not applicable for first meeting	
02	Matters Arising	
	Understanding the demand of the market <ul style="list-style-type: none"> Client needs must be understood before we proceed with the project. Problem statement must be defined. The project shall utilize the “Waterfall” development model.	Google form survey by Wednesday 28/11
03	Departmental Updates	
	Role assignment <ul style="list-style-type: none"> Chai Yee Ting is elected Project Manager. Haziq Imran bin Hanip is assigned as Sales Engineer. Hor Sui Lyn now owns the product. Liyana Safinaz is assigned as Project Planner. Chia Jason is hired to be the Developer. Ahmad Nabil bin Nasrudin is hired to be the Developer. Task assignment <ul style="list-style-type: none"> Yee Ting will come up with a cost / budget plan for the project. Liyana will draft the gantt chart for the project timeline. Haziq to draft the business recommendations. Sui Lyn will conduct a quick online survey to gauge the market. Nabil will get himself familiar with Android Studio by installing it. Jason to write the minutes and compile the project details. 	Task listed in the assignment list must be done by Wednesday 28/11

04	Other Matters	
	Confirmation of next meeting time	Next meeting on 4 th of December

Meeting adjourned at 1.45pm

Prepared by,

Chia Jason

Developer

Approved by,

Chai Yee Ting

Project Manager



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Project Name: Instant MMLS Notifications

Minutes of the weekly meeting MEETING/04122018

ALT-F4-

Date : 4 December 2018
Time : 9.05 am
Venue : Design and Innovation Lab (AR0008), Faculty of Engineering, MMU Cyberjaya

Present:

No	Name	26/11	4/12	11/12	18/12	25/12
1.	Chia Jason	/	/			
2.	Chai Yee Ting	/	/			
3.	Ahmad Nabil bin Nasrudin	/	/			
4.	Haziq Imran bin Hanip	/	/			
5.	Hor Sui Lyn	/	/			
6.	Liyana Safinaz binti Abdul Kadir	/	/			

/ : Present

L : On Leave

- : Absent

O : Official Duty

No	Item	Action/Due Date
01	Confirmation of Minutes No further corrections from previous minutes, the revised minutes were adopted unanimously Confirmed by Chai Yee Ting, Supported by all members	
02	Matters Arising Design on system architecture Discussion in detail about the function proposed Application must be able to push notification and share on social media (i.e Whatsapp) Stores user data on app for auto-login by app App can store notifications (html) for offline usage and search functions can be used to browse through previous notifications Notification checking interval to be chosen by user Show action buttons like 'share' and 'dismiss' on notification Introduction to management software used – GitHub Explanation on functionalities, how to start discussions and bring up issues	Jason & Nabil

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Project Name: Instant MMLS Notifications

03	Departmental Updates	
	Updates Issues with Android Studio from Nabil <ul style="list-style-type: none"> Downloaded and tested software – problem with emulator, lagging after building UI Survey updates from Sui Lyn <ul style="list-style-type: none"> More positive feedback on significance of project Task Allocation Nabil and Jason to work on the architectural design of the application Liyana and Yee Ting will prepare meeting minutes and plan flow chart for overall work operation Haziq will do an analysis based in the requirement of the project Sui Lyn will work on the layout design and user interface	Task must be completed by Tuesday 11/12
04	Other Matter	
	Next meeting time confirmed Future weekly meeting has been set to Tuesday 6pm	Continues at 11 December 2018

Meeting adjourned at 10.10am
 Prepared by,

Liyana Safinaz
 Project Planner

Approved by,

Chai Yee Ting
 Project Manager



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Project Name : Instant MMLS Notifications

Minutes of the weekly meeting

ALTF4-MEETING/10/12/18

Date : 10 December 2018
 Time : 12 pm
 Venue : Design and Innovation Lab(AR0008), Faculty of Engineering,MMU Cyberjaya

Present:

No	Name	26/11	4/12	10/12	19/12	
1.	Chia Jason	/	/	/		
2.	Chai Yee Ting	/	/	/		
3.	Ahmad Nabil bin Nasrudin	/	/	/		
4.	Haziq Imran bin Hanip	/	/	/		
5.	Hor Sui Lyn	/	/	/		
6.	Liyana Safinaz binti Abdul Kadir	/	/	/		

/ : Present

L : On Leave

- : Absent

O : Official Duty

No	Item	Action/Due Date
01	Confirmation of Minutes The previous meeting minute was read by all the member. The original meeting date 11/12/18 was forwarded to 10/12/18 due to public holiday. Confirmed by Chai Yee Ting, Supported by all members.	
02	Matters Arising Design on System Architecture <ul style="list-style-type: none"> Different subjects are able to be loaded based on classes with scripts User Interface Suggestions <ul style="list-style-type: none"> Logo of MMU is changed to ims on login page Function of UI which are scroll bar, search, log out option, setting (store frequency, stored post, deletion of post, refresh button) is added in UI Time setting can be set as 15 minutes /6 hours/ 1 day/ 3days/ Never SOP1 and SOP2 Suggestions <ul style="list-style-type: none"> Topic of SOP1 and SOP2 are set as bug reporting and support and feature request procedure and application complaint procedure respectively 	Nabil & Jason Sui Lyn Liyana, Haziq and Yee Ting
03	Departmental Updates Progress Update <ul style="list-style-type: none"> Android Development from Jason and Nabil <ul style="list-style-type: none"> MMLS page is able to be loaded with scripts Proof of concept is completed User Interface from Sui Lyn <ul style="list-style-type: none"> MMLS basic login page with ID and password is designed Requirement analysis from Haziq <ul style="list-style-type: none"> User requirements and basic functional requirements are added in Software Requirements Document in Github Flow plan updates from Yee Ting and Liyana is available on Github Task Allocation	Task listed need to be done before 19/12, Tuesday

	<ul style="list-style-type: none"> • Nabil and Jason will continue on architecture design of the application • Liyana, Haziq and Yee Ting will prepare SOP1 and SOP2 • Sui Lyn will modify user interface according to the suggestion from members 	
04	Other Matter	
	Next meeting time confirmed to be held 6pm, Tuesday	Continue at 19 December 2018

Meeting adjourned at 1pm

Prepared by,

Chai Yee Ting

Project Manager

Approved by,

Chai Yee Ting

Project Manager



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Project Name : Instant MMLS Notifications

Minutes of the weekly meeting

ALTF4-MEETING/19/12/18

Date : 19 December 2018
Time : 6 pm
Venue : CNMX1002, Central Lecture Complex, MMU Cyberjaya

Present:

No	Name	26/11	4/12	10/12	19/12	31/12
7.	Chia Jason	/	/	/	/	
8.	Chai Yee Ting	/	/	/	/	
9.	Ahmad Nabil bin Nasrudin	/	/	/	/	
10.	Haziq Imran bin Hanip	/	/	/	/	
11.	Hor Sui Lyn	/	/	/	/	
12.	Liyana Safinaz binti Abdul Kadir	/	/	/	/	

/ : Present

L : On Leave

- : Absent

O : Official Duty

No	Item	Action/Due Date
01	Confirmation of Minutes No further corrections from previous minutes, the revised minutes were adopted unanimously Confirmed by Chai Yee Ting, Supported by all members	
02	Matters Arising	
	Github repository <ul style="list-style-type: none">Work flow optimisedSource codes can be committed effectively SOP discussion <ul style="list-style-type: none">Completed SOP presented to other membersSmall errors to be corrected, addition of loop Midterm Review <ul style="list-style-type: none">Discussion on what to prepare - presentation and reportCompilation and documentation to be done	Jason Nabil and Yee Ting, Haziq and Liyana
03	Departmental Updates	
	Updates <ul style="list-style-type: none">Android Development from Jason and Nabil<ul style="list-style-type: none">Extracted data from MMLS, showing title, content, announcement and lecture notesUser Interface by Sui Lyn<ul style="list-style-type: none">A more completed XML layout has been done	

	Task Allocation <ul style="list-style-type: none"> Nabil and Jason to further work on application development, and to pass source code for documentation throughout the work Yee Ting to compile all the document for midterm review 	
04	Other Matter	
	No meeting for next week for more work to be completed before further discussion.Meeting to be held before Midterm Review.	Continues at 31 December 2018

Meeting adjourned at 6.30pm
Prepared by,

Liyana Safinaz
Project Planner

Approved by,

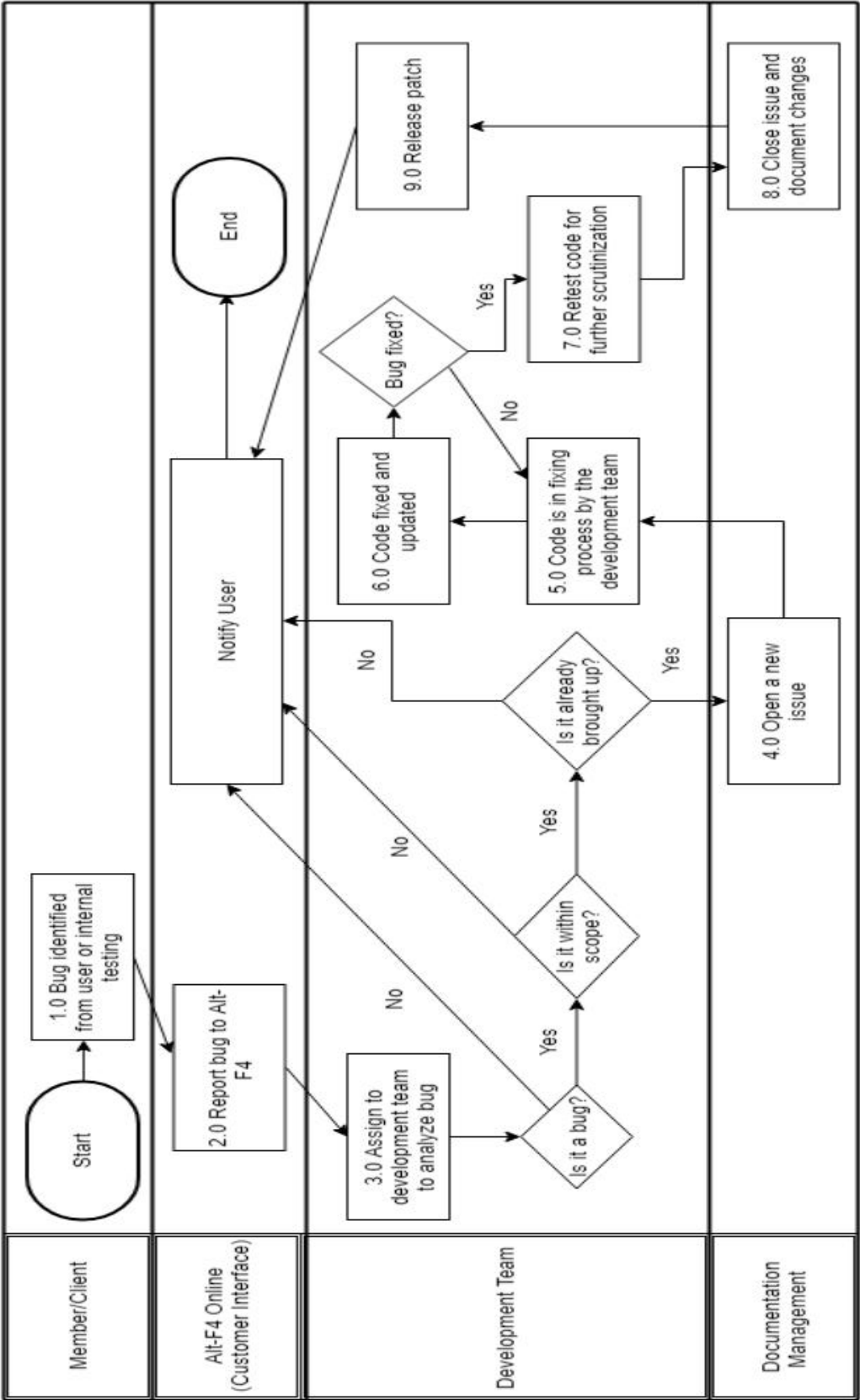
Chai Yee Ting
Project Manager

	Bug Reporting and Fixing
Standard Operational Procedure for Bug Reporting and Fixing	

Temporary Term Used

1. Member / Client - Person who use the service of the mobile application
2. Alt - F4 Online (Customer Interface) - Person who interact with the client of the mobile application continuously
3. Development Team - A group of people who develop the mobile application by utilize mobile phone software and source code
4. Documentation Management - Alt-F4 employees who are in charged of the documentation of the related mobile application problems
5. Bug - An error that occur in mobile application during operation of client

Bug Reporting and Fixing			
Doc. No : AF4 -BRNF-001	Version: 1.0	Revision: 0.0	Effective date: 16/02/2019

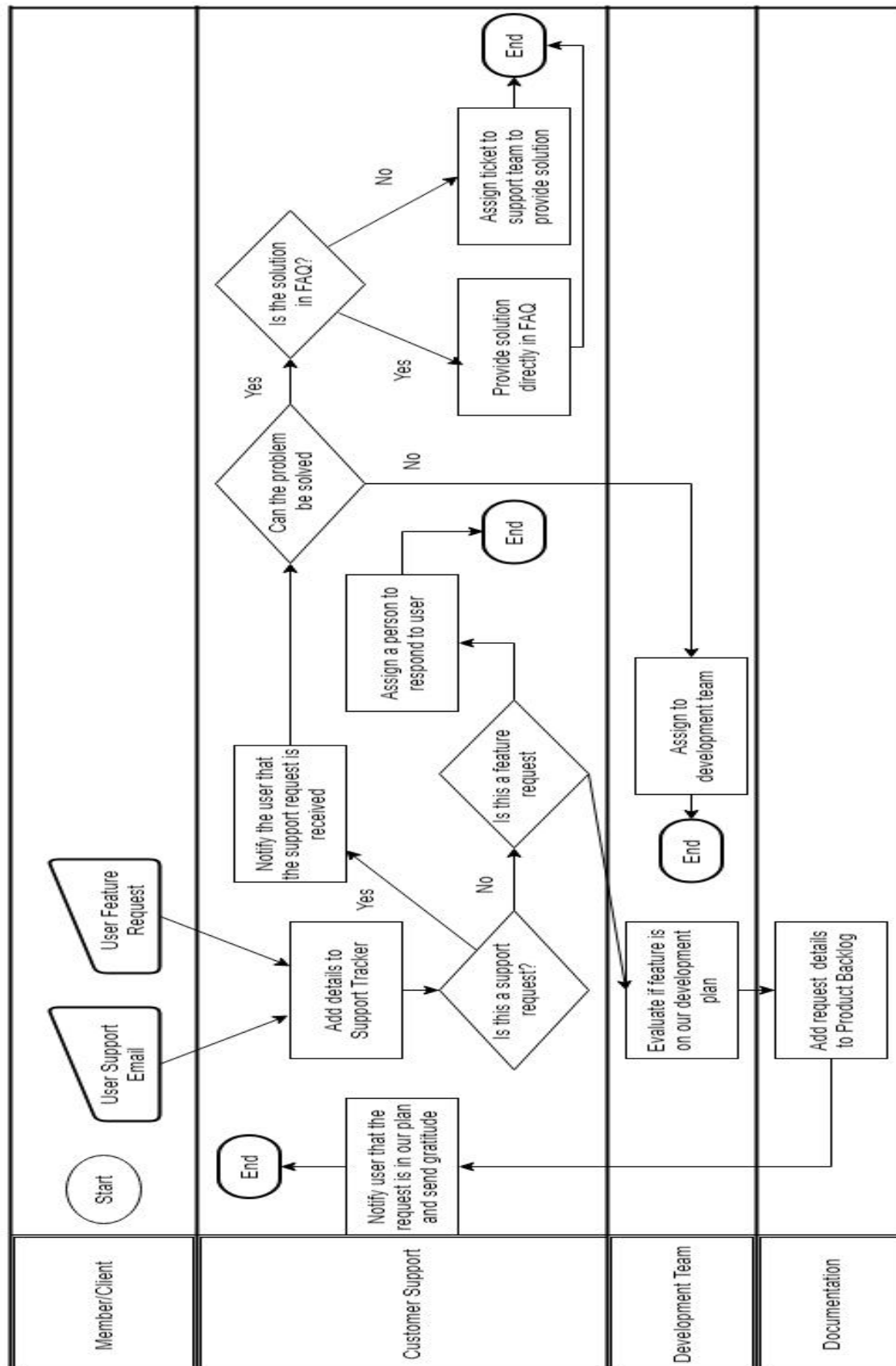


	Customer Support and Features Request
Standard Operational Procedure for Customer Support and Features Request	

Temporary Term Used

- 1.Member / Client - Person who use the service of the mobile application
- 2.Customer Support - Person who interact with the client of the mobile application continuously and provide support continuously.
- 3.Development Team - A group of people who develop the mobile application by utilize mobile phone software and solve problems related to mobile application
- 4.Documentation Management - Alt-F4 employees who are in charged of the documentation of the related mobile application problems
- 5.Support Tracker - Help Desk team which provides support to the customer and walk through the problem with the customer
6. Product Backlog - An accumulation of the uncompleted work regarding the product (mobile application)

Customer Support and Features Request			
Doc. No : AF4 -CSFR-001	Version: 1.0	Revision: 0.0	Effective date: 16/02/2019



DESIGN DOCUMENTATION

Instant MMLS Notifications

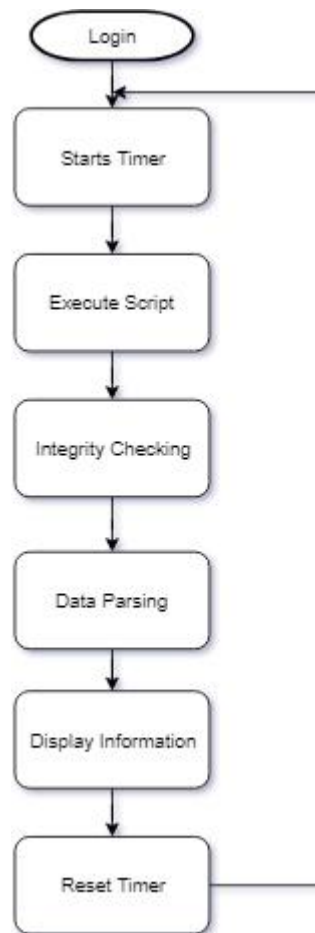


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Project Name : Instant MMLS Notifications

Program Flow Chart

Design Documentation for Program Flow Chart

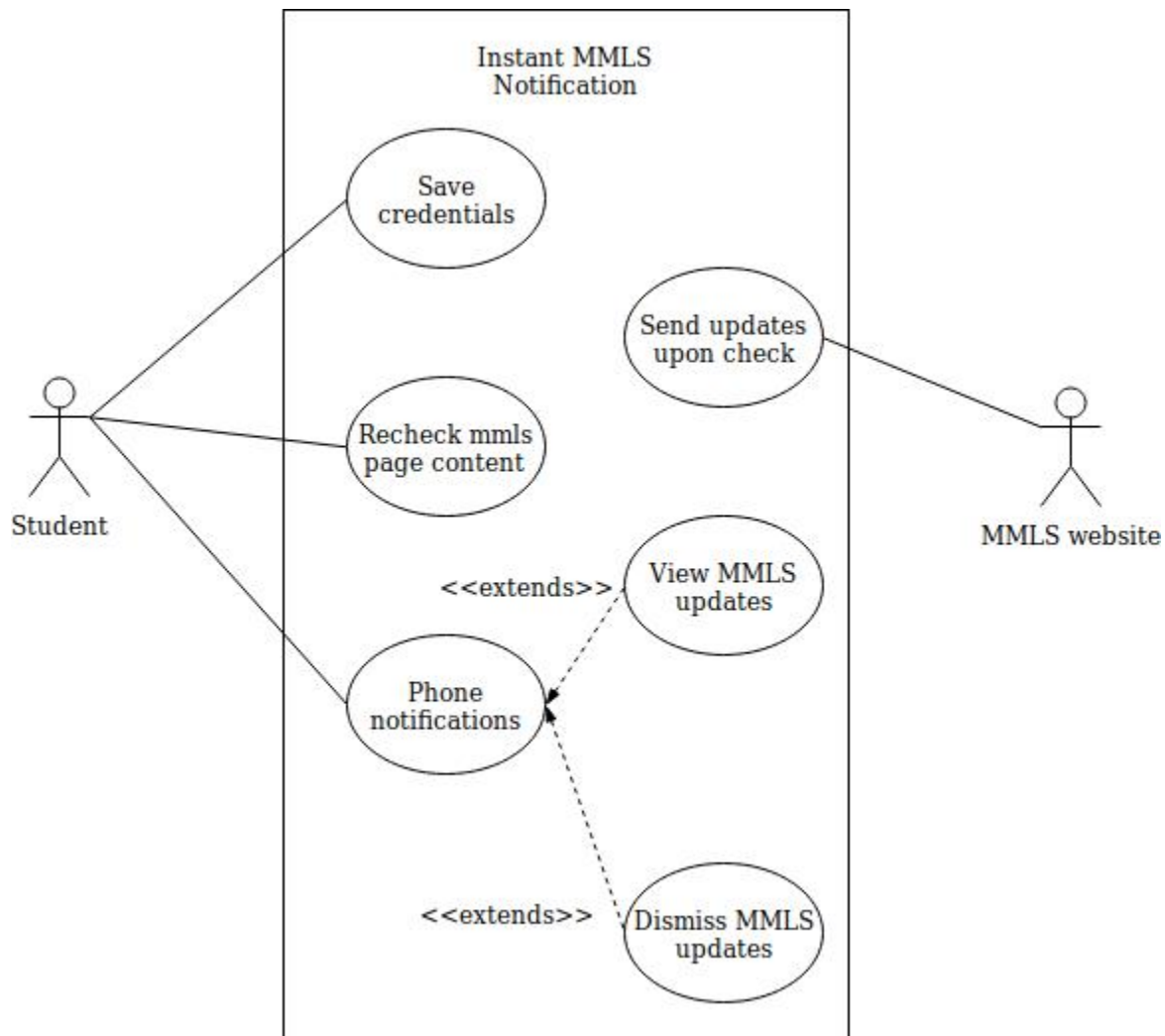




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Project Name : Instant MMLS Notifications

	Mobile Application Use Case
Design Documentation for Mobile Application Use Case	



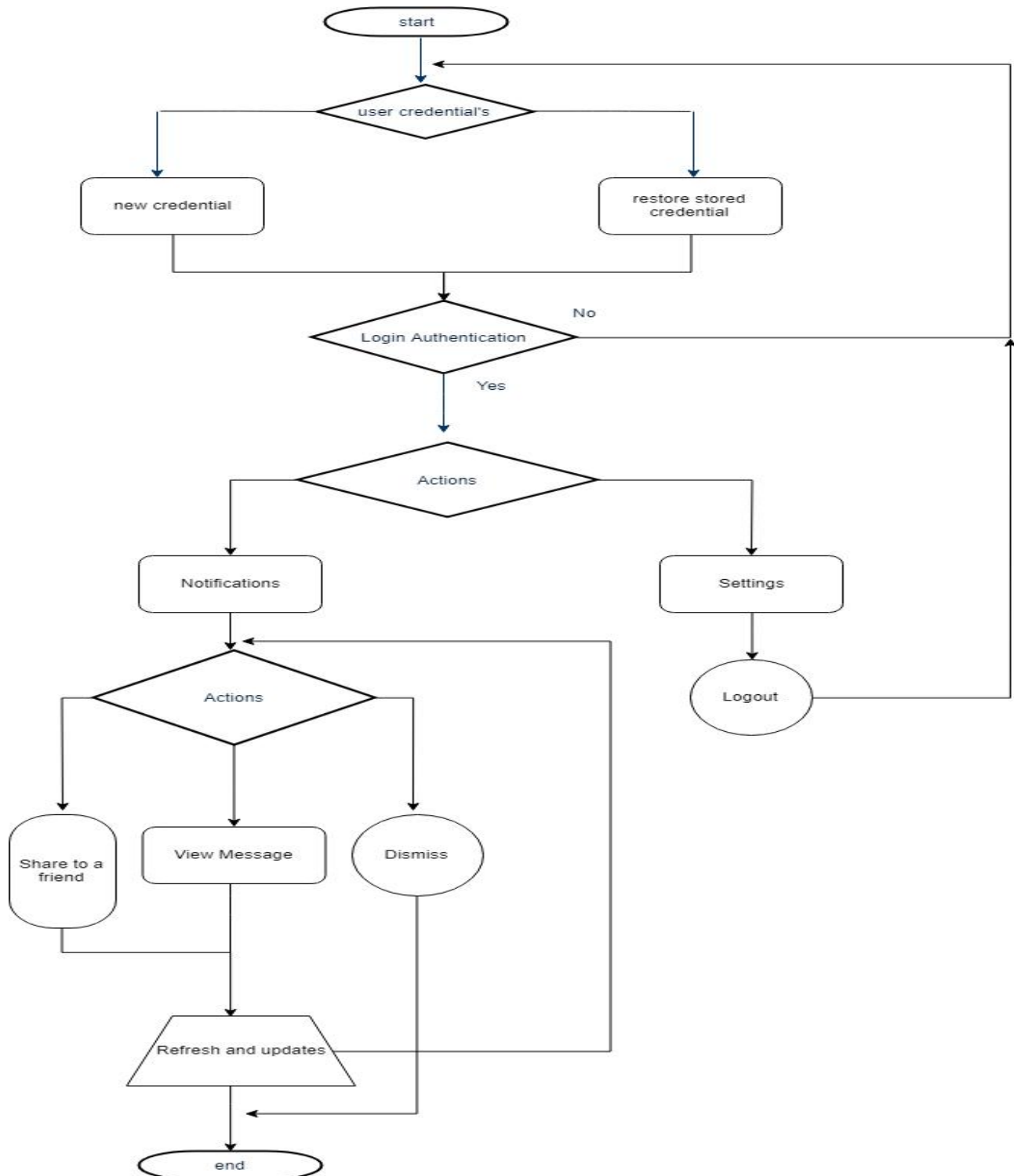


ALT F4 Software Solutions Co Ltd

Project Name : Instant MMLS Notifications

Mobile Application User Flow Chart

Design Documentation for Mobile Application User Flow Chart



SOFTWARE REQUIREMENT DOCUMENT

Instant MMLS Notifications

Software Requirements Specification

1.0 Overview

Multimedia Learning System (MMLS) is Multimedia University's (MMU) online learning portal, functioning as an online bulletin board for students to view course notes, assignments and announcements. Posting of updates on MMLS are a common practice among lecturers, as it is common for students to monitor MMLS for updates. Although MMLS is a convenient way to access course materials and view updates, the lack of notification system means that users have to periodically monitor MMLS for new content and updates.

Notifications provide convenience to users by providing real time updates when something new is released. The MMLS main page, where all the announcements can be viewed, retains all the updates made, even though they may no longer be useful. The average student has 4 classes in a trimester, and with multiple announcements in a week, there exists a possibility to miss an announcement as weeks go by and the main page becomes cluttered.

The proposed systems main function is to push notifications to the user when there is a new announcement or new content available. As such, students are able to remain up to date on new postings and updates on MMLS.

2.0 User Requirements

MMU students are the main target users for the system. The users will be able to receive notifications when there is a new announcement or new content available: lecture notes, tutorials, assignments. The user will select the update frequency, a period between 5 to 30 minutes, in which the application will scan MMLS for updates. The notification has two options, one to dismiss and another to view the message. If the user chooses to view the message, the user's default browser will be used to display the message on MMLS. Additionally, the user will be able to 'share' the notifications on social media platforms such as WhatsApp to notify other students.

Due to limited connectivity concerns, whereby the user does not have a data plan, the application has an 'offline' mode which allows users to view previously received updates without internet connection. In offline mode, the user will be able to search and sort through the update history and 'star' important posts for future reference. Most students may need to recheck a single post multiple times and this functionality serves to handle that demand without navigating through MMLS.

3.0 Functional Requirements

Functional requirements are the functionalities that must be applied to the system. The requirements for the application are:

1. The application is able to access MMLS and detect when there is new data.
2. The application allows users to set the update frequency and will periodically check MMLS according to the users setting.
3. The application will immediately check MMLS for updates if the periodic check is not successful due to no internet connection.
4. The notification has three action buttons – one to dismiss, one to share and another to display the entire message in MMLS:
 - i. If the 'Dismiss' button is selected, the push notification will be removed from the user's lock screen.
 - ii. The share button must be able to copy and forward the contents of the notification and the MMLS link for the specific subject announcement onto WhatsApp.
 - iii. Selecting the 'View Message' button will result in the notification being removed from the user's lock screen followed by the display of the message within MMLS on the user's default browser.
5. The application is able store announcements and updates locally.
6. The user shall be able to search through the locally stored announcements and updates.
7. The user shall be able to sort the locally stored announcements by subject, week and content type (announcements or content).
8. The user shall be able to select and 'star' selected updates which will be pinned on top of the message board.
9. The user shall be able to delete locally stored announcements.

4.0 Technical Requirements

1. The application only runs on Android.
2. The application should run in the background.
3. The application should be able to access MMLS using a script.
4. The application for users should utilize minimum amount of resources – CPU, memory and battery

5.0 Design Constraints

The mobile application will run on the android platform and the development is based on Java. Therefore, it has to rely on Android APIs, SDKs, plugin and development tools. As the application data is generally text-based which uses minimal storage, the application storage is designed to be local.

For the first release of the application, a limited number of features will be implemented. Further modification and expansion will be done in later releases.

CONTENT OF THE PROJECT MANAGEMENT SOFTWARE

The project management software for Instant MMLS Notification is Github. The link to access the repository is <https://github.com/ting96haha/ims>

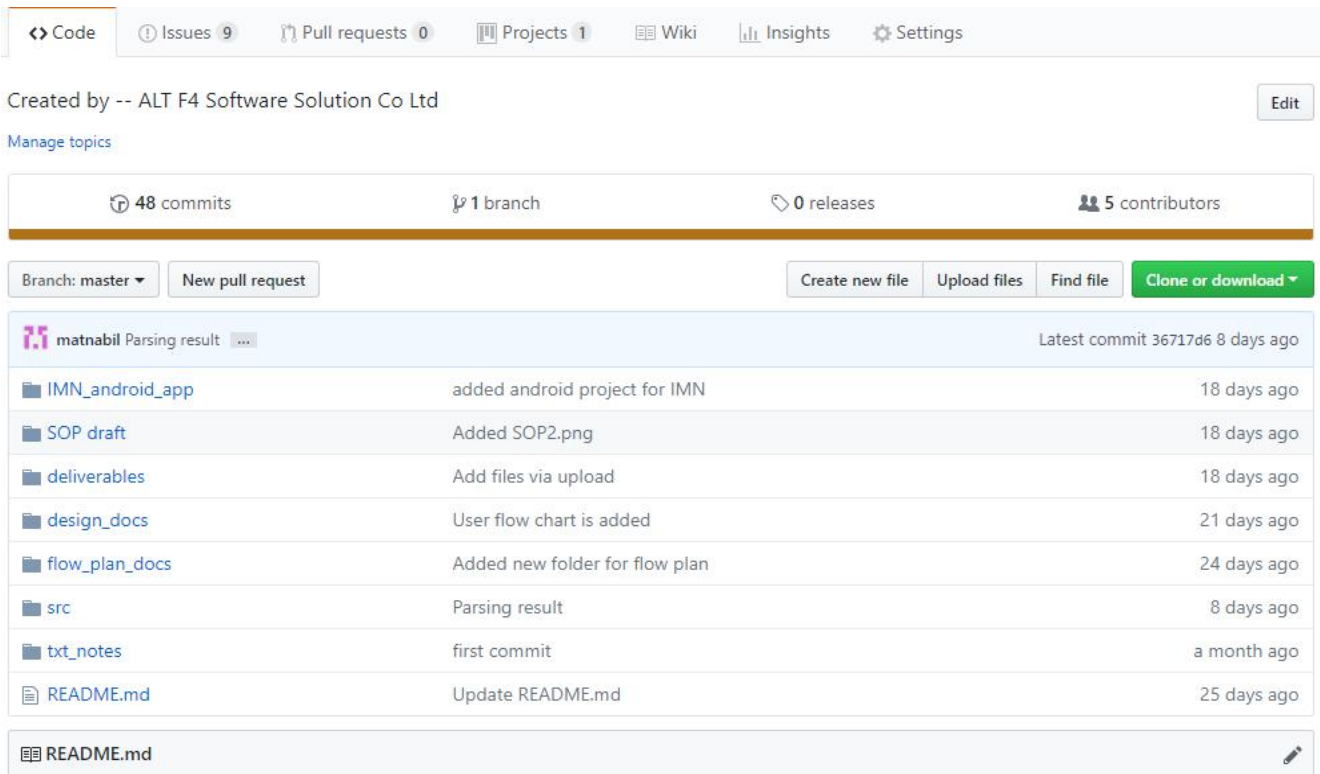


Figure 2.4: Code Section of the Repository

The developers can manage their mobile application source code by uploading files to Github under '<>Code' section as shown in Figure 2.4. This avoid conflict among different developer's code by notifying the developers if there are changes in source code. It also serves as a platform for all the team members to upload relevant documents related to projects.

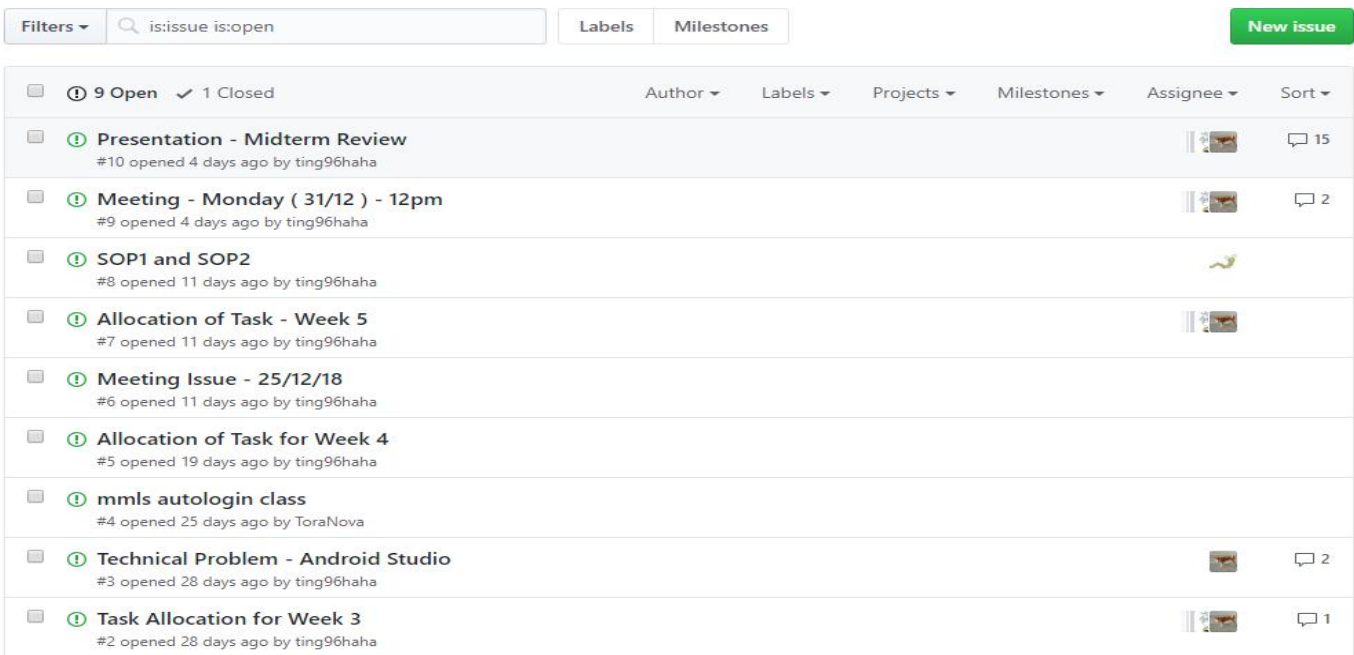


Figure 2.5: Issue Section of the Repository

Whenever there is a new issue related to the project, members can open up a new issue for discussion. It serves as the platform for the development team to seek help, have source code discussion among one another, as well as share new discovery of the proposed system. On the other hand, it can also be used by the project manager to announce the task allocation every week so that the other members are aware of their own responsibility.

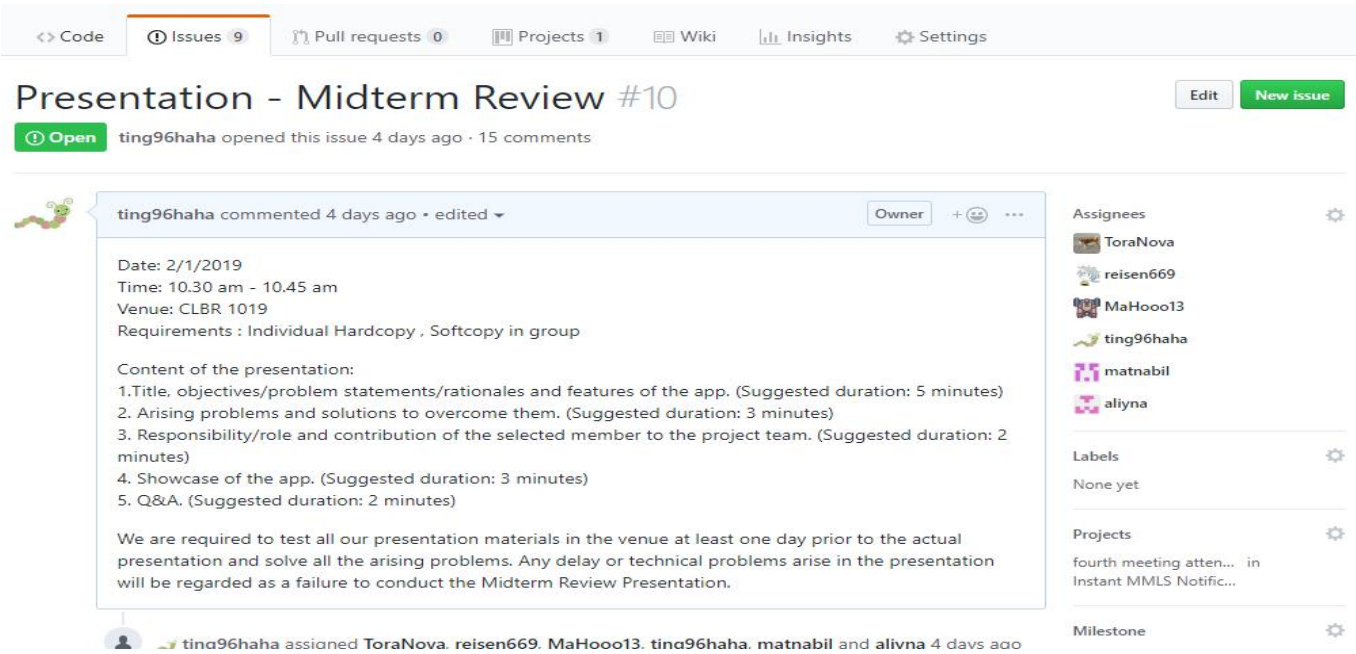


Figure 2.5: Individual Issue Details Section

Figure 2.5 will enable the issue creator to post details of the issue and members. The issue creator can assign the member to the dedicated issue. It also enable the issue creator to set milestone for the issue

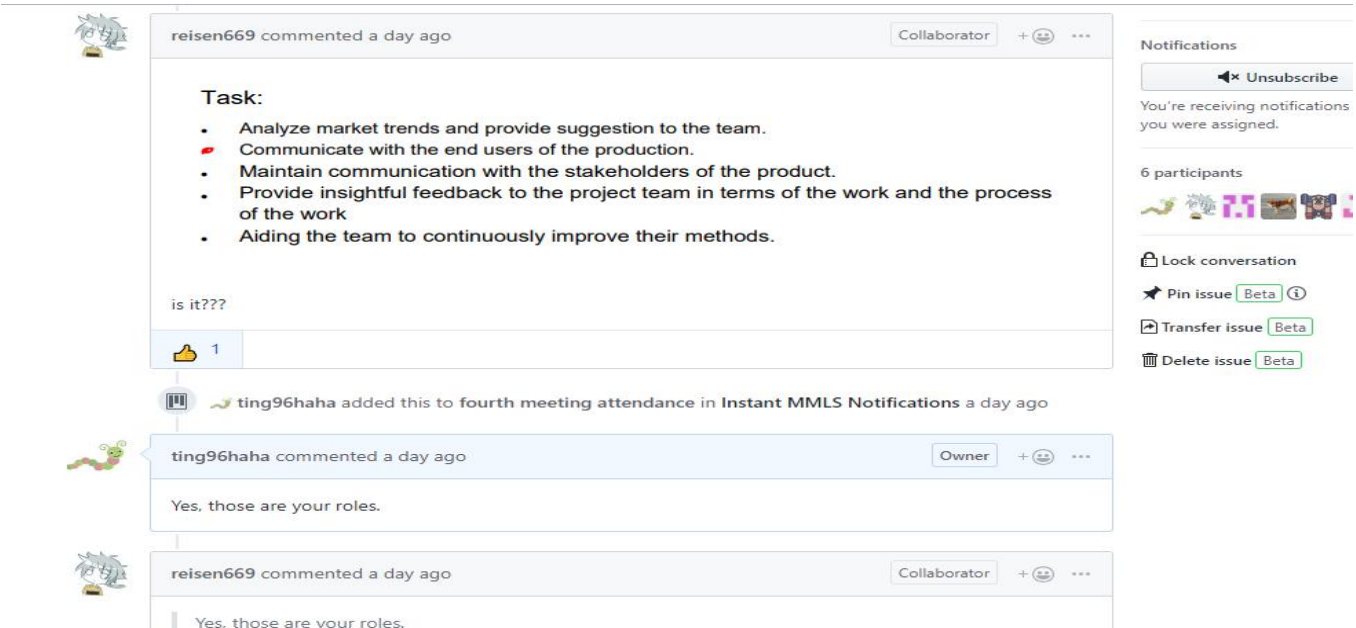


Figure 2.6: Comment under Issue Section

Figure 2.6 shows the comment section of the opened issue in Figure 2.5. The members can comment to have discussion on the arising matter.

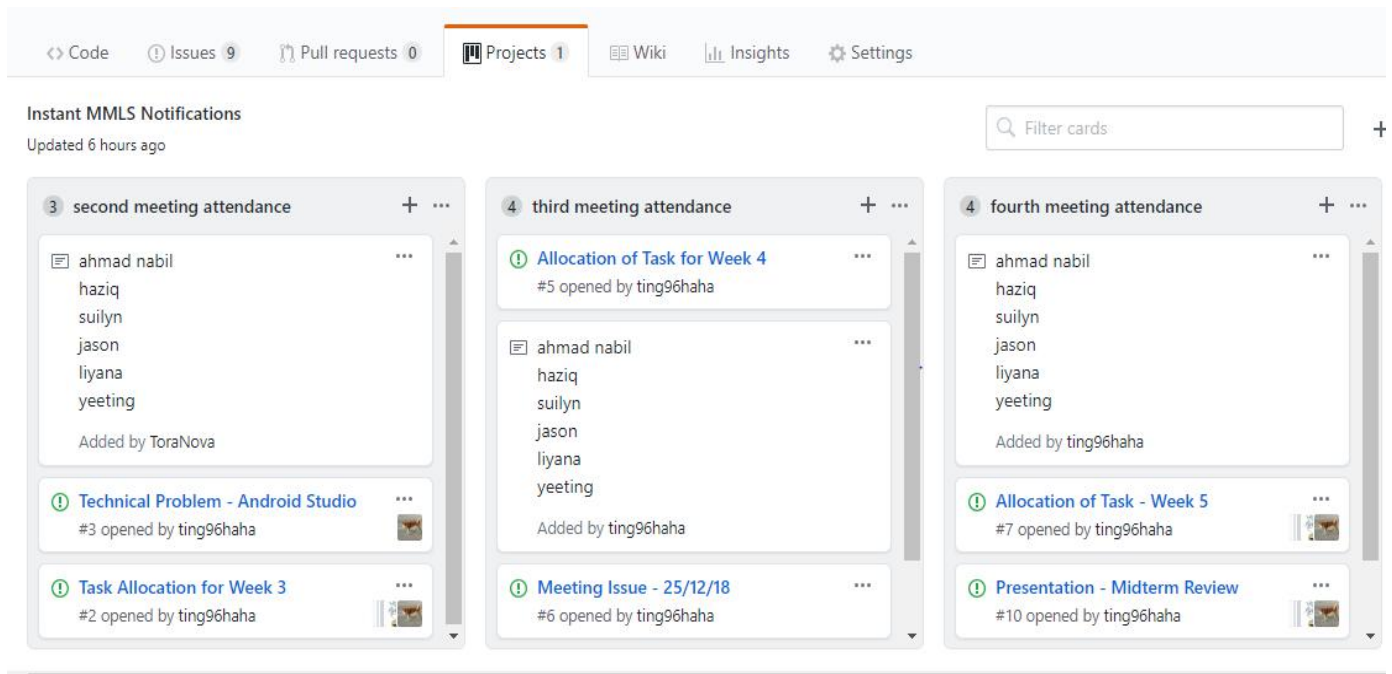
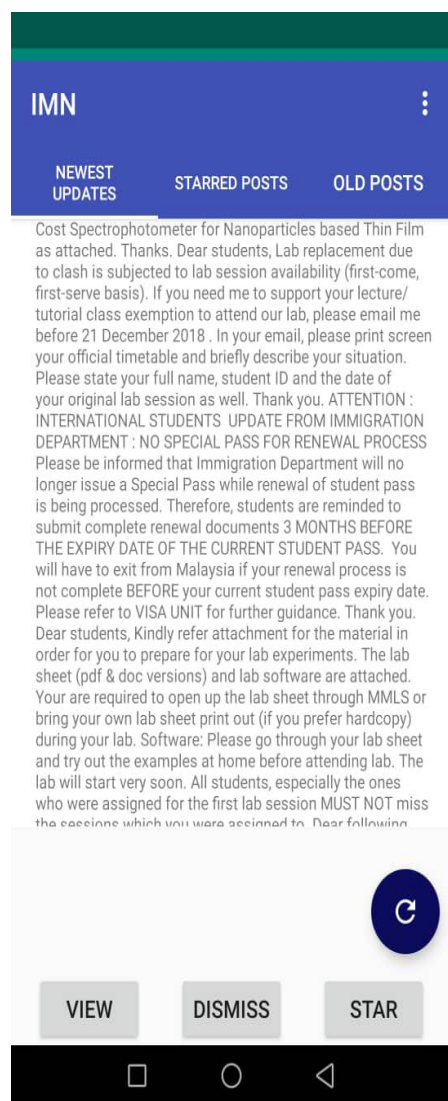


Figure 2.7: Project Section of Repository

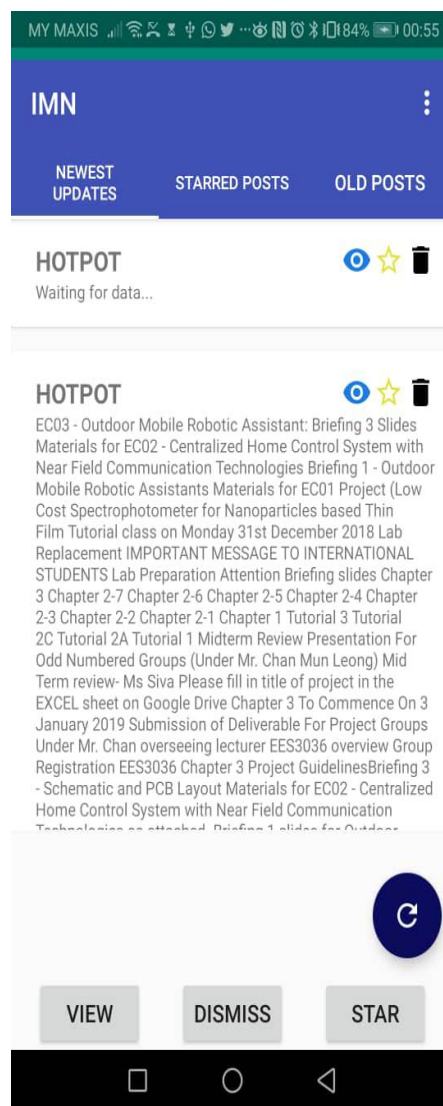
This section will provide an overall picture of the project and allow all the members to track the current progress. Issue cards and attendance cards can be added to the respective date column.

Appendix

Actual Pictures of Developed App



A1



A2

A1 & A2 : front page of the developed mobile application.