ANDROID APPS FOR DRIVER UTeM LOG

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This report is submitted in partial fulfillment of the requirement for the Bachelor of Computer Science (Computer Networking)

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

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BORANG PENGESAHAN STATUS TESIS

JUDUL: ANDROID APPS FOR DRIVER UTeM LOG

SESI PENGAJIAN: SEM 3 2015/2016

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DECLARATION

I hereby declare that this project report entitled

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ABSTRACT

This project will help the management of University Technical Malaysia Malacca (UTeM) to track their driver when they are on their job sending or fetch the staff from the place that has been assign. The android apps using the google geolocation which can convert the latitude and longitude of the location to the address based on google maps. The GPS to detect the location are based on the user smartphone GPS location service and with this the accurate data from the user location can be obtain.

The result from this project can help the management to track their driver when the driver using the android apps to check in or check out based on their assigned place and the location data will be automatically recorded to the database. The benefit of this project are the management can keep tracking their driver by make sure they are not hang around to the other place while they are on their job. The android apps also have a reminder that will remind the driver to check in or check out. The reminder will act to remind the driver to check in or check out if they have reaching the time limit that the management have assign for them to the location to send or fetch the staff.

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ABSTRAK

Projek ini akan membantu pihak pengurusan Universiti Teknikal Malaysia Melaka (UTeM) untuk mengesan pemandu mereka apabila pemandu tersebut sedang melaksanakan kerja mereka samaada menghantar atau mengambil kakitangan dari tempat yang telah ditetapkan . Aplikasi android ini menggunakan geolokasi google yang boleh menukarkan latitud dan longitud lokasi ke alamat berdasarkan peta google. GPS yang digunakan untuk mengesan lokasi adalah berdasarkan kepada GPS telefon pintar pengguna dan dengan cara ini data lokasi yang tepat akan dapat diterima.

Hasil daripada projek ini boleh membantu pihak pengurusan untuk mengesan pemandu mereka apabila pemandu menggunakan aplikasi android untuk mendaftar masuk atau daftar keluar berdasarkan tempat mereka ditugaskan dan data lokasi akan direkodkan secara automatik ke dalam pangkalan data. Manfaat daripada projek ini ialah pengurusan boleh akan dapat mengesan pemandu tersebut dengan memastikan supaya mereka tidak ke tempat yang tidak sepatutnya semasa menjalankan tugas. Aplikasi android juga mempunyai peringatan yang akan mengingatkan pemandu untuk mendaftar masuk atau mendaftar keluar. peringatan ini akan bertindak untuk mengingatkan pemandu supaya mendaftar masuk atau mendaftar keluar sekiranya mereka telah mencapai had masa yang telah ditetapkan oleh pihak pengurusan untuk ke lokasi menghantar atau mengambil kakitangan.

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CHAPTER I

INTRODUCTION

1.1 Introduction

In this globalisation modern era, all the technology have grown rapidly faster and what all its need is only an internet connection. Many people nowadays have android smartphone and with this they can do many things include make their job easier. The driver log android apps is one of the apps that can make the job for the human easier because user need only to check in at the place that has been arrive and check out if they are back to Utem to make the management team can keep track and check whether the driver didn't go to the other place while doing their job. With this apps , the usage of the paper will be reduce because the driver didn't have to write each time they arrive and back when doing their delivery or pickup job. The place to store all the data is in the database which can be easily for the management to doing their regular checking about the driver.

The apps also use the location service that has been provide into their android device and also every driver will be given a mobile data because the apps will not working if their android device is not turned on both the service. Mobile data is for the driver to

login their staff id and also for them to make a check in and check out while location service is act as a gps that can be used to track their location precisely so that they cannot make a fake check in to the apps. So, in order to make management know about their trip the apps is developed.

1.2 Problem Statement

Table 1.1: Problem Statement

PS	Problem Statement
1	Driver can go where they pleased while doing their work because the management does not know them reach the destination within a predetermined time or not.

1.3 Project Question

Table 1.2: Project Question

PQ	Project Question
PQ1	What is the purpose of making the android apps?
PQ2	How the apps help the management?

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1.4 Project Objective

Table 1.3: Project Objective

PQ	PO	Project Objectives
PQ1	PO1	To develop android apps that can make the driver to check in and check out when they are on their job to send or fetch staff from the place that has been assign and get the notification/reminder.

PQ2	PO2	To keep the managements the whereabouts of their drivers whether the staff have safely arrived and on time.

1.5 Project Scope

Scope of this project:

I. Apps that can track and record the driver log.

II. Apps that only works if have internet connection and location service by the android smartphone.

1.6 Expected Output

The mobile apps that can help the management by keeping the driver log as a record so that the management can know the driver activity more details.

1.7 Project Contribution

The drivers nowadays can manipulated the data by writing the false record to the form but with this mobile apps that can save all their data to the database with the current time based on their android phone. This will help the management to know whether the driver is making their job or they go to the other place.

1.8 Report Organization

Chapter 1: Introduction

This chapter 1 will explain about the introduction of the project and also focusing on problem statement and the objective that will be achieve in this project. The

project background, scope and other explanation about this project also in this chapter.

Chapter 2: Literature Review

This chapter will be discuss about the detail of this project and also include the current problem. The related and previous project about the location based service and GPS system are also discuss in this chapter.

Chapter 3: Methodology

This chapter will be explaining in detail about the method that will be choose and used in this project which is the waterfall method. The milestone also will be include in this chapter.

Chapter 4: Analysis And Design

This chapter will be explaining and discussing about the design of the mobile apps and also software and hardware that will be used in this project.

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Chapter 5: Implementation

This chapter will be explain about all the activity that involve in the developing the mobile apps and also the testing to make the apps to work will be done in this chapter.

Chapter 6: Testing

This chapter will include all the testing progress that have been done in this project.

Chapter 7: Project Conclusion

This chapter will be the final chapter and all the summary and conclusion of the project will be made in this chapter. The improvement that can be made for this project in the future also be explain in this chapter.

1.9. Conclusion

As for the conclusion for this chapter, the mobile apps that will be developed to overcome the current which is making the management to keep track of the driver more detail. The next chapter will be discuss about literature review which is about the other article that related to this project.

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CHAPTER II

LITERATURE REVIEW

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2.1 Introduction

This chapter will explained more about of the some existing mobile tracking system that has been used in the past such as provide the accuracy of the location service and also the vehicle positioning system. This chapter also will covered the detailed of the mobile positioning principles and also related published information based on this project.

2.2 Related Work/Previous Work

Based on the Kushwaha, A. And Kushwaha, V. (2011) in his project "Location Based Services using Android mobile Operating System, International Journal of

Advances in Engineering & Technology, 1(1), 1–15" state that all positioning component is often needed in a location based service (LBS) to detecting the user's location mobile device. LBS also doesn't need a manual input from the user for the location such as street name or town name but the location can be automatically get by using the technology such as satellite and cellular network positioning. The server that is provide by the service provider such as servers to calculate positions and search specific information about the user position.

Figure 2.1: Location Based Service and Service Process

Singhal, M. And Shukla, A. (2012) in their project "Implementation of Location based Services in Android using GPS and Web Services in *International Journal of Computer Science Issues*, *9*(1), 237–242 state that many mobile device nowadays suited for A-GPS to get the service from the GPRS and to make the current location to be detect by the service provider network accurately. In order for the phone to use the GPRS or other internet connection the A-GPS must be enable because with that only the assistance server can build a contact for A-GPS. To improve the GPS quality device locating ability, the A-GPS must be integrated into mobiles and also A-GPS can reduce the usage of the memory. With this the mobile device will be simpler and

can make the battery to last longer. The GPS and A-GPS privacy are public so that the assistance server will always know the device location.

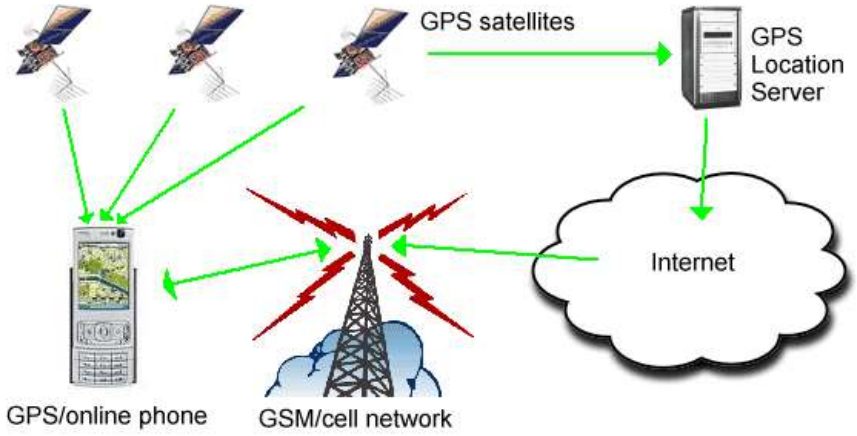

Figure 1.2: Architecture of A-GPS system

Vanjire, S., Kanchan, U., Shitole, G. And Patil, P. (2014) in their project "Location Based Services on Smart Phone through the Android Application in *Provider*, *3*(1), 4982–4987" state that the use of Location Based Service in android app is firstly based on place or area to make the profile change. The profile of user mobile device will automatically change to silent mode and also vice versa from normal mode and this is because the user will have to register the particular location for to which location that has been wanted because sometime the user will forget and this app will help them to automatically change the profile. Secondly, person locating tracking by family members (SMS) because this app will help the family member to locate their other family member like the Google cloud will sent the location through SMS service. Finally act as a notification to the nearest friend reminder because the user will get a reminder when his/her friend is nearby so that they can meet him/her.

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Policies, R. (2015). From social media service to advertising network, (March), 1-7 state that all smart device that want to detect the current location of the user that have WIFI or GPS must have many sensors in it because the operating system in the smart device will make the users to make decision whether they want to share or not their data location. Facebook location data sharing will make the users to have a choice with no return back because when the Facebook mobile app get the authorized to access the location, there is no setting that will make the person to authorize the location data that has been share. If the Facebook access to the location data has been turn off by the user, this will not prevent the Facebook to collecting location data because all the picture that has been taken by the smartphone often always containing the location information as metadata and this can make the location data to be shared not on purpose when the picture is uploading into the Facebook.

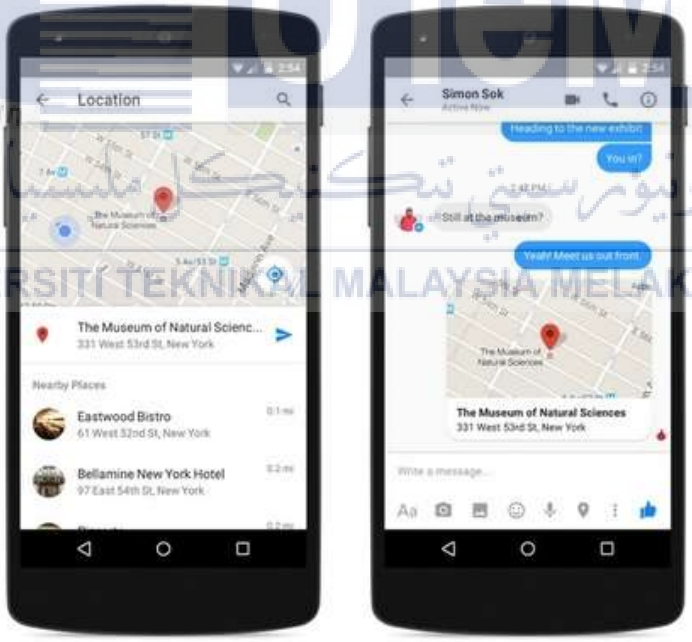

Figure 2.2: Location Data Service Facebook

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Kadibagil, M. (2014) in his "Position Detection and Tracking System in *IRACST -International Journal of Computer Science and Information Technology & Security (IJCSITS)*, *4*(3), 67–73" state that the importance of tracking and detecting position of people are to give a notification to friends if some serious issue happened and also to convey an important message. The propose system for the android mobile user using the JAVA programming language and for the database using MySQL to store the data. To make the communication between the web server and android device is secure by using the symmetric cryptography. Finally, the notification module that will be used to send the notification will be in the form of popup which bring the location information with the sound, light and vibrate. The user also can track their own position by using the self-tracker in the GPS module and this self-tracker is very effective in detecting the current user position.

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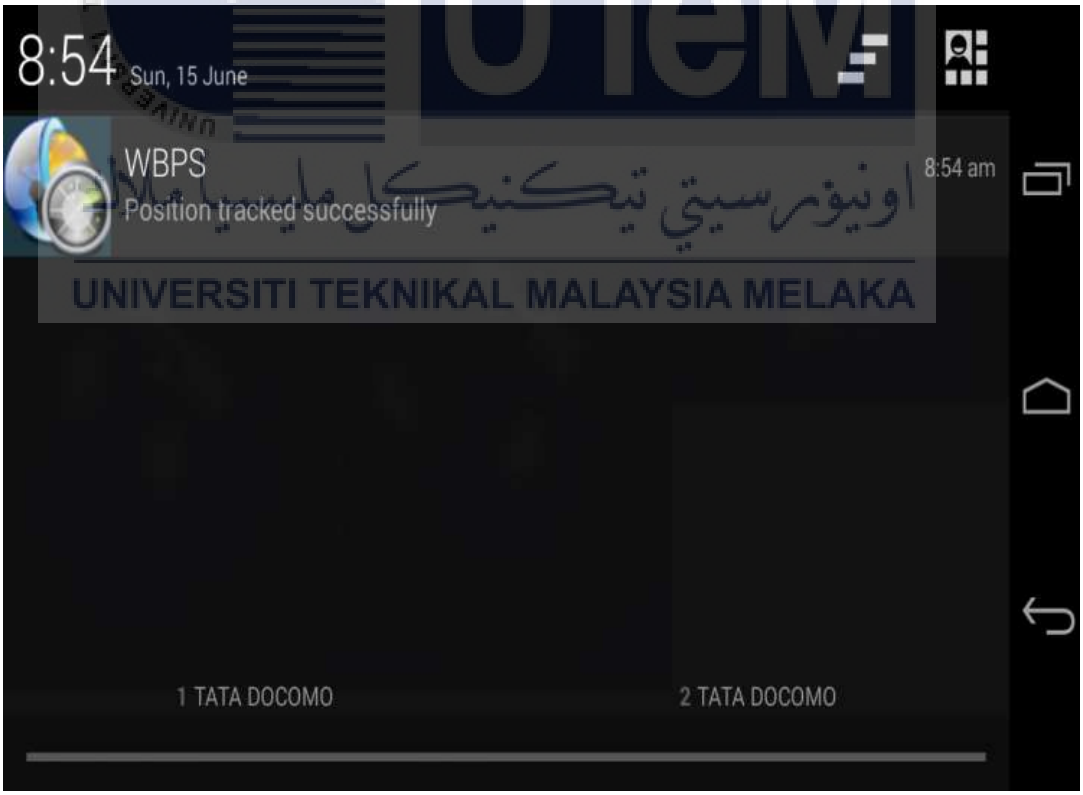

Figure 2.3: Self Tracker to track user own position

2.3 Critical Review Of Current Problem And Justification

Table 2.1: Critical Review of Current Problem and Justification

Research Title/Product	Author/Company	Purpose	Description
'Location Based Services using Android mobile Operating System.pdf. in International Journal of Advances in Engineering And Technology, 1(1), 1–15'	Kushwaha, A. And Kushwaha, V. (2011)	The needed of Location Base Service (LBS) in the positioning component to detecting user location mobile device.	Main of this project is to tell how the Location Base Service is needed in the positioning component.
'Implementation of Location based Services in Android using GPS and Web Services in *International Journal of Computer Science Issues*, *9*(1), 237–242.'	Singhal, M. And Shukla, A. (2012)	To detect the current location from GPRS and service provider by using the A-GPS.	This project is to detect the location accurately using the GPRS with the assistance of the A-GPS.
'Location Based Services on Smart Phone through the Android Application	Vanjire, S., Kanchan, U.,	Location Based Service (LBS)	Android apps using the Location Based Service (LBS) to get the

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in *Provider*, *3*(1), 4982–4987’	Shitole, G., And Patil, P. (2014)	used in android apps.	location data accurately.
From social media service to advertising network,(March),1-7	Policies, R. (2015)	The sensors that contain in the smart device to detect the current location of the device.	This project is to determine whether all the smart device has a sensors to determine the location.
Position Detection and Tracking System in *IRACST - International Journal of Computer Science and Information Technology And Security (IJCSITS)*, *4*(3), 67–73’	Kadibagil, M. (2014)	The important for people of tracking and detecting the position.	This project is to check the important of detecting and tracking the position to the people whether it give a positive or negative impact to them.

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2.4 Proposed Solution/Further Research

Based on Rasool, R., Sabarinathan, K., Suresh, M., & H, S. S. (2014) in their project "24 hours GPS Tracking in Android Operating System, *4*(3), 1–5." With the purpose of this project is the location that has been tracking and also detecting accurately will be stored in the SQLite database which is similar to my project. The difference of this project with my project in my project is the user will have to login their staff ID that has been stored in the database before they can used the apps.

2.5 Conclusion

As conclusion, by doing the literature review, I was able to make the summary of the current knowledge with the past knowledge so that I can make more investigation and also to identifying the advantages and also the disadvantages of the previous work. Finally, it also help me to make me decide of what I want to apply for completing my project and to make a critical analysis about it.

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CHAPTER III

METHODOLOGY

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3.1 Introduction

This chapter will explain about the methodology method that will be choose in the project development. The methodology will explain all the phase that involve to make sure the project will run smoothly according to what that has been planned and detect if problem occur. The project milestone and Gantt chart also will be shown in this chapter to make sure this project have a well planning of time.

3.2 Methodology

The methodology that will be used in this project is Waterfall Model because the progress will be seen as flowing steadily downward (like a waterfall) through the phases

of Planning, Requirement, Design, Implementation, Testing, Maintenance and finally Documentation. Waterfall development model originates in the construction and manufacturing industries such as highly structured the physical environments in which after the fact that changes are prohibitively costly. This hardware-oriented model was simply adapted for software development because there was no formal software development software that existed at the time.

Planning

In this phase, problem with android, database, GPS location service are listed. The plan of what tools that are need in this project also listed to make the project. In order to develop the android application need to be list in term of hardware and also software. The most important is make sure everything is well planned before starting the project.

Requirement

In this phase, all the information about android, database and also GPS location service are obtained also the hardware and software that will be needed in this project. This phase constitute of everything that already been planned are achieve so that can be move to the next stage of the project.

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Design

This stage will explained about this project that will be built from start to end. This phase also will have to make sure the design that has been made is approve and the design is well made before move to the next stage. The flowchart, Gantt chart and simple circuit with milestone are designed in this stage. Everything will be work accordingly based on the flowchart that has been made.

Implementation

This stage is similar to the developed stage because at this stage, the software to build the android apps and also all plugin that will be needed and the database that will be used in this project are installed and developed. Based from the design that are planned, all the setup has be made. Most important are to make sure the implementation stage are followed the time given from the milestone and not exceed the time.

Testing

This phase, the early of android application which is staff login will be tested which the database is connected through the android can be use or not without any problem. The server also should already can be use the ip address and not the local host to make it is can be used in the other network.

Maintenance

The maintenance phase is to make sure that the application is always working to test and also the application can be used without any problem. Also make sure the login page of the staff can use the new data from the database that has been updated. The checking from time to time is needed because to make a detection about the error and malfunction for this android application.

Documentation

All the steps that have been involved in this project will be record in this phase and also will be documented in the report. With this, everything will be easy to refer if a problem is occur and also it will be documented. Finally keep track of what have been done and what is still not done.

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3.3 Project Milestones

Flowchart is a formalized diagram representation of an algorithm, workflow, and manufacturing process, showing the steps as boxes of various kinds, and finally connecting them with arrow showing to the bottom. This diagrammatic represent illustrates of a solution model to a given problem. Flowchart also used in analyzing, designing, documenting or managing a process in a various fields.

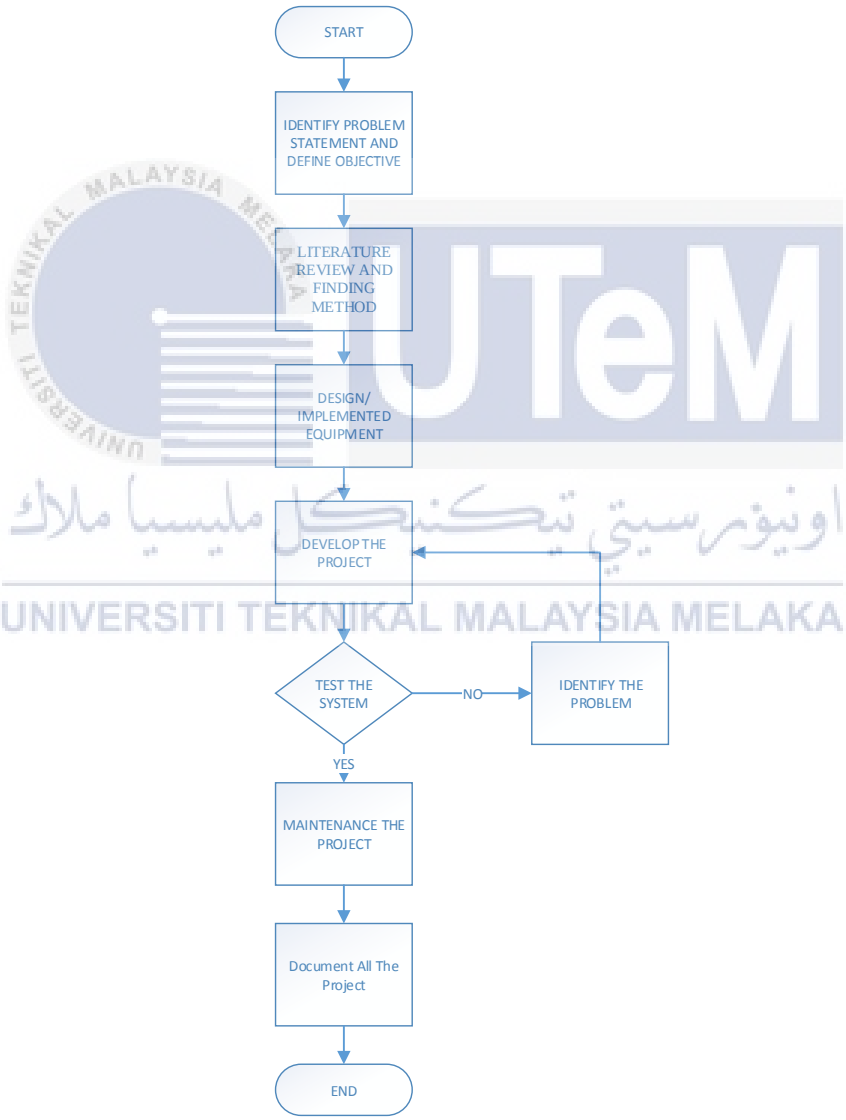

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Figure 3.1: Flow Chart

A Gantt chart is a type of bar chart that illustrates a project schedule. Gantt chart also illustrate the start and finish dates of the terminal elements and also summary elements of a project. Terminal elements and summary elements comprises the work breakdown structure of the project. The modern Gantt chart also show the dependency relationship between activities and also it can be used to show the current schedule status using percent-complete shadings. This chart also used in information technology to represent data that has been collected.

Gantt chart for this android application is as follow:

Table 3.1: Gantt chart

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Identify Problem and Define Objective															
Study And Research															
Design The Project															
Develop The Project															
Testing															
Maintenance The Project															
Document All The Project															

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Below is the milestones that has been made for this android application:

Table 3.2: Milestones

	Duration	Start	Finish
Identify Problem and Define Objective	2 weeks	22 February 2016	4 March 2016
Study And Research	2 weeks	7 March 2016	18 March 2016
Design The Project	3 weeks	21 March 2016	8 April 2016
Develop The Project	4 weeks	11 April 2016	6 May 2016
Testing	2 weeks	16 May 2016	27 May 2016
Maintenance The Project	1 week	30 May 2016	3 June 2016
Document All The Project	15 weeks	22 February 2016	10 June 2016

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Based on the Waterfall Model, the figure below shown:

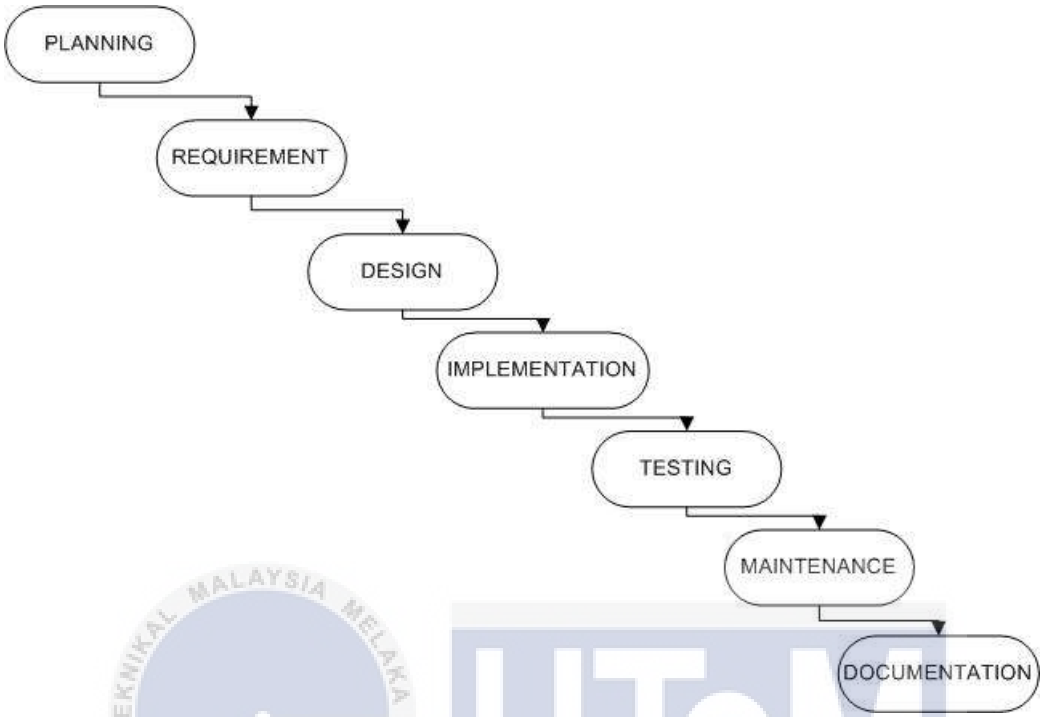

Figure 3.2: Methodology Waterfall

3.4 Conclusion

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From what we can conclude from this chapter is the most important that must be aware is methodology and milestone before develop an application. This is because it will make the application to be planning well and also need to be organizes so that it can be done by the time that already be assigned. The project also will running smoothly and efficient based on the following time. Waterfall model are choose as the methodology for this project and the milestone of the project is needed to be developed. The design chapter will be explaining in the next chapter.

CHAPTER IV

ANALYSIS AND DESIGN

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4.1 Introduction

This chapter will discuss about the project design and analysis. The data requirement will explain how the apps work meanwhile the functional requirement will show how the idea of the android apps function. The hardware and software that are required to develop the project also will be discuss and finally the sketch of the design for the interface of the android apps also will be cover. Finally the database design and flowchart of the project will be shown in this chapter.

4.2 Problem Analysis

The current driver log for UTeM driver is using the paper as a record when they are going to send the staff to the place that they have been assign and they might take the chance to alter the time and also the place that they have been in the paper.

4.3 Requirement Analysis

4.3.1 Data Requirement

Input of this mobile apps are user required to login at the main menu with their staff ID and password that has been assign by the management. The apps are based on the IP address or domain (from server like UTeM server) that has been synchronized with the database that already store all the information so that the driver can login to the apps. The database will check if the staff ID and password that has been insert are correct and if correct it will navigate to the main menu page.

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The output of this mobile apps are when the user at the main menu page, they can choose whether want to check in, check out or set the reminder. If the user choose to check in or check out, what they have to do are simply tap on the button and it will automated locating the user location based on their smartphone location service and finally recorded the data to the database with the time that also based on their smartphone device. The user can set the reminder to get the notification alert for remind them to check in or check out. If the user didn't check in or check out by the time that already been set, the popup will appear to ask them to check in or check out. The user finally can choose to logout from the apps after using it because as long as the apps didn't logout the apps will always keep on the main menu.

4.3.2 Functional Requirement

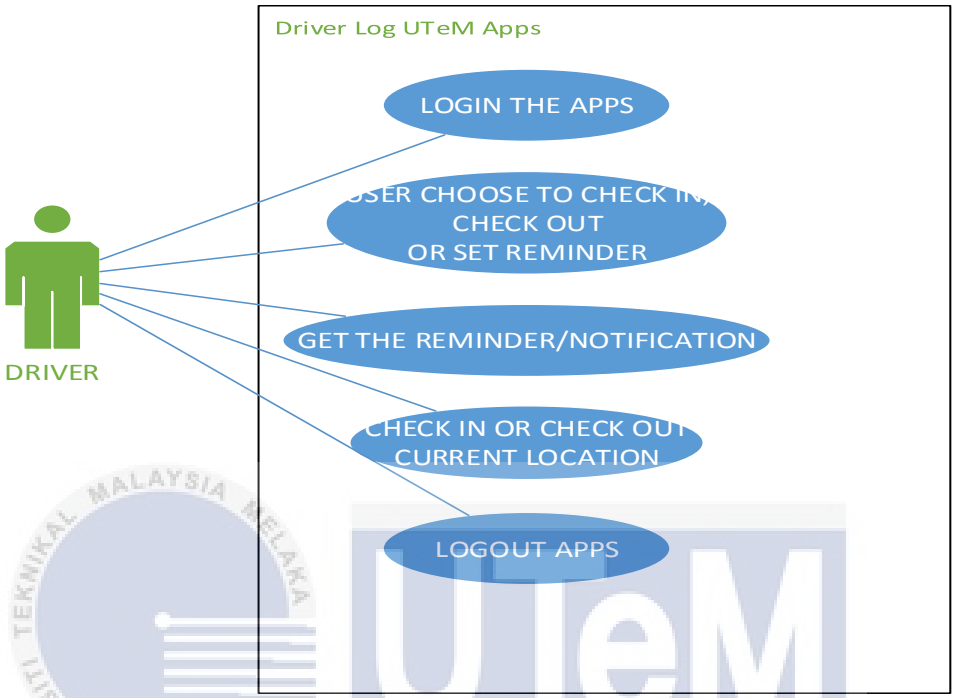

Figure 4.1: Use Case Diagram

In this project, the driver will login the apps with their staff id and password and after that they can choose action between want to check in or check out based on their location at the time or set the reminder. The driver will get the notification from the reminder that has been set which will order them to choose between want to check in or check out. Finally after finished using the apps the driver can choose whether want to logout or not.

4.3.3 Others requirement

This mobile apps need an active internet connection because it is connected to the database and also the smartphone of the user must enable their location service so that the

time they check in or check out the GPS can detect their current location and save to database.

4.3.3.1 Hardware Requirement

i. Android Smartphone

-The smartphone that are required to using this apps are only supported the android device.

-It only support the android version 4.4(kitkat) and above.

4.3.3.2 Software Requirement

i. Android Studio (https://developer.android.com/studio/index.html)

-Android Studio is a software tool that allows the user to building android apps on every type of android device. It also easier to use because it has intelligent code editor which can detect if an error occur and it is built on intelliJ which is capable of advanced code completion, refactoring and code analysis. The language that has been used by the Android Studio is Java language.

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-The version of the Android Studio that has been use in this project are Android Studio 1.5.1.

ii. XAMPP (https://www.apachefriends.org/index.html)

-XAMPP is a free platform web server that has been developed by the Apache and Friends which is consist of HTTP Server, MariaDB database and scripts which is using the PHP and Perl programming language. It also allows the user to create MySQL database and using the PHP MyAdmin so that the user can edit a database, run queries and finally import or export SQL data.

-The version of XAMPP use in this project are Version 3.2.2, the PHP Version 5.6.21 and the MySQL Version 5.0.11.

4.4 User Interface Design

I. Login Interface

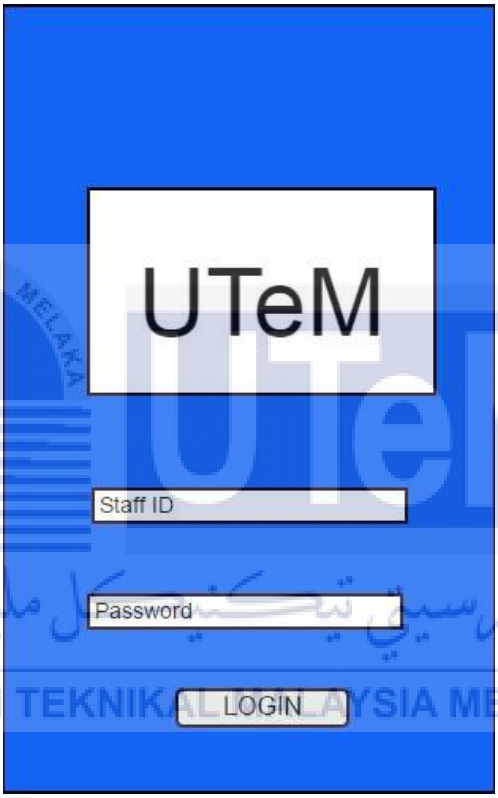

Figure 4.2: Login Interface

- This is the login interface for the UTeM Driver Log mobile apps.
- The design are simple and easy for the driver to know that they have to input their staff ID and password and finally they click the login button to enter the main menu.
- The color choose are blue and white because it symbolize the UTeM as the apps are for the UTeM driver.

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II. User Main Menu

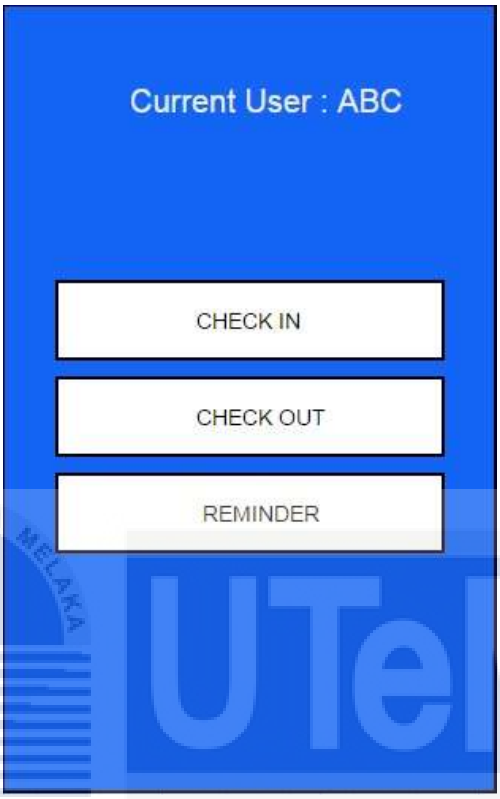

Figure 4.3: User Main Menu

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- This is the user main menu after they login and it also shows the current user that use the apps.
- This interface are clear to make the user to choose between want to check in, check out and also to set a reminder.
- All the user have to do are click the button on what they are want.

III. Check In Activity

Figure 4.4: Check In Activity

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- This is interface if the user choose to check in, the user will have to tap on the "Tap To Check In" button to get the location address based on their smartphone location.
- If the check in are success, the popup will appear say check in success to inform the user that their check in are successfully recorded.
- The interface are simple to make the user to know where the location detail will be appear and also to check whether their check in are success or failed to be recorded to the database.

IV. Check Out Activity

Figure 4.5: Check Out Activity

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- This is interface if the user choose to check out, the user will have to tap on the "Tap To Check Out" button to get the location address based on their smartphone location.
- If the check out are success, the popup will appear say check out success to inform the user that their check in are successfully recorded.
- The interface are simple so that the user will know where the detail of the location will be appear and also to easily make sure the user to know if their check out are successfully recorded or not to the database.

V. Set Reminder/Alarm

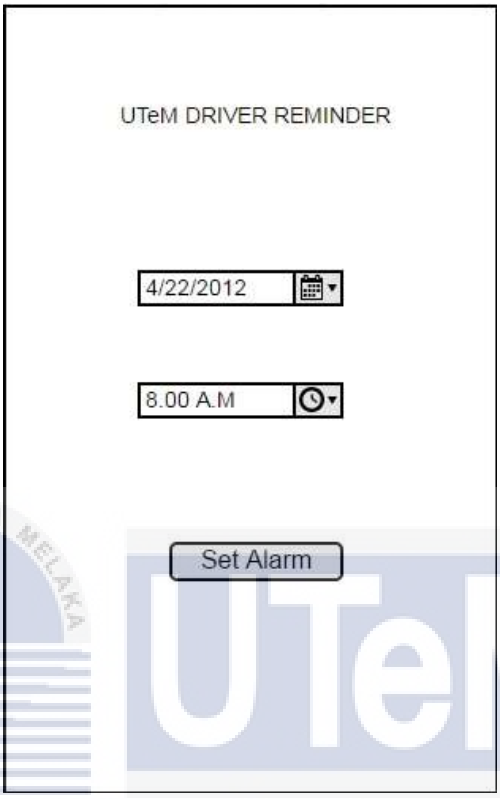

Figure 4.6: Set Reminder/Alarm

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- This is the interface to set the reminder/alarm.
- User will have to choose the date and time that they want to be notify.
- The design for this interface are easily to be understand by the user and also it is easier for them to setup the reminder.

VI. Logout Menu

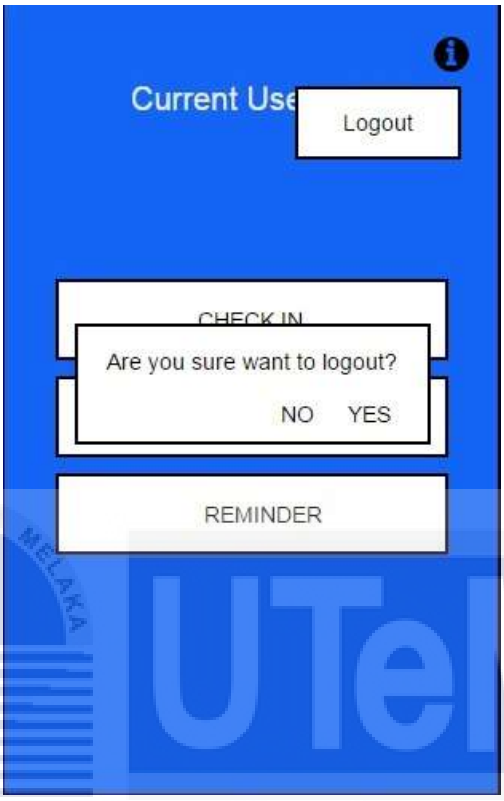

Figure 4.7: Logout Menu

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- This are the logout popup that will appear if the user click the icon right top of the screen and the confirmation box will appear asking if the user want to logout from the apps or not.

VII. Log Driver View From Database

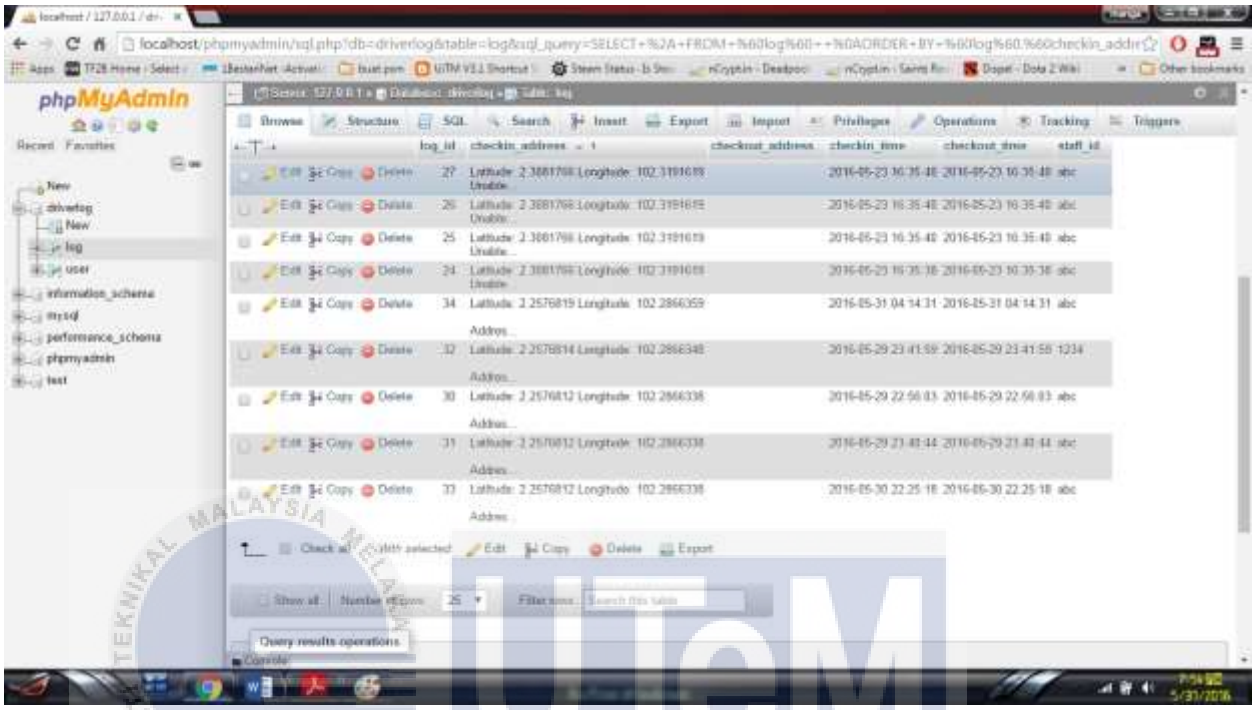

Figure 4.8: Log Driver View

- This are the view from the database which recorded all the check in and check out location with the time.

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4.4.1 Database Design

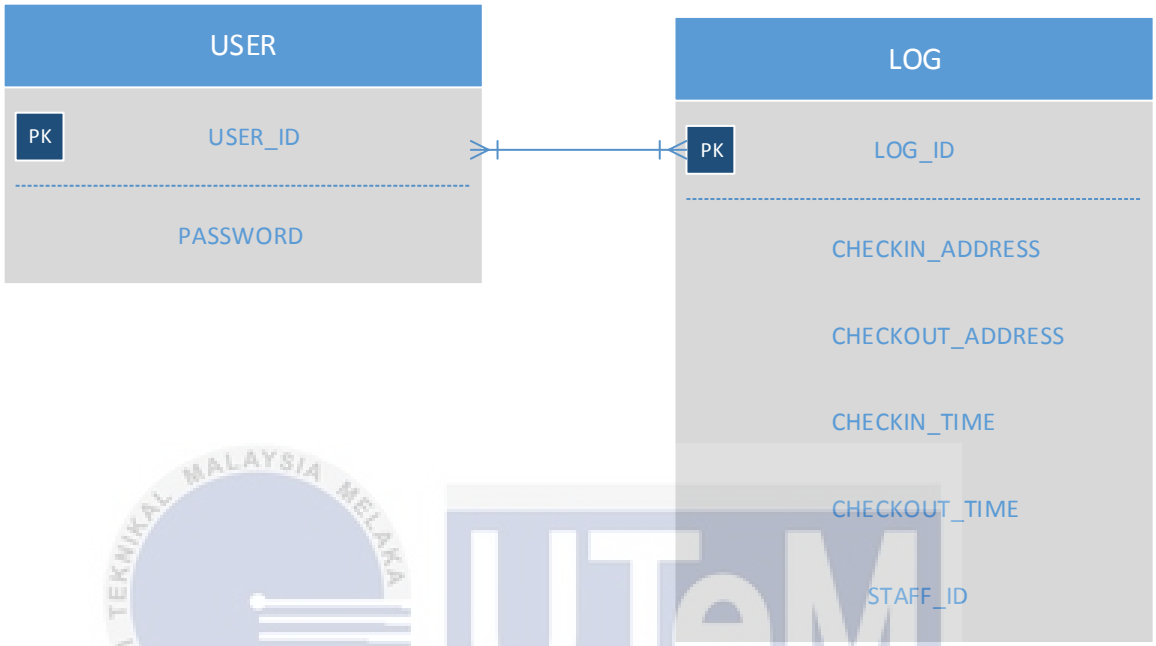

Figure 4.9: Entity Relationship Diagram

The figure show the entity relationship diagram based on the database and it shows that many user can login and check in or check out at the same time with the time.

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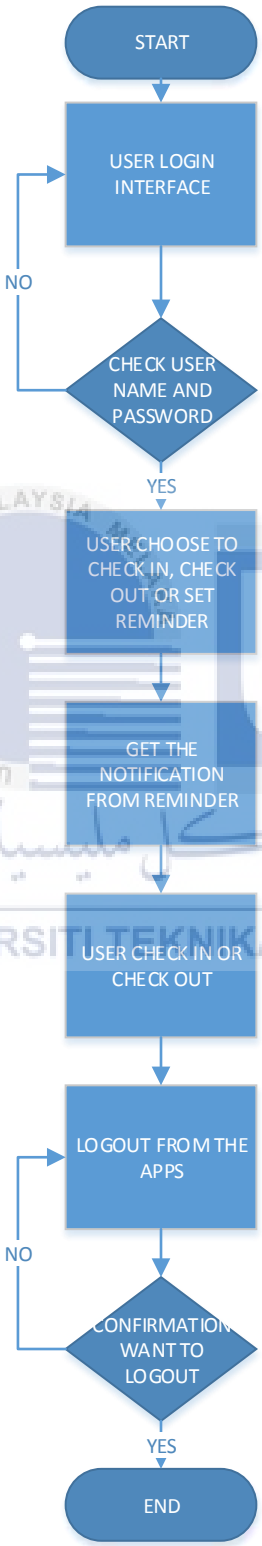
4.4.2 Flowchart



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4.5 Conclusion

The important step to be taken in this chapter are analysis and phase design before proceed to implementation phase because to get the full of the system flow about this project and explanation about the ideas of the project develop. The design for this chapter has been already approve and with this can be proceed to the next phase which is implementation phase. Developers also can make the identification about the need that are require in this phase and also show the process of the analysis that must have. Finally, the next phase will be explaining about implementation and the expected output about the project.

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CHAPTER V

IMPLEMENTATION

5.1 Introduction

In this chapter will discuss about the project implementation. This will cover on how the implementation of the project to make it work. The environment setup will have all the explaination on how the project work. This chapter also will covered on how the software environment setup of the project and implementation status of driver log UTeM.

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5.2 Software Development Environment Setup

i. To develop the application via Android Studio, the following pieces needed to be install:

Java Development Kit 7+ (JDK)

The Android Studio already with the packaged Android SDK when it is successfully installed and the Eclipse or Intellij IDEA component are no need to be installed.

Android Studio Android Studio already comes packaged with the Android SDK so contrary to Eclipse or Intellij IDEA you do not need to install this component.

After all the tools are installed, then can proceed to creating the project.

ii. To use the XAMPP file to make sure the location data are integrated to the database, the following component needed to be installed:

Web Server - Apache

Database Server - MySQL

Web Programming Language - PHP

Database Management Tool - phpMyAdmin

Integrated Development Environment (IDE) - Zend Eclipse PHP Development Tools (PDT)

After all the php configuration can be made to make sure it is integrated with the android studio.

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5.3 Software Configuration Management

5.3.1 Version Control Procedure

The android apps will get a new version in the future that will fix a bug or also to making addition to the apps. The user can get the new version of the apps from the google play or from the management.

5.4 Implementation Status

5.4.1 Icon Of The Android Apps

Figure 5.1: Icon

- This is the icon for the Driver Log UTeM.
- This icon will be display in the android smartphone for the user to know if the apps successful or not installed in their phone.
- The date of completion this icon are 10 August 2016

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5.4.2 Login Page Module

Figure 5.2: Login Module

- This is the login interface for the user.
- User have to input their staff ID and password to using the apps.
- The date to make this module complete are 3 August 2016.

5.4.3 Main Menu Module

Figure 4: Main Menu Module

- This is the main menu for the driver UTeM log.
- It will display the current user that login to the apps.
- User will have to choose whether want to check in, check out or set the reminder from here.
- The date to make this module complete are 3 August 2016.

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5.4.4 Check In Module

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Figure 5: Check In Module

- This is the check in interface if the user has choose to check in.
- User will only have to tap on the button to check in and the location data will be display.
- User also will know if their check in are successfully recorded to the database or not in this interface.
- The date to make this module complete are 3 August 2016.

5.4.5 Check Out Module

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Figure 6: Check Out Module

- This is the check out interface if the user choose to check out.
- User will have only tap on the button to check out and the location data based on the gps of their smartphone will be display bottom of the screen.
- User will be informed if the check out are successfully recorded to the database or not.
- The date to make this module complete are 3 August 2016.

5.4.6 Reminder Module

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Figure 7: Reminder Module

- This is the reminder interface if the user choose to set the reminder.
- The reminder will give the user notification that they will have to check in or check out if they are exceed the time that has been assigned by the management.
- User will have to choose the date and time then click on the set alarm button to active the reminder.
- The date to make this module complete are 3 August 2016.

- **5.4.7 Notification Module**

Figure 8: Notification Module

- This is the notification that will appear after the reminder has been set to alert the user that they will have to check in or check out.
- After user click the notification bar that appear at top of their smartphone, the apps will automatically open to the main menu to make the user to select whether want to check in or check out.
- The date to make this module complete are 5 August 2016.

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5.4.8 Logout Module

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Figure 9: Logout Module

- The user can choose to logout from the apps if they click the right top corner of the screen.
- If the user don't logout from the apps, they will cannot back to the login page and the new user (assume that the other driver borrow the phone) will cannot use the apps.
- The date to make this module complete are 3 August 2016.

5.4.9 Logout Confirmation Module

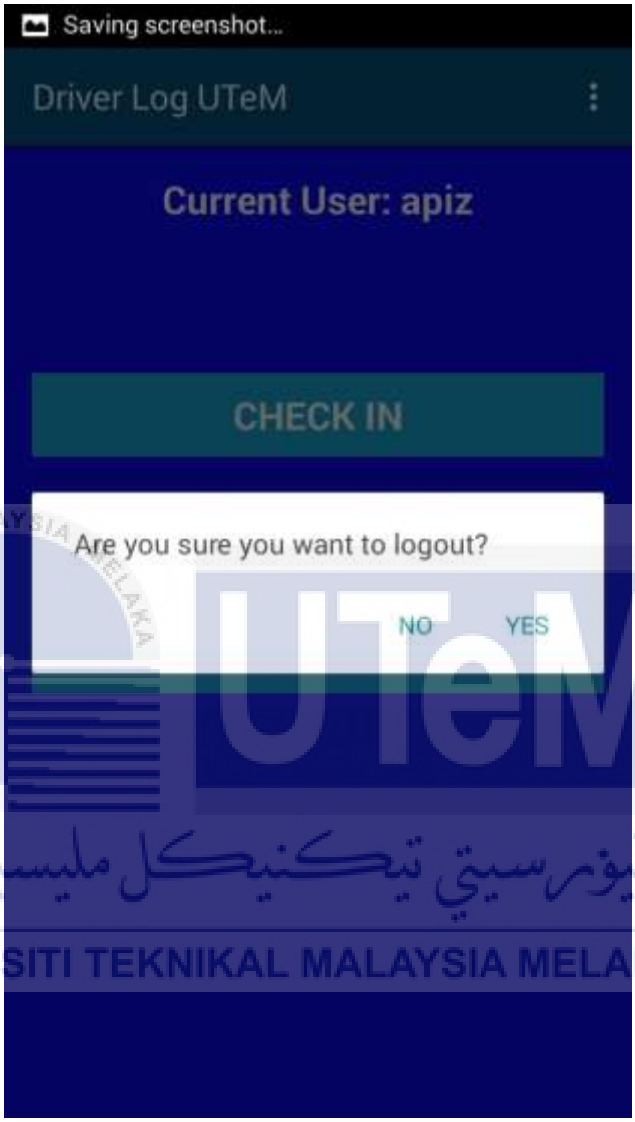

Figure 10: Logout Confirmation Module

- This are the confirmation message that will appear to make sure the user really want to logout from the apps or not.
- If the user choose yes, the apps will automatically back to the login page.
- The date to make this module complete are 3 August 2016.

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5.4.10 Module Summarization

- The duration to complete this apps are 5 month.
- The date of completion this apps are 15/8/2016.
- The size of the apk file (installer for android smartphone) 1.37MB.

5.5 Conclusion

In conclusion, this implementation phase to show about the making of this project work and also the environment setup with all the explanation needed to make the project complete and also to detect if the error occur. The next activity are testing phase which are to testing the apps as to make sure the apps to running as planned.

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CHAPTER VI

TESTING

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6.1 Introduction

This chapter can only be executed after the implementation phase are done completely. After conducting the testing, it will help to identify all the possible drawbacks and all the other malfunction within it. In this chapter also will covered the test organization which consist of the person that involve to test the apps, the classes of test and finally the test result.

6.2 Test Plan

6.2.1 Test Organization

The test that have been conduct in a group of people to test the android apps through the testing process. This apps should be used by the driver but for the testing phase it take different background of the people to produce the good quality apps.

Table 6.1: Test Organization

Tester Name	Title/Position	Responsibilities
Aliff Muzshahir	System Developer	Develop the android apps and make sure the apps run without having any problem before delivered to the end user.
Muhammad Haikal	Graphic Designer	Use the apps to check whether the design of the apps can be accepted when the apps use by the end user.
Muhammad Hafiz	Programmer	Testing using the apps and check whether the data of the location that has been are receive and recorded to the database.
Ahmad Hafizi	Supervisor	Act as the end user and give the feedback about the apps to the developer for fix the bug or the error that occur.

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6.2.2 Test Environment

The test environment are conduct by 2 ways which are consist of inside network (UTeM network) and outside network.

6.2.2.1 Inside Network Environment

The testing using the UTeM network which are inside the UTeM are successful and the location data can be collect without any problem. The location data also can be recorded to the database with the address and the time of the check in or check out.

6.2.2.2 Outside Network Environment

The testing using the outside network which are outside of the UTeM are failure because the UTeM didn't give the permission for the server to be access by the other network besides UTeM network.

6.2.3 Test Schedule

The testing schedule for test the mobile apps are in 2 time, first the check in time and finally the check out time. This will make sure the apps to get the location data from different place and also the data are recorded to the database.

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6.3 Test Strategy

Table 6.2: Test Strategy

White-box testing
Testing the apps by using the structure of the application coding
Also known as "Structural Testing"

Developer and testers will involve in this type of testing

The white-box test strategy are choose for this project because wanted to make sure the coding of the android apps doesn't have error so that the apps will not crash.

6.3.1 Classes Of Test

There are 3 types of test for this project to make sure the apps doesn't have any error:

1. Unit Testing

a. Login Test

The test are conduct to make sure the login module have no error and if error occur can be detect then fix it at the time.

Figure 6.1: Login Module Test

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b. Check In/Check Out Test

The test are conduct to make sure the location data can be receive and then recorded to the database after displaying success of the check in or check out.

Figure 6.2: Check In/Out Module Test

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c. Reminder/Notification Test

The test are conduct to check whether the notification alert are running as expected after the reminder module have been set by the user.

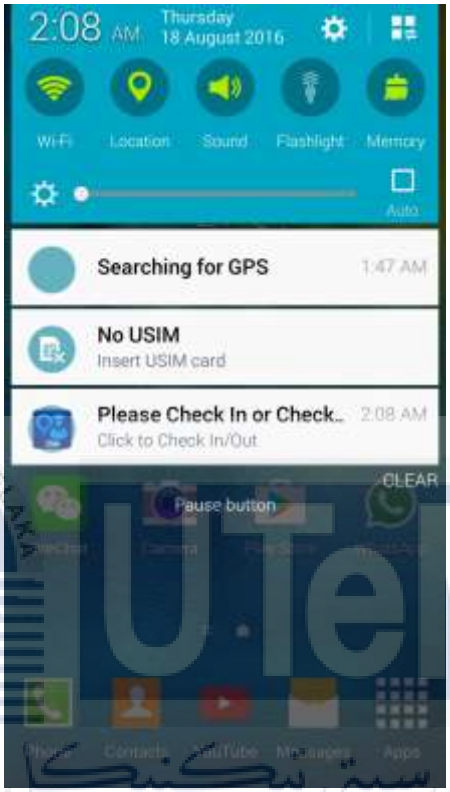

Figure 6.3: Reminder Module Test

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2. Stress Test

The test are conduct to make sure whether the multiple user can user the android apps or not. The test are made by using the UTeM server and the result of this test are successful, where multiple of different user ID can login and user the apps.

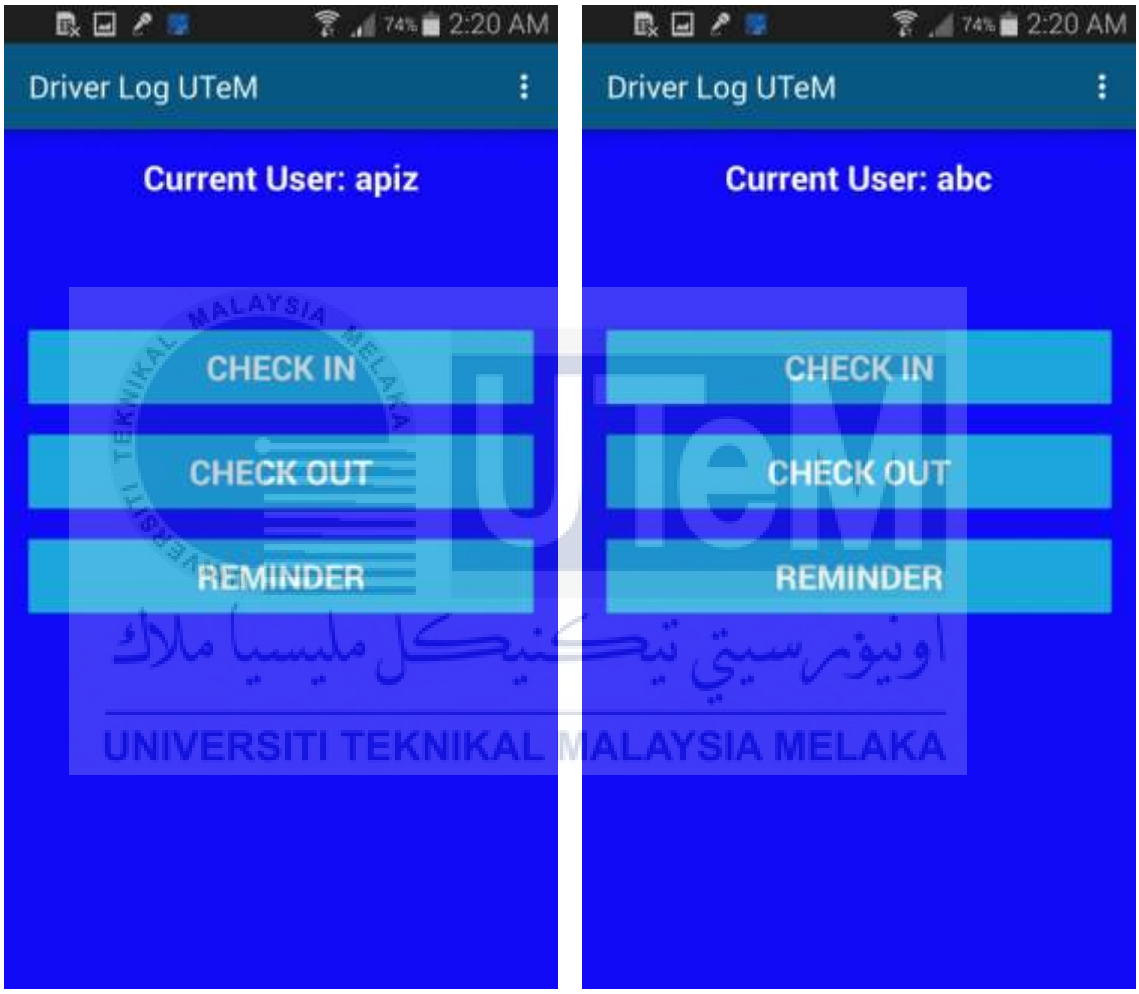

Figure 6.4: Multiple User Test

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3. Functionality Testing

Table 6.3: Functionality Testing

Environment	Result
Inside UTeM network	Success
Outside UTeM network	Fail

The result when testing the android apps for the outside UTeM network are failure because the domain name of the apps didn't insert into the UTeM DNS to make it can be access by the network that are outside UTeM.

6.4 Test Design

6.4.1 Test Description

The test description will covered about the identification test case and the expected result that will each scenario designed and documented.

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Table 6.4: Driver UTeM Log Test Case

Test	Driver UTeM Log
Test Purpose	To check whether the error occur of driver log UTeM coding
Test Environment	Android Version 4.4 (Kitkat)
Test Step	Run the apps from login until logout. **Positive testing** The apps will run without crash/error **Negative testing**

	The apps will encounter a crash/error
Expected Result	The driver UTeM Log will run without any crash or error

Application Test

Test Case ID: DL_ID 1

Module Name: User Login

Table 6.5: Test Case ID 1

No	Test	Expected Output	Tester
1	Valid username and password	Success	Developer
2	Valid username and invalid password	Error	Developer
3	Invalid username and valid password	Error	Developer
4	Not insert username and password	Error	Developer

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Test Case ID: DL_2

Module Name: Check In/Check Out Location

Table 6.6: Test Case ID 2

No	Test	Expected Output	Tester
1	Get the location using UTeM network	Get the location and recorded to the database	Developer
2	Get the location using the outside network	Error	Developer

Test Case ID: DL_3

Module Name: Reminder/Notification Alert

Table 6.7: Test Case ID 3

No	Test	Expected Output	Tester
1	Set the reminder and get alert before the assigned time	Get the alert	Developer
2	Set the reminder and get alert after the assigned time	Error	Developer

6.4.2 Test Data

The test data are consist of real life data and synthetic data.

Table 6.8: Test Data

Real Data	Synthetic Data
The data that are receive from the smartphone gps to know the location of the user that using the android apps.	The data that already been set by the management such as staff ID and password for the user to login the android apps.

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6.5 Test Result and Analysis

Table 6.9: Test Result

Test Case ID	Tester	Result
1	Developer	Success
2	Supervisor	Success
3	Client (PPPK)	Success

The result of the test case are all success. The client which are the PPPK of UTeM give a good feedback and also satisfy with the project.

6.6 Conclusion

In conclusion, the testing phase played an important part because without testing the fail or success the apps will not be detected and also to make sure the objective of the project will be achieved. The future improvement also can be detected while doing the testing like what can be add and what can be remove to make sure the apps are perfect. The next chapter will be discuss about the conclusion of the project which will include the weakness, strength and also the contribution of the project.

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CHAPTER VII

PROJECT CONCLUSION

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7.1 Introduction

This chapter will discuss about the conclusion of the project that has been developed. This phase will covered the overall of this project which consist of the project contribution, project strength and weakness and finally the ways to improve the project in the future.

7.2 Project Summarization

The objective of this project and how the objective has been achieved are listed as below:

i. To develop android apps that can make the driver to check in and check out when they are on their job to send or fetch staff from the place that has been assign and get the notification/reminder.

- The objective has been achieved by making the driver to check in and check out from their current location and also the notification/reminder will alert the driver to make sure they are make check in or check out.

ii. To keep the managements know about the drivers whether send the staff safely and on time.

-The objective has been achieved by making the location data that are recorded into the database also have the time based on driver smartphone when they are making the check in or check out.

7.2.1 Project Weakness and Strength

Table 7.1: Weakness and Strength

WEAKNESS	STRENGTH
i. The reminder/notification are very simple and it only just sound once not continuously to alert the driver. ii. The android apps need an active internet connection to get the location data and record it to the database. iii. The interface of the reminder will change if the smartphone are using android version 5.0 and above.	i. The collection data of the location are accurate because it use the gps from the smartphone that using the apps. ii. The design of the apps are simple and easy for the user to understand on how to use it. iii. The android apps support all the version of the android smartphone.

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7.3 Project Contribution

This project was developed for the driver of University Technical Malaysia Malacca (UTeM) to make the management keep in touch with the driver. The management will know whether the driver are making their job by sending the staff to the correct place or they went to the other place. This apps will prevent the driver to cheat while they are in their job.

The user manual for Driver UTeM Log can be found in page 63 of this report.

7.4 Project Limitation

This android apps can only operate only in the UTeM network for now because the server that are provided by the UTeM didn't give the apps to be access from the network besides of UTeM network. Furthermore, the management will need to open the database instead of having the admin interface because this project only covered more to the driver.

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7.5 Future Works

The Driver Log UTeM apps can be upgrade in the future which consist of:

i. Better notification reminder alert

-The apps can be upgrade to have a better notification reminder that will alert the driver not just once but continuously until the driver make the check in or check out.

ii. Adding a mapping with kilometer (KM) meter

-The KM bar will give info about the status of the place that the driver want to go.

iii. Adding a comment box if the driver are late to check in or check

-The comment box will popup if the driver are late to making the check in or check out by the time that has been assigned by the management and the driver will be need to write their reason (for example accident happen). The management can later check why the driver are late.

iv. Making a admin interface

-With having admin interface, the management will be easier for them to making a checking about the driver activities.

7.6 Conclusion

The conclusion that can be made about this project are all the objective from the project have been successfully achieved. The driver log UTeM will help the management of University Technical Malaysia Malacca (UTeM) to monitor the driver activities better than before. The driver location also will be more accurate to be known by the management after using this android apps.

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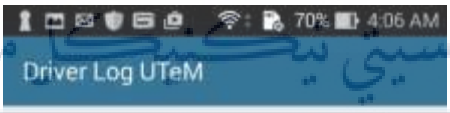
APPENDICES

DRIVER UTeM LOG

USER MANUAL

1. LOGIN USING STAFF ID AND PASSWORD THAT HAS BEEN SET IN THE DATABASE BY THE MANAGEMENT



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2. THEN CHOOSE TO CHECK IN,CHECK OUT OR SET REMINDER FROM THE MAIN MENU

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3. IN THE CHECK IN OR CHECK OUT MENU SIMPLY TAP THE BUTTON TO THE CURRENT LOCATION AND IT WILL AUTOMATICALLY RECORDED TO THE DATABASE IF THE CHECK IN/OUT SUCCESS

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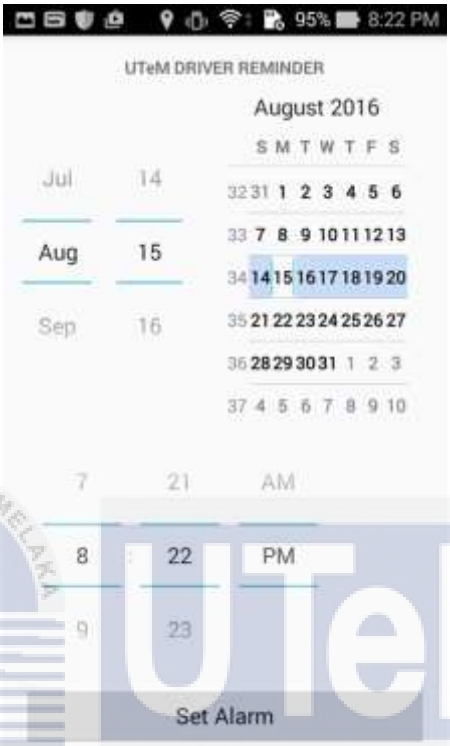
4. IN THE SET REMINDER MENU, USER HAVE TO SET THE DATE AND TIME THEN SET THE ALARM TO MAKE THE NOTIFICATION ACTIVE



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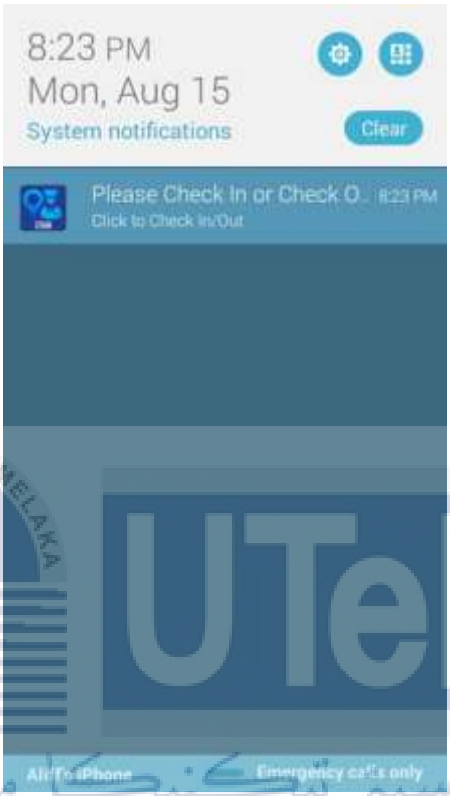
5. WHEN THE NOTIFICATION POPUP APPEAR JUST CLICK ON THE NOTIFICATION TO BACK ON THE CHECK IN/ CHECK OUT MENU



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6. IF WANT TO LOGOUT FROM THE APPS SIMPLY CHOOSE TO LOGOUT FROM THE TOP OF THE RIGHT SCREEN

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7. CHOOSE YES AT THE CONFIRMATION MESSAGE TO LOGOUT AND EXIT THE APPS

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