UNIVERSITY TRAFFIC SUMMONS MANAGEMENT SYSTEM

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This report is submitted in partial fulfillment of the requirements for the Bachelor of Computer Science (Software Development)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
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2016

DECLARATION

I hereby declare that this project report entitled

UNIVERSITY TRAFFIC SUMMONS MANAGEMENT SYSTEM

is written by me and is my own effort and that no part has been plagiarized without citations.

STUDENT : MOHAMAD AMIRUL BIN MD SUHAIMIN Date: 25/08/2016

SUPERVISOR : PN NOR HAFEIZAH BINTI HASSAN Date: 25/08/2016

DEDICATION

To my beloved parents and siblings

Thank you

For endless supports and care for me

Thank you

To my supervisor

For her endless guidance, teaching and advice

Thank you

To my fellow friends

For helping in solve problems in throughout the project

ACKNOWLEDGEMENTS

Alhamdulilah, praise to Allah S.W.T for helping me to complete this “Projek Sarjana Muda (PSM)” successfully.

I would like to express my gratitude towards my beloved parents MD Suhaimin Bin Idris and Rahmah Binti Awang and also my siblings for their supports and motivation through this project.

To my dean, Prof. Dr. Burairah Bin Hussain, dean of Information Technology and Communication Faculty for giving me a chance to complete my degree in this university.

Besides, I am also indebted to my supervisor, Puan Hafeizah Binti Hassan for her guidance and supervise in completing this project.

Last but not least, I would also thanks to my colleague for their comments, supports and suggestion in this project

ABSTRACT

Traffic rules is one of the rules that must be followed by every society. It also included in rules of university that must be followed by student and staff. Therefore, University summons management system is develop to assist auxiliary police issued a notice summons by using mobile application. Besides, to assist them manage their summons record efficiently. All the record safely stored in database. UTSMS also provide a data record for unpaid summons and issued summons that can be export into excel format. The student can check their current summons by using UTSMS mobile application and also get a notification for the summons arrive.

ABSTRAK

Peraturan lalulintas adalah salah satu peraturan yang perlu dipatuhi oleh setiap masyarakat. Ia juga termasuk dalam peraturan bagi setiap universiti dan perlu dipatuhi oleh pelajar dan juga kakitangan universiti. Oleh itu, “University Traffic Summons Management System” dibagunkan untuk membantu polis bantuan universiti untuk mengeluarkan notis saman dengan hanya menggunakkan telefon pintar mereka. Di samping itu, ia membantu mereka menguruskan rekod saman dengan lebih teratur. Semua rekod data saman akan disimpan dalam “database” dengan selamat. UTSMS juga menyediakan laporan saman untuk saman tertunggak dan saman elah dikeluarkan dengan membolehkan data tersebuk di eksport dalam bentuk format excel. Para pelajar dan juga kakitangan universiti boleh menyemak saman semasa mereka dengan mengunakan aplikasi telefon pintar kami dan juga akan mendapat notifikasi untuk saman yang dikeluarkan.

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CHAPTER I

INTRODUCTION

1.1 INTRODUCTION

University Traffic Summons Management System is a system that provide platform to manage a summons by using web-based application and android application. The current summons system using handwritten to store their summons history. The purposes for this system are to enhance the current system. This system provide a web-based system where admin just have to key in the student information into a website form such as registration vehicle. Beside the univesity police can do citation by using their android mobile phone. Beside that, student will get a push notification if a police sue their vehicle.

1.2 PROBLEM STATEMENT

- The files provided to store information of user vehicle are too much.
- The process of isuing summons is complicated.
- The student and staff are difficult to check their current summons if the summons notice was gone.

1.3 OBJECTIVE OF PROJECT

- To assist student alert about their summons by providing a mobile notification.
- To help university police department manage student/staff summons easily.
- To assist auxilitary police to issuing summons by providing an android application.

1.4 SCOPE

1.4.1 Web Based

1.4.1.1 Admin

The responsibilities for admin are to register police staff and student vehicle

1.4.2 Mobile Application

1.4.2.1 University Police Traffic

Responsibility for the auxiliary police are issuing a summons, using their mobile phone if a student or university staff who violates traffic rules

1.4.2.2 Student and University Staff

Both users can check their current summons by using a mobile application and get a push notification if their vehicle imposed with a summons.

1.5 PROJECT SIGNIFICANCE

- Create an interactive, smooth and user friendly website for university police department.
- Efficient in managing a large data.

1.6 EXPECTED OUTPUT

The expected output for this project is to design and develop a smoothly and interactively website for the university police department. This website should be develop based on the user requirement.

1.7 CONCLUSION

In conclusion, this chapter introduced on what does a University traffic summons system helped police traffic to manage summons efficiently. This chapter also describe the features of this project development.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 INTRODUCTION

University traffic summons management system is develop in order to help the police staff manage the summons efficiency on the website. Moreover, university student can check summons status on their mobile device. The both user are able to use the system through online. This chapter will discuss and do a comparison with the existing system.

2.2 FACTS AND FINDINGS

2.2.1 Domain

Following are the list of the type of users:

- Administrator
- Police staff
- Student/Staff university

Admin uses the system for the purpose of:

- Do registration for police staff
- To maintain handle, operate and manage a computer system

Police Staff uses the system for the purpose of:

- To manage and update the summons
- To provide summons statistic

Student uses the system for the purpose of:

- To check their previous and current summons

2.2.2 Existing System

They are a few system website that been used for comparing with the University traffic summons system. The example are www.jpj.gov.my and www.btu.upm.edu.my. Each of them has a different user but the purpose is similar which is managing summons

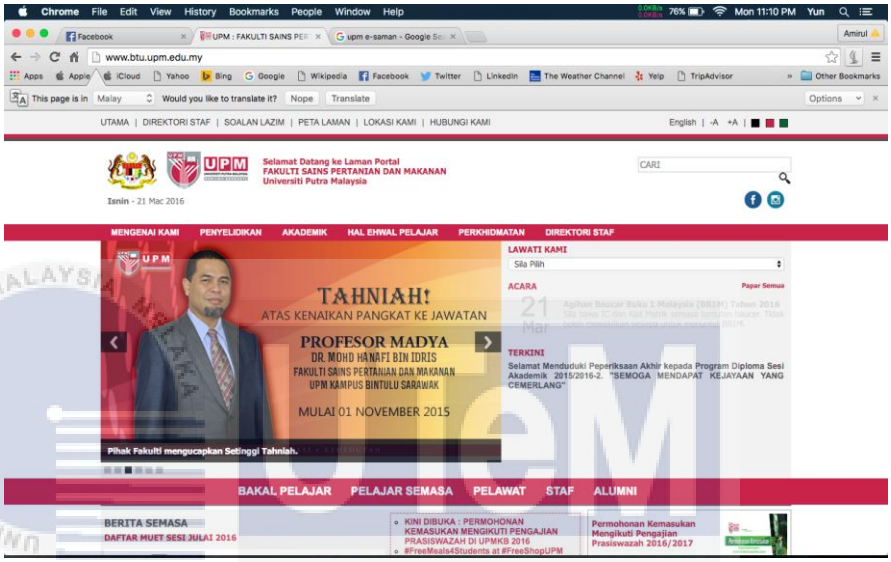


Figure 2.1: home page of btu.upm.edu.my.

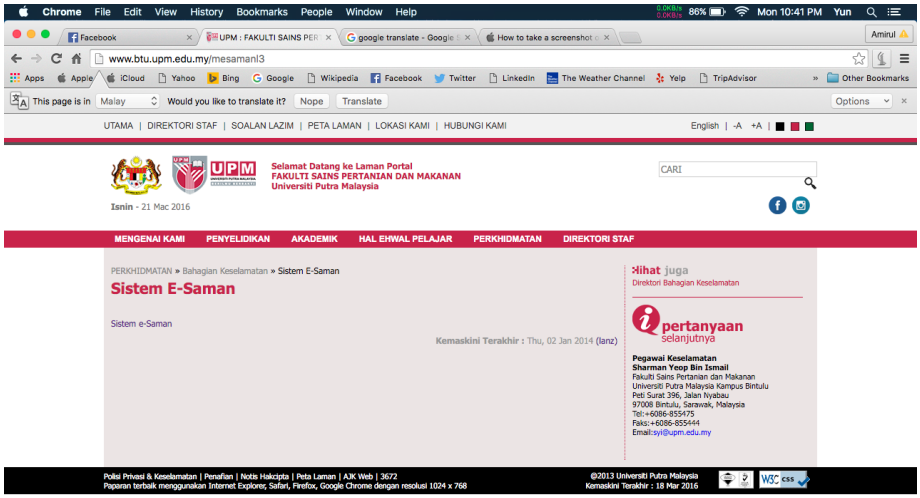


Figure 2.2: check summons for student page btu.upm.edu.my/mesamanl3

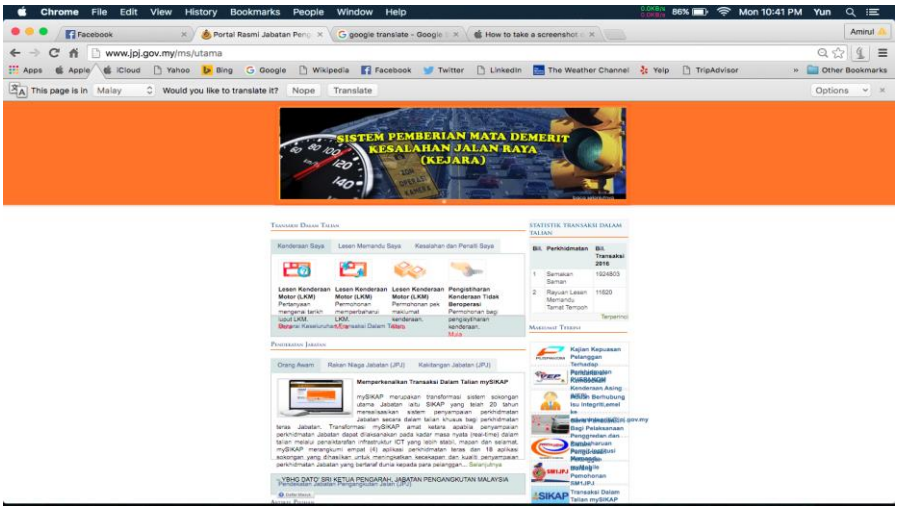


Figure 2.3: home page of jpj.gov.my

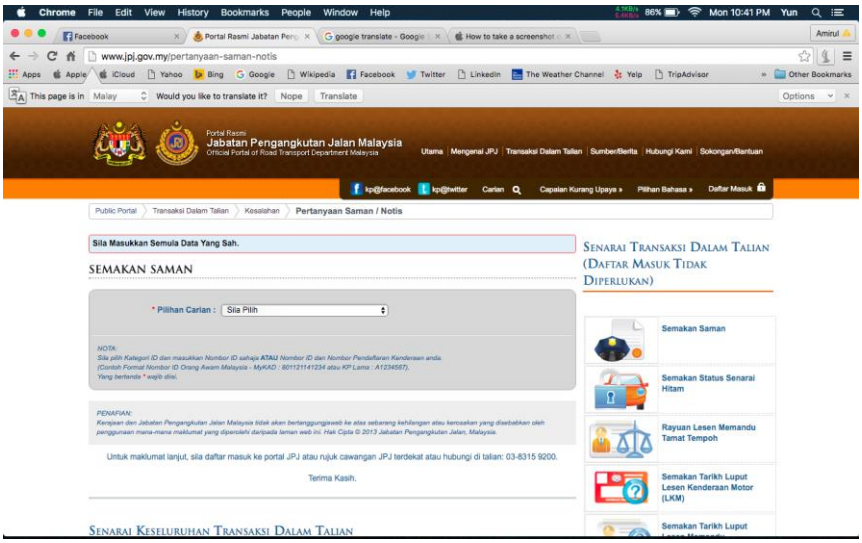
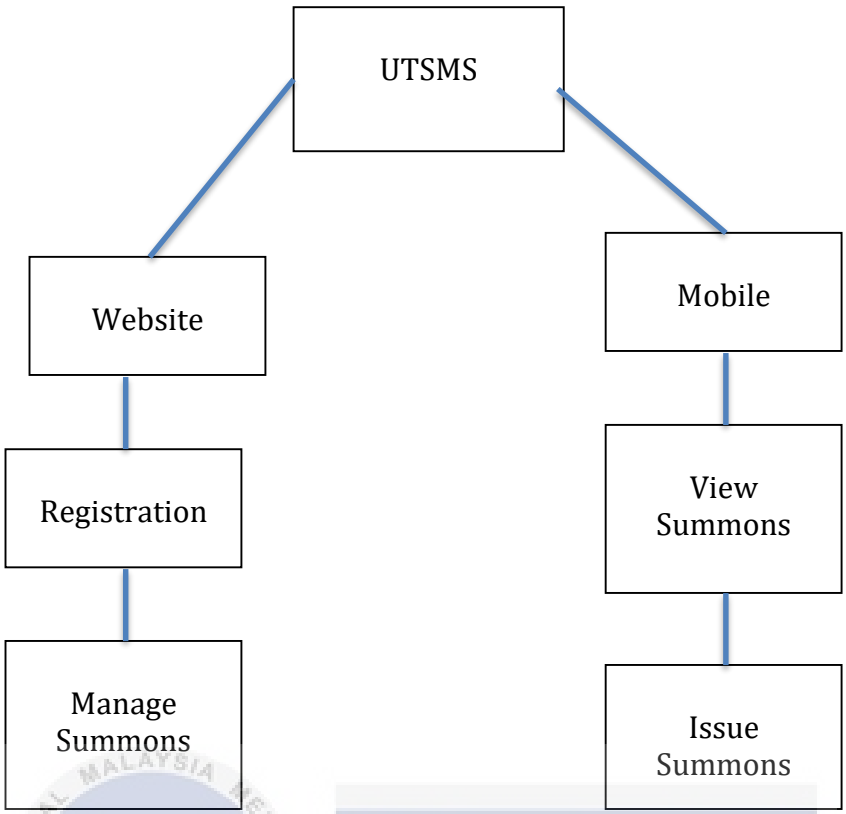


Figure 2.4: check summons status for citizen jpj.gov.my/pertanyaan-saman-notis

Table 2.1: Comparison between website

Website	Advantage	Disadvantage
Jpj.gov.my	- Functions stated on this website are friendly user. - The information are clearly stated	- Design for this website was outdated. - The design of functions for this website are unorganized.
Btu.upm.edu.my	- Information for this website are clearly stated.	- This website outdated. - The information and designs are too unorganized with unnecessary function and information.

The table above shows the comparison between three e-summons website. Each of the website have their own advantage and disadvantage. After analyse, the disadvantages founded during the comparison are mostly the website is too crowded and unorganized. Therefore, University traffic summons management system is develop to avoid these problem.



Purpose system features:

Registration – Access through online.

Manage summons – Insert, update and delete summons.

Statistic – Provide statistic for summons per year.

Notification – Provide notification for summons status.

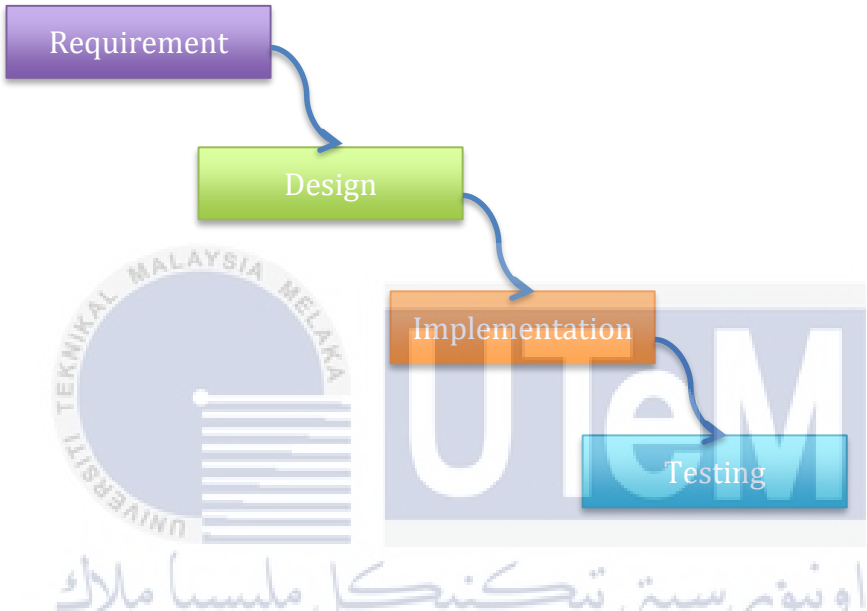
2.2.3 Technique

Technique used during the implementation is Object-Oriented Analysis Design (OOAD). OOAD is used for this system because it suitable in managing a lot of data and the data is reusability. OOAD based on the concepts of objects and attributes, classes and members, wholes and parts.

Programmer applied implementation constraint to the conceptual model produced in object-oriented analysis during the object oriented design. For the mobile application for auxiliary police issued a notice summons used a conceptual model as a referenced in implementation. Concepts in the analysis model are describe onto implementation classes and interfaces resulting in a model of the solution domain and a detailed description of how the system is to be build.

2.3 PROJECT METHODOLOGY

In the development of any project, methodology is one of the important element to make sure the project progress systematically and can be finish on time. To develop this project, the waterfall model must be applied because it's suitable for this system.



In the first stage, the requirement of this project had been collected through interview police traffic by asking the flow of summons process in this university. By referring the website of university police department www.utem.edu.my/keselamatan, the flow of summons system had been stated for developing this system.

In design, the both mobile and website had been designed responsively for improve performance. In mobile the date time for issuing summons had been autofill for reduce the incorrect user input. Beside, series number of summons also had been implement auto generate.

After design, this system move into the next stage which is implementation. In this stage, the system is initiate by developed in small programs called unit. Each of the unit has been assign the due date to be complete. Each unit is developed and tested for its functionality which is referred to as unit testing.

The last stage was testing, the real data has been used to be tested for both mobile and website.

2.4 PROJECT REQUIREMENT

2.4.1 Hardware requirement

- Laptop (MacBook)
- Mobile device (Android)
- Printer (Cannon)

2.4.2 Software requirement

- Microsoft Office Word 2013 – Product for doing a documentation purpose
- Microsoft Office Visio 2013 and StarUML – Product for designing
- Sublime 3 – Product for Implementation (Text Editor)
- XAMPP – Product for Implementation (Web Server)

2.5 PROJECT SCHEDULE

Task Name	W1	W2	W3	W4	W5	W6	W7	W8	W9
Proposal									
Analysis & Methodology									
Design & Implementation									
Demo & Testing									
Actual Presentation									

W10	W11	W12	W13	W14	W15	W16	Product
							Proposal
							Chapter 2&3
							Chapter 4&5
							Chapter 6
							System

*W = Week

2.6 CONCLUSION

In a nutshell, this chapter describe of domain studies, the detail of technology studies and comparison of the existing system. This chapter had provide description about the project methodology which is Agile Software Development and the project requirement consist of software and hardware requirement.

CHAPTER III

ANALYSIS

3.1 INTRODUCTION

In analysis chapter, the structure of this system will be explained. It's important to study about the requirement collected on the previous chapter. It's because this system should be implement based on the requirement given.

In the requirement analysis, the data of input and output is illustrated by using data model. Besides, the function shown in the use case and the sequence diagram. Besides, the non-functional requirement will be specified. This chapter also study the project goal and the aim so that it's similar with the objectives of the system.

3.2 PROBLEM ANALYSIS

Mostly, Malaysia University does not have an e-saman system. They still using a manual process which is the auxiliary police have to write summons on paper. This difficult to police department to record the incoming summons. Therefore, UTSMS provide a system that can assist the police department to manage their own summons.

Beside, some student or staff does not know if they have been imposed with summons. It will be troublesome for students if they want to graduate. That why, the UTSMS provide an android mobile notification for student and staff to alert them if they have been imposed with summons.

The problem analysis is quite important in order to understand about the system developed and the requirements. Besides, the weaknesses that analyzed from the existing features will be describe in discussion in order to produce a well-function and well-designed project.

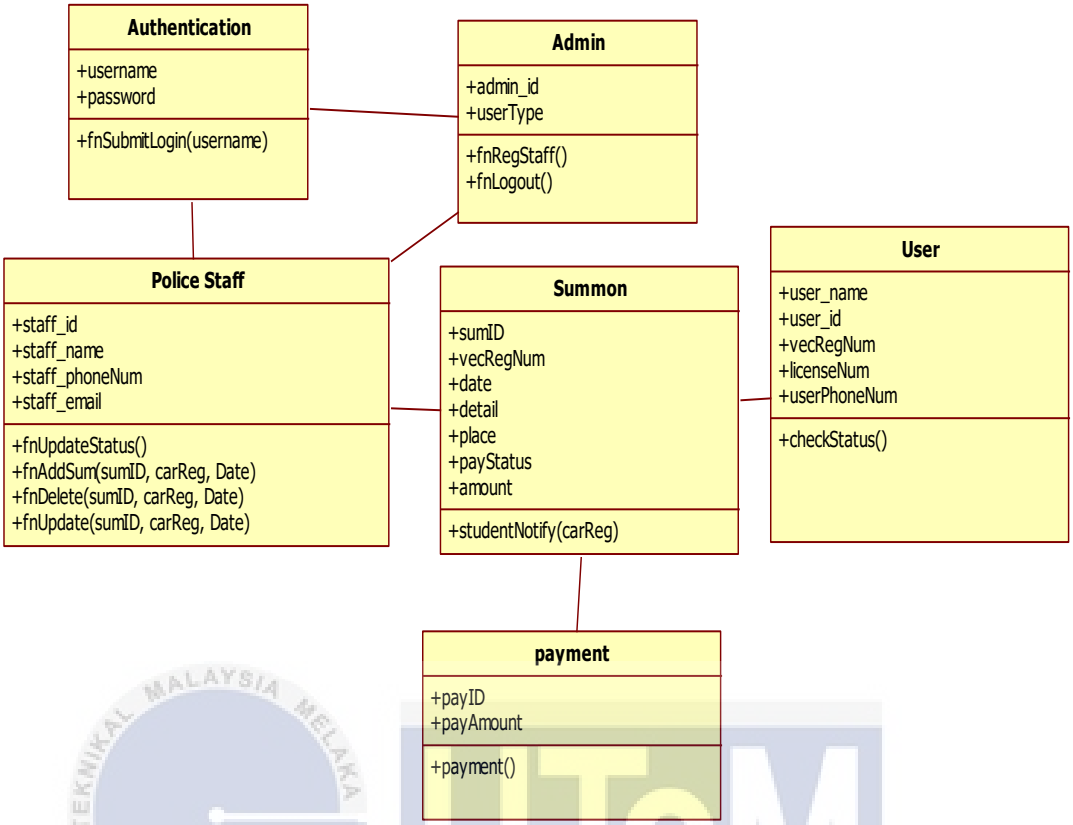


Figure 3.1: Class Diagram

3.3 REQUIREMENT ANALYSIS

Requirement analysis is a process to determine the need of user's need and exception from a proposed system. The success or failure of the purpose system is depends on the requirement analysis. In requirement analysis containing a functional requirement and non – functional requirement, data requirement.

3.3.1 DATA REQUIREMENT

Table 3.1: Admin

Function	Attribute
fnRegStaff()	username, password, Role, email ,phoneNumber
fnRegVehicle()	vehID, id, name, nric, regnum, vehType, userType, faculty
fnLogout()	url

Table 3.2: Summons

Function	Attribute
insertSummon()	tmpID, sumID, regnum, kesalahan, tindakan, datetime, status, price, url
studentNotify()	googleID,id

Table 3.3: Login

Function	Attribute
fnLogin()	Username, password

Table 3.4: Payment

Function	Attribute
fnPayment()	sumID, 21 egnum, kesalahan, price, datetime, status

3.3.2 Functional Requirement

Functional requirements are statements from system that provide and show how the system should react to particular inputs and the system's performance in particular situation. It's defines a function of a system or its component this section elaborate the functional requirements University Traffic Summons Management System.

Table 3.5: Functional Requirements

User	Requirement	Description
Admin	Login	This system validate just a valid username and password will allow to access on admin page.
	Register vehicle	This system will allow admin to register users vehicle
	Register auxiliary police	This system will allow admin to register auxiliary police.
	Manage summons	This system will allow admin to manage incoming summons such as edit, delete, and payment section.
Auxiliary Police	Login	This application will allow a valid username and password can access this application.

	Issue Summons	In android application, the auxiliary police can using their mobile phone to issue summons by using UTSMS application
Student/University staff	Id authentication	This application will allow only a valid matric or staff number to check their summons.
	Check summons	The users can check their payables summons in their mobile by using UTSMS application

3.3.2.1 Use case

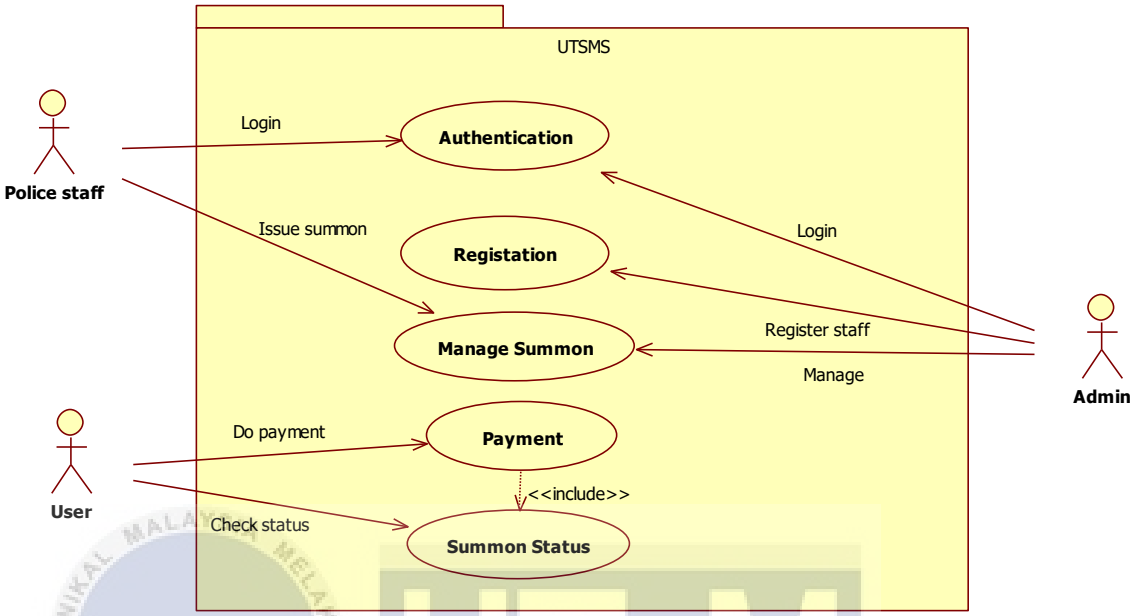


Figure 3.2: Use Case Diagram

Figure 3.2 shows the use case diagram of the system. There are three types of user, which are student, staff and auxiliary police. As for admin, admin have a privilege to register and manage summons. The responsibility of auxiliary police is to issue summons if have a student or staff violate of traffic rules. For student and staff, they can check summons by using their mobile and get a notification.

3.3.2.1.1 Use Case Description

1) Authentication

- Name of the use case : Authentication.
- Brief Description : This use case will allow users and admin to access this system.
- Characteristic of activation : On user demands.
- Pre-condition(s) : Admin and users have to login into the system.
- Description :
    a. Basic Flow :
        i. Admin and users have to keying their username and password
        ii. This system will prompt the main interface for each type of user.
        .
    b. Alternatives : -
    c. Exceptions: Not applicable
- Post-condition(s) : User information will be updated.
- Rule(s) : All the users need to register except admin
- Constraint(s) : Not applicable
- GUI (Optional) : Not applicable

2) Registration

- Name of the use case : Registration.
- Brief Description : This use cases will allow admin to register auxiliary police and users vehicle
- Characteristic of activation : On user demands.
- Pre-condition(s) : Admin and users have to login into the system.
- Description :
    a. Basic Flow :
        i. Admin and users have to key in their username and password
        ii. This system will prompt the main interface for each type of user.
    b. Alternatives : -
- Exceptions : Not applicable
- Post-condition(s) : User information will be updated.
- Rule(s) : -
- Constraint(s) : Not applicable
- GUI (Optional) : Not applicable

3) Manage Summons

- Name of the use case : Manage Summons.
- Brief Description : This use cases will allow admin to manage summons
- Characteristic of activation : On user demands.
- Pre-condition(s) : Admin and users have to login into the system.
- Description :
    c. Basic Flow :
        i. Admin have to key in matric/staff ID or plate number to search a user's
        ii. Admin have to choose whether to edit, delete,
    d. Alternatives : -
- Exceptions : Not applicable
- Post-condition(s) : User information will be updated.
- Rule(s) : admin have to login
- Constraint(s) : Not applicable
- GUI (Optional) : Not applicable

4) Payment

- Name of the use case : Payment.
- Brief Description : This use cases will allow admin to conduct payment session.
- Characteristic of activation : On user demands.
- Pre-condition(s) : Admin have to login into the system.
- Description :
    e. Basic Flow :
        i. Admin have to key in matric/staff ID or plate number to search a user's
        ii. Admin need to click on payment button.
    f. Alternatives : -
- Exceptions : Not applicable
- Post-condition(s) : User information will be updated.
- Rule(s) : -
- Constraint(s) : Not applicable
- GUI (Optional) : Not applicable

3.3.3 Non-functional Requirement

Non-functional requirements are constraints on the services or functions offered by the system. This section describes the non-functional requirements for the system. There are as table below:

Table 3.6 Non-Functional Requirement

No	Requirement	Description
1	Data integrity	The data of the user will be remained the same wherever the data is accessed.
2	Performance	The system should have a good and stable server so that the system can store a large number of data.
3	Reliability and Availability	System must be available for users to access all the time.
4	Usability	The error message will appear to user if user made some error action. At the same time, system will also inform user their mistake.
5	Reusability	The solution must have common framework for generic services and shared across the solution.

3.4 CONCLUSION

In conclusion, this chapter explain about the important of doing analysis of system before implementation. Functional requirements identify the necessary and important tasks given by users that has to be complete. Non-functional requirements are specify the criteria which is used to check the system's process.

CHAPTER IV

DESIGN

4.1 INTRODUCTION

In this chapter, the design process will be discuss about the whole system design. Besides, this chapter will explain in detail on the modules and design specification of function that have been developed. The design also including high-level design, detail design and physical database design.

4.2 HIGH-LEVEL DESIGN

4.2.1 System Architecture

System architecture is the conceptual model that explain about the structure, behaviour, and view of a system. In system architecture have a formal description for representing a system called an architecture description.

Client server architecture have been applied on this system. The system is separate into high layers and lower layer based on the hierarchy of layered architecture. Presentation layer, business layer and database layer has been applied in this system. Each layer has its own responsibilities in this system. Presentation layer represent as a user interface of the system. Besides, the business layer shows the functionality of the system and finally database layer define the database that kept the data of this system. The figure below shows the system architecture of this system.

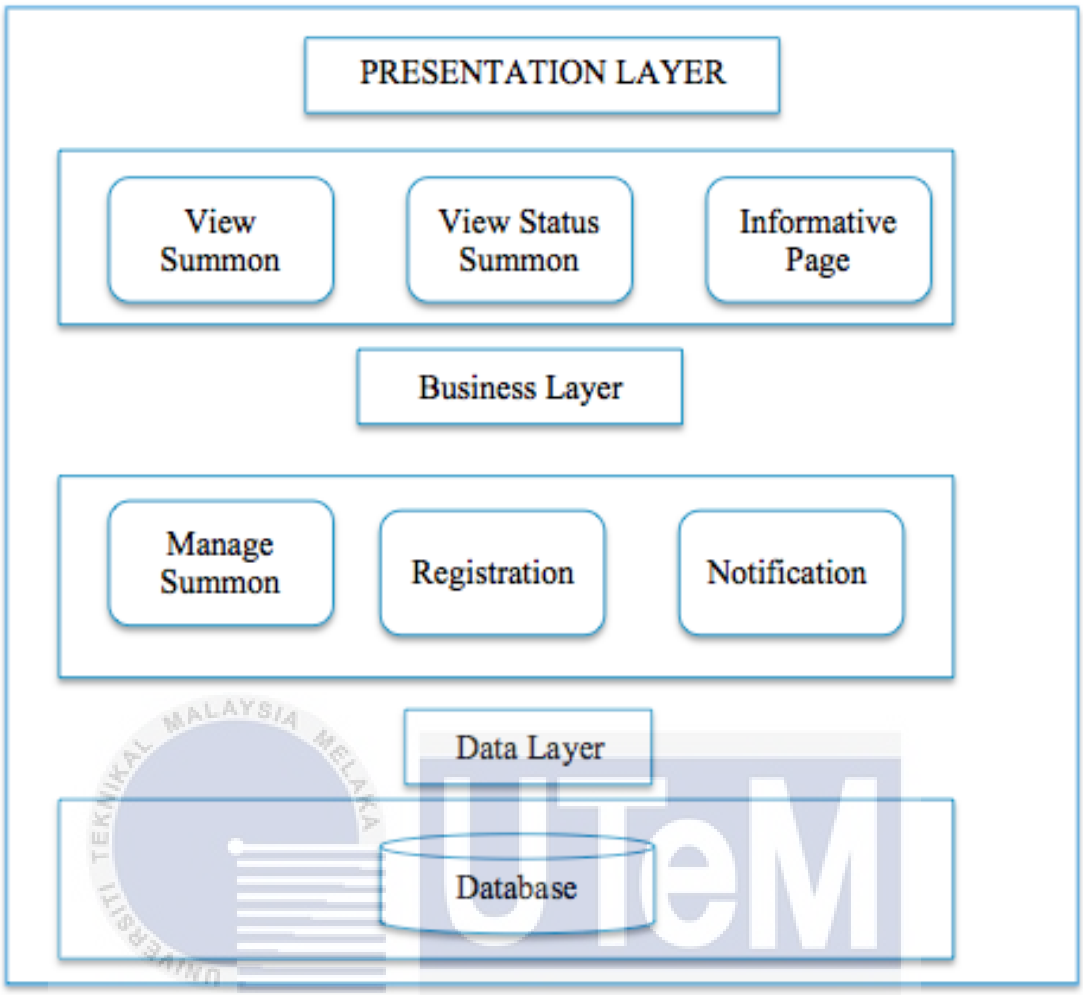


Figure 4.1: System Architecture

4.2.2 User Interface Design

I. Navigation Design

This system have three user with different functions and flows of the navigation.

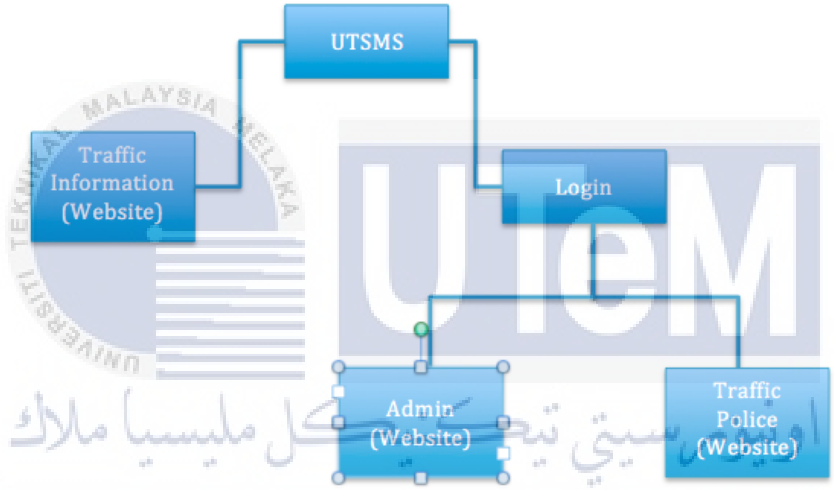


Figure 4.2.1: Navigation flow

Based on Figure 4.2.1, home page for website of the system have option menu such as login system information and announcement. Both of user needs to login to access this system.

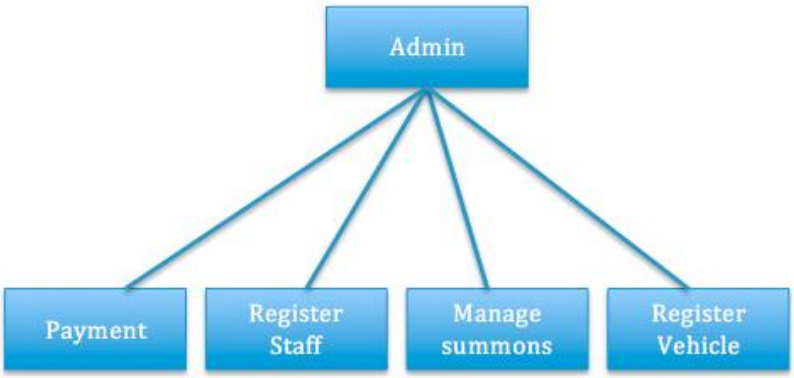


Figure 4.2.2: Navigation flow for Admin

Based on figure 4.2.2, the navigation flow for admin is conduct a payment session, do registration for staff and vehicle and manage summons.

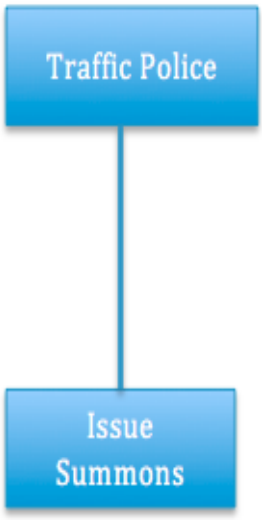


Figure 4.2.3: Navigation flow for Auxiliary Police

Based on figure 4.2.3, the navigation flow for auxiliary police is issue summons for student or staff that has violate traffic rules.

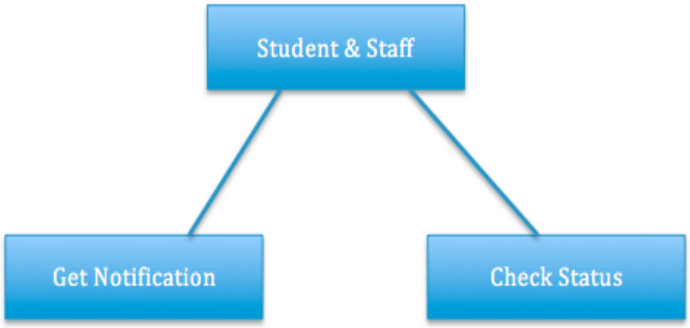


Figure 4.2.4: Navigation flow for Student and Staff

Based on figure 4.2.4, the navigation flow for student and staff are get a notification if their vehicle get summons from auxiliary police and they can check their summons status on the mobile application.

II. Input Design

One of the input design for this system is add function. The user will key in the data in the form provided then click a button submit. Then the data will be save into database. There are several throughout the system.

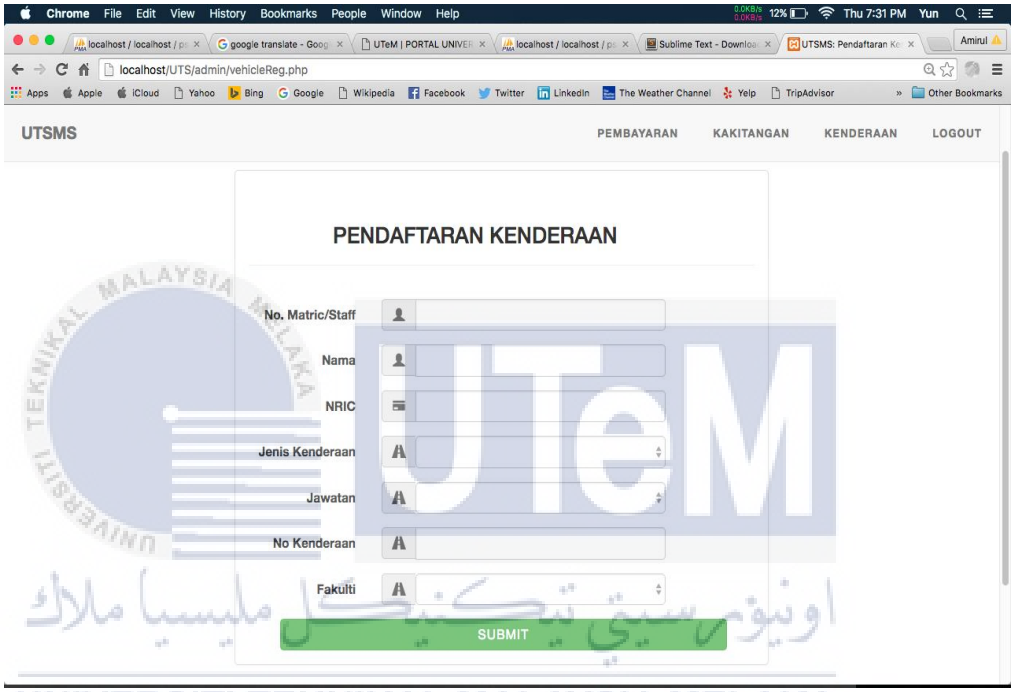


Figure 4.3.1: Vehicle Registration

Based on the figure 4.3.1, admin has to fill in all the form require before submit the registration form. After that, click a submit button to register the vehicle.

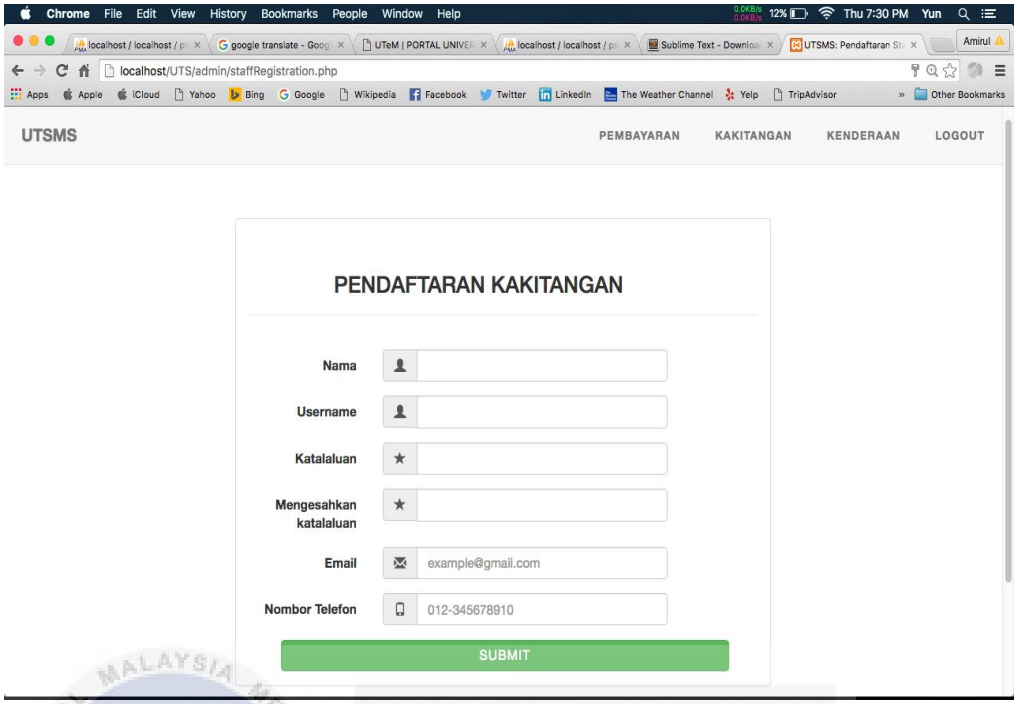


Figure 4.3.2: Auxiliary police registration

Based on the figure 4.3.2, the admin has to fill all the form for the auxiliary police registration. After that, click on the submit button to submit the registration form.

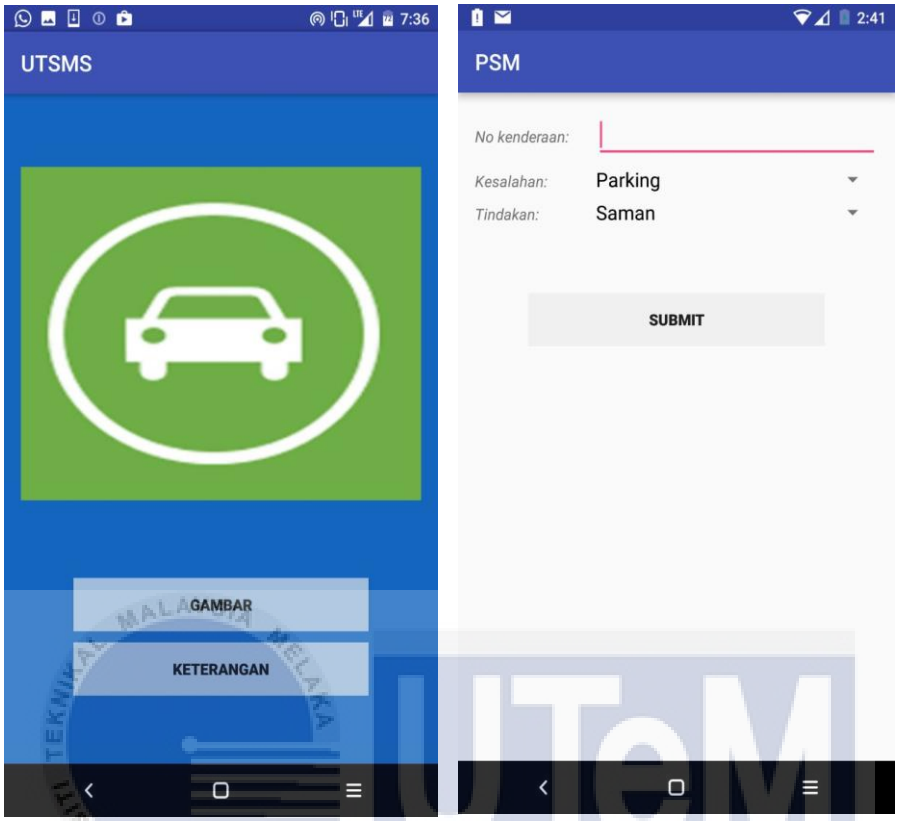


Figure 4.3.3: Mobile application for issued summons

Based on the figure 4.3.3, auxiliary police has to take a picture of vehicle as evidence and fill all the detail to issue summons.

III. Output Design

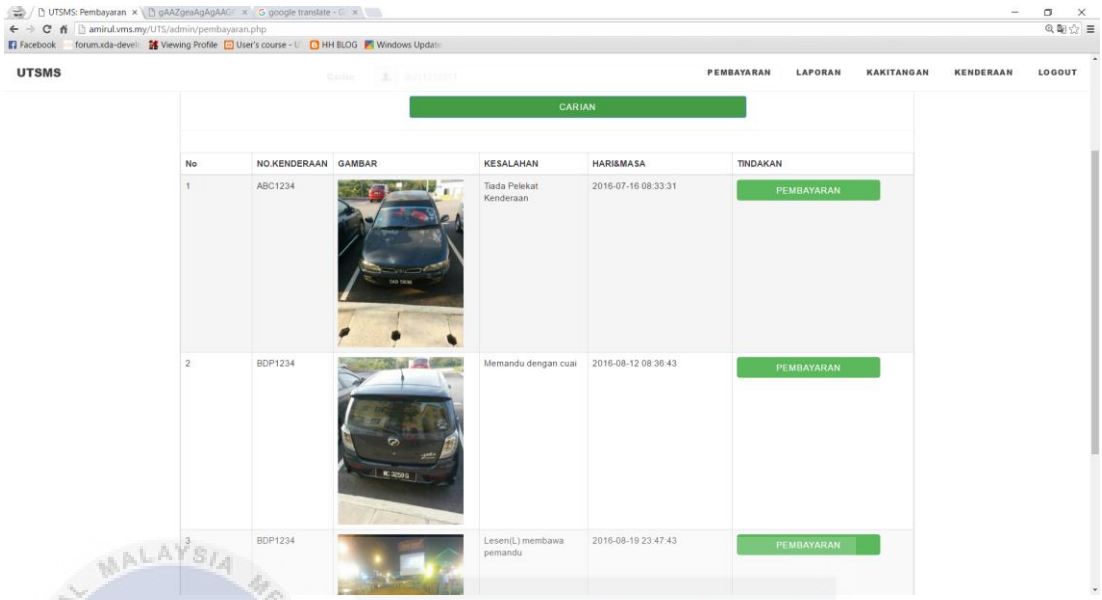


Figure 4.4.1: List of summons

Based on the figure 4.4.1, the page shows summons that issued on the current date. Summons can be search by using matric/staff number or vehicle registration number. For the payment, admin just need to click on “Pembayaran” button.

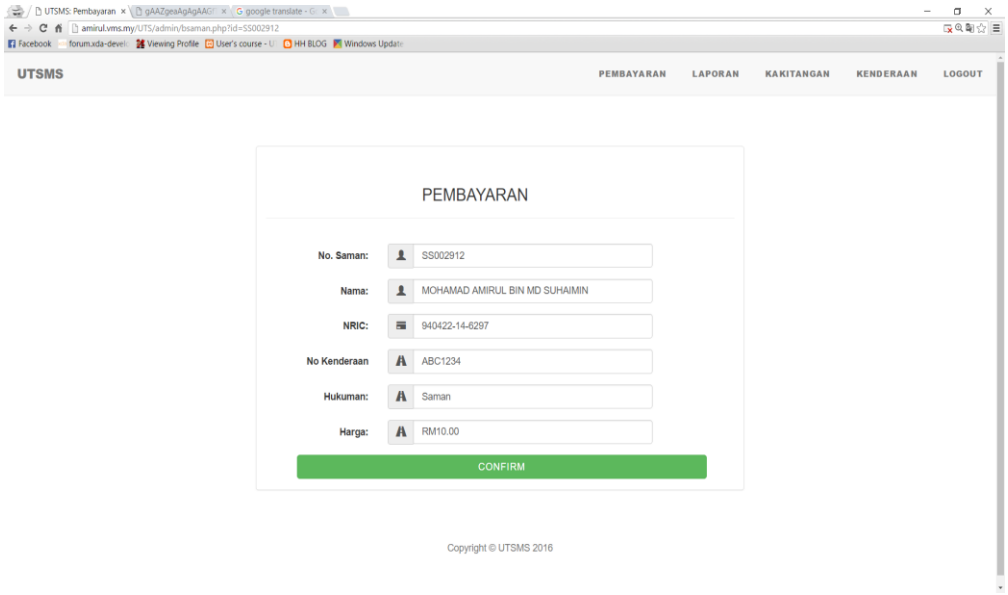


Figure 4.4.2: Payment detail

Based on the figure 4.4.2, after click on the “Pembayaran” button. The system will list the detail of summons. After that click on the confirm button to generate a receipt.

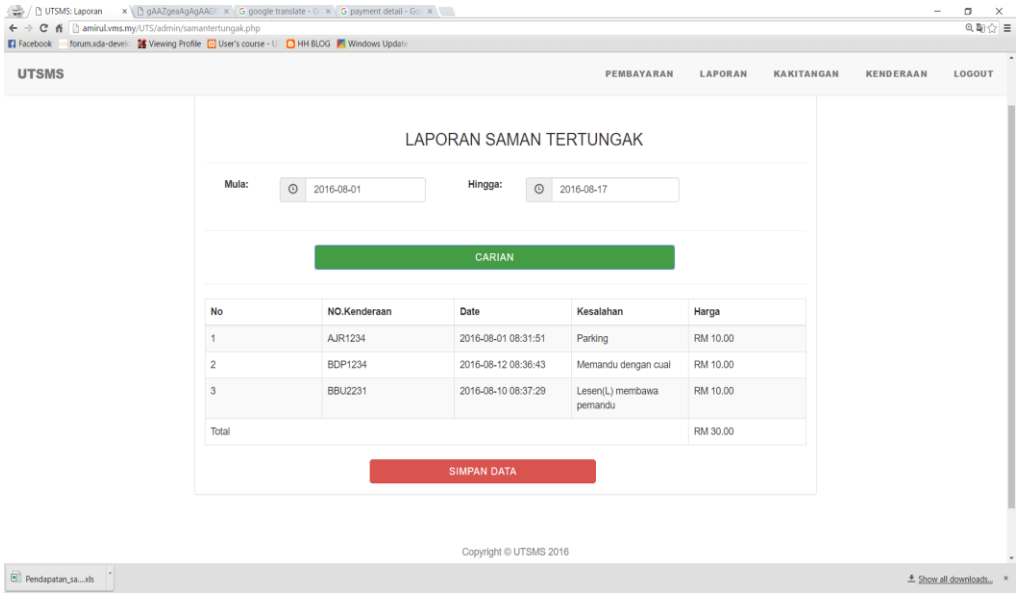


Figure 4.4.3: Unpaid summons report

Figure 4.4.3 shows that total unpaid summons for the date assigned. The table data can be transferred into excel format by clicking on “SIMPAN DATA” button.

Figure 4.4.4: List of current summons for student or staff

Figure 4.4.4 shows the list of current summons for user's (student/staff) that has been issue by auxiliary police.

6.2.2 Database Design

4.2.3.1 Conceptual and Logical Database Design

University traffic summons management system will store the data into database MySQL that consist of three table. The tables name is vehicle, user and summons.

Table user is to keep personal data of user such as name, email address, contact and etc. As for table vehicle, it used to store all detail of student vehicle. For summons, it used to store all detail of summons and the price of summons.

The business rule is listed below:-

- One summon issuing to only one vehicle
- One user can issuing more than one summons

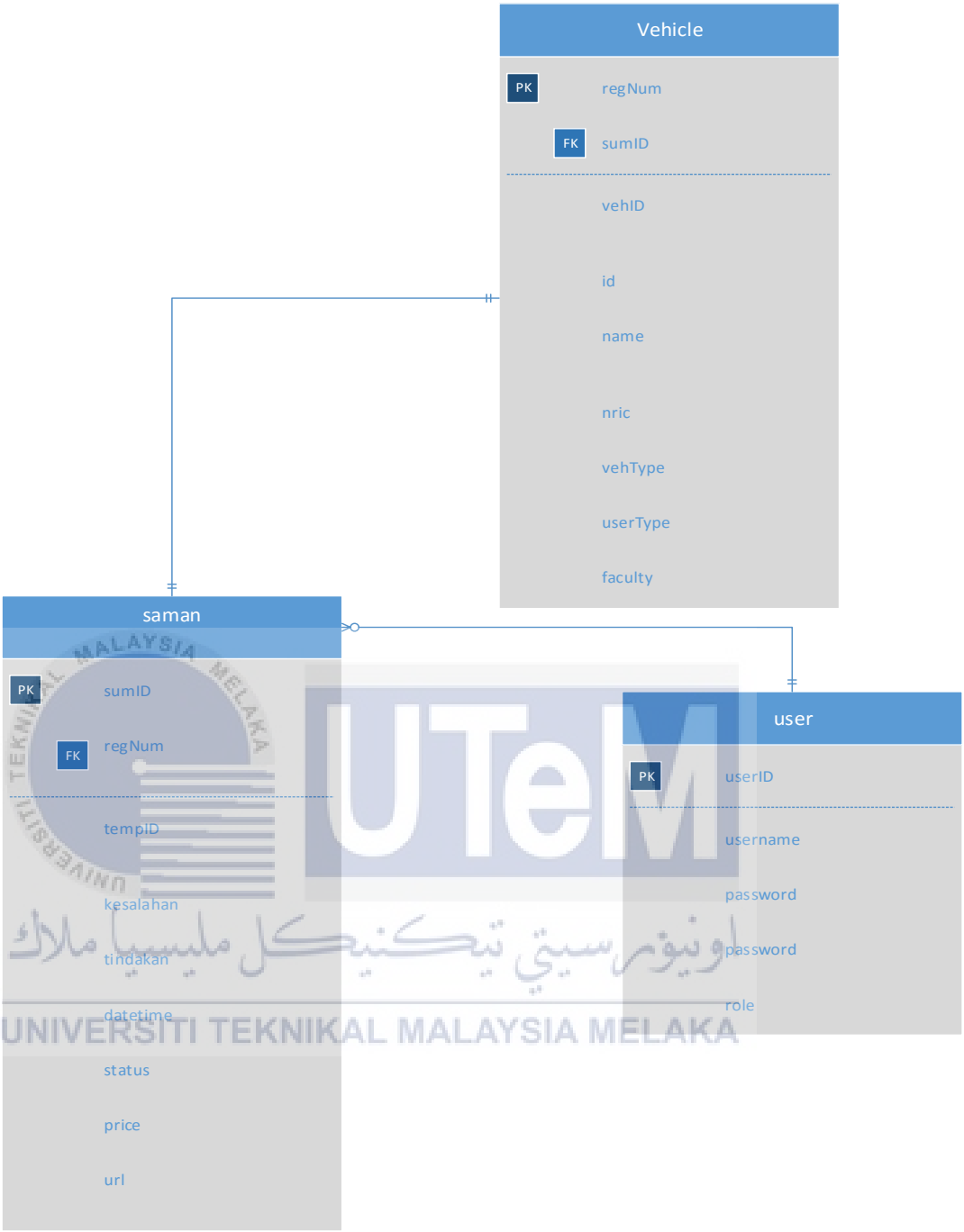


Figure 4.5: Entity Relationship Diagram

4.2.3.2 Data Dictionary

Data dictionary shows the description of each attribute or data object used in data model for the benefit of programmers. It consists of field name, data type, field size, description and example. The given Table A, Table B and Table c represents the data dictionary for users, vehicle and summons. The table of data dictionary included in appendix.

6.2 DETAIL DESIGN

4.3.1 Software Design

Software design is the process of defining software methods, functions, objects, and the overall structure and interaction of code so that the resulting functionality will satisfy user's requirements. E-learning system with Mobile Notification is using HTML file format for user interface design purpose, XAMPP for database in order to connect with MYSQL for query in this system.

4.3.2 Physical Database Design

Process of producing a description of the implementation of the database on secondary storage; it describes the base relations, file organizations, and indexes used to achieve efficient access to the data, and any associated integrity constraints and security measures.

4.3 PHYSICAL DATABASE DESIGN

Table 4.1: Physical Database Design

Table	Column	Data Type	Notes
User	userID	Varchar(10)	Primary key
	username	Varchar(50)	
	password	Varchar(20)	
	role	Int(1)	
	name	Varchar(50)	
	phoneNumber	Varchar(30)	
	email	Varchar(50)	
Vehicle	vehID	Int(10)	
	Id	Varchar(30)	
	name	Varchar(20)	
	nric	Varchar(20)	
	regNum	Varchar(10)	Primary key
	vehType	Varchar(10)	
	userType	Varchar(20)	
	faculty	Varchar(20)	

Table	Column	Data Type	Notes
Saman	tmpID	Int(10)	
	sumID	Varchar(20)	Primary Key
	regNum	Varchar(20)	
	kesalahan	Varchar(50)	
	tidakan	Varchar(20)	
	url	Varchar(100)	
	datetime	Varchar(30)	
	status	Int(1)	
	price	Varchar(20)	

6.2 CONCLUSION

In this chapter, it discussed about the design of the system, which include High level design and detailed design. For high-level design, it is divided into three parts which is system architecture, user-interface design and database design. The system architecture that is used for this system is multi-layered architecture that consists of 3 level of layer which is presentation layer, business layer and database layer.

User-interface design has three parts which is navigation design, input design and output design. For navigation design, it defines the flows of the system for every each of user that use this system while input design shows the input data from user in any form of information. Output design is the result and action from what the user input to the system.

For database design, it shows the data that will be keep in this system. The database is visualized by using entity-relationship diagram (ERD). The entity-relationship diagram shows the relationship in every each of the data entity in this system.

CHAPTER V

IMPLEMENTATION

5.1 INTRODUCTION

This chapter will discuss about the implementation of the system. System implementation is the process of defining how the system should build and ensuring that system is operational. The purpose of ensuring that the system meets quality standards is to make sure the system is available to a prepared set of users and positioning on-going support and maintenance of the system within the organization. This is the phase where the technical IT or team member carrying out execution or practice of plan, method and design for the system that has been build. The execution includes the installation, configuration, running, testing, and making necessary changes of the system.

5.2 SOFTWARE DEVELOPMENT ENVIROMENT SETUP

In this software development environment setup, there are several software that used to develop this system

5.2.1 Sublime Text

Sublime Text is a cross-platform source code editor. It natively supports many programming languages and mark-up languages such as PHP, HTML, and others. Its functionality can be extended by users with plugins, typically community-built and maintained under free-software licenses.

5.2.2 XAMPP Server

XAMPP Server is automatically installed with Apache, PHP, MySQL, database and Phpmyadmin. XAMPP refers to a set of free open source applications which are commonly used in server environments. It contains Microsoft Windows as operating system, Apache as web server, MySQL handles database components, and PHP as dynamic scripting language.

5.3 SOFTWARE CONFIGURATION MANAGEMENT

5.3.1 CONFIGURATION ENVIROMENT SETUP

Software configuration need to be managed well. The purpose of managing software configuration is to test the system and defines the error of configuration, error in codes of both software and hardware.

6) Installation XAMPP SERVER

- Download XAMPP Server from www.apachefriends.org.
- Run the installer and follow the instruction
- Start the apache web server and MySQL database

b) Installation Sublime Text

- https://www.sublimetext.com/3
- Run the installer and follow the instruction
- Start the sublime and ready to use.

5.3.2 VERSION CONTROLLER PROCEDURE

Version control is used to manage multiple versions of computer files and programs. A version control system, provides two primary data management capabilities. It allows users to lock files so they can only be edited by one person at a time and track changes to files.

Table 5.1: Version Controller Procedure

Page	Version	Date	Author	Description
Conn.php	V1.0	2/6/2016	Amirul	Connection to database
Authentication.php	V1.0	2/6/2016	Amirul	Login into system
vehReg.php	V1.0	2/6/2016	Amirul	Register users vehicle
staffReg.php	V1.0	2/6/2016	Amirul	Register staff vehicle
getAllSummon.php	V1.0	2/6/2016	Amirul	Get all summons for today

Page	Version	Date	Author	Description
getSummon.php	V1.0	2/6/2016	Amirul	Get summons by matric/staff number
LoginMobile	V1.0	2/6/2016	Amirul	Login for auxiliary police
sumInsert.php	V1.0	2/6/2016	Amirul	Insert summons detail into database
mobileSummon.php	V1.0	2/6/2016	Amirul	Get all summons for check status
userMobile. Php	V1.0	2/6/2016	Amirul	Assign mobile application by matric number

5.4 IMPLEMENTATION STATUS

The implementation status establishes the schedule and needed resources. It defines implementation details including programming language, platforms, programming environment and others.

Table 5.2: Implementation Status

Module	Description	Time	Data Complete
Login	The users are required to enter the valid username and password in order to access the website or mobile application. The username and password will interacts with the database to verify the validate	4day	30 April 2016
User Management Module	This module is where system user's management will be done.	3 months	28 May 2016

5.5 CONCLUSION

This chapter concludes that the implementation of the system is an important process. It is because the implementation process involves in getting the new system to operate properly including installation, configuration, testing and making necessary changes to the system. Therefore, system testing should be done carefully in order to ensure that the right and successful system and application implementation is developed.

CHAPTER VI

TESTING

INTROODUCTION

In software development, the fundamental employment of testing is to analyse mistakes and overcome the problem. Essentially, testing phases is needed in order to ensure the system implemented is working without an error. There are several type of testing that used to testing the system such as testing, unit testing, integration testing and acceptance testing. Testing a system is an important steps before the system is being release or launched because the testing phase is carried out to find an incomplete function, finding a bug or error using specific tool and test case to ensure the system are error free, performance and functional as intended before the system can be launched.

6.2.3 TEST PLAN

Test plan is a document that describe the scope, approach, resources and schedule of intended testing activities. It identifies the test items, the features to be tested, the testing tasks, task responsibilities and any risks requiring contingency planning. The details are given in this following sections:

6.2.4 Test Organization

Test organization describe those individual who involves in the testing phase. The individuals are responsible to test each of the system modules. Table 6.1 shows the test organization for University Traffic Summons Management System.

Table 6.1: Test Organization of UTSMS

Testing Activity	Testing Member
Unit Testing	MOHAMAD AMIRUL BIN MD SUHAIMIN
Integrating Testing	MOHAMAD AMIRUL BIN MD SUHAIMIN
System Testing	MOHAMAD AMIRUL BIN MD SUHAIMIN
User Acceptance Testing	PN NOR HAFEIZAH BINTI HASSAN

The test processes mostly tested by developer, Mohamad Amirul Bin MD Suhaimin. Meanwhile, the supervisor, Pn Nor Hafeizah Binti Hassan herself will do validates and testing to the completed system in order to ensure this system is developed according to the objective and requirements.

6.2.5 Test Environment

Table below show the test environment for University Traffic Summons Management System. The specification are required for developing this system.

Table 6.2: Test Environment

SOFTWARE CONFIGURATION	SPECIFICATION
Device Model	MacBook Pro
Operation System	OS X El Capitan
Ram	8 GB
Processor	2.3 GHz Intel Core i5
Database	Phpmyadmin (srv9.vms.my)

6.2.6 Test Schedule

Test schedule consists of testing types, description of testing types, duration, start date and end date of system testing. Table below shows the testing schedule of the system

Table 6.3: Test Schedule

Testing Types	Description	Start Date	End Date	Duration
Unit testing	To ensure that each module in the system meets the system requirements.			
Integration Testing	To test the integrated system of each module			
System Testing	To test the whole system whether it working in a proper way or not.			
User Acceptance Testing	To test the satisfaction of the system end user towards the system.			

6.3 TEST STRATEGY

Several strategies available were bottom-up/top-down approach and black-box/white-box approach. For this project, the test strategies selected are the bottom up and white-box approaches.

University Traffic Summons Management System uses bottom-up strategy approach is integrating testing as a test strategy. Bottom-up testing requires all components from lower level hierarchy of the system to be tested individually. The progress will continues until all the modules of the system are integrated and tested.

6.3.2 Classes of Test

6.3.2.1 Functional Testing

Functional testing is primarily is used to verify that each of software module is providing the same output as required by the end-user or business. Typically, functional testing involves of evaluating and comparing each software function with the business requirement.

6.3.2.2 Compatibility Testing

The proposed to do a compatibility testing is to endorse that the application runs properly in different browsers, versions, OS and networks successfully. Compatibility test should always perform on real environment instead of virtual environment.

6.4 Test Design

Test design is the activity where general testing objectives are transformed into actual test conditions and tests design. It is also a set of conditions or variables under which a tester will determine whether a system under test satisfies requirement or working properly.

6.4.2 Test Description

Table below shows a test description made containing every module in preparation before carrying out test case. The test description included a test case ID, functional requirement, Test case title, description and expected result. The table of test description included in appendix.

6.4.3 Test Data

Test data is used to fill in the form provided to ensure that system work properly. The test data consists of modules, field of modules, valid and invalid data of the test data.

Table 6.4: Test Data

No.	Module	Field	Test Data	
			Valid	**Invalid**
1	Login	Username	admin	ADMIN,AdMin,Admin
		Password	Admin	ADMIN,AdMin,Admin
2	Register Auxiliary Police	Username	Amirul	Amirul,AMIRUL
		Password	132123	Abc132,321123
		Nama	Mohamad Amirul	
		Pengesahan Katalaluan	132123	321123,321123
		Email	amirul@gmail.com	Amirul.com
		No. Telefon	+6019-225-4401	017adfasda
3	Register vehicle	No matrik/staff	B031310311	B 0001, 20@#
		Nama	Mohamad Amirul	
		NRIC	940422-14-6297	940422146297
		No. Kenderaan	BDP1234	AJR55555555555555

6.5 CONCLUSION

In this chapter, the detail of each function had been describe in the test plan. The testing included an assessment of the functionalities of the system are tested from an end-to-end perspective and also to evaluate the completed system the system's compliance against specified requirement.

CHAPTER VII

CONCLUSION

7.1 INTRODUCTION

The step of developing this system has been shown in this report. The documentation concludes all chapters which are introduction, literature review, methodology, analysis and design, implementation and testing. Moreover, while developing this system the strength and weakness of this system had been realized. The last section is the suggestion of improvement needed by this system. Lastly, this chapter also depicts whether the project meets the objective and requirement.

7.2 OBSERVATIION ON WEAKNESS AND STRENGTHS

The weakness that has been identified in this project functionality after overall testing and evaluation is:

I. The flexibility of capture image in issuing summons (image can't be horizontal).
II. The system not allow doing multiple payment.
III. The system can't be access in English language.

7.3 PROPOSITON FOR IMPROVEMENT

Suggestion for the improvement of the system

I. Improve user experience design such as improvement on UI design.
II. Improve performance of application. Reduce compressing image duration.
III. Improve the responsively of the system. Both web and mobile application.

7.4 PROJECT CONTRIBUTION

This project is developed for auxiliary police in university to ease them in order to manage summons. At the same time, this system reduce the process of registration vehicle, record revenues of summons and issuing a summons process. Besides, the student and staff also can view the current summons and get a notification if summons arrive. The university also can get a record of unpaid summons and also summons issued based on date specified.

7.5 CONCLUSION

In conclusion based on the objective given. The system has meet all the requirement and objective stated. The system is developed as a web based system and mobile application. Although some weakness is spotted after evaluation, further observation and improvement may be carry through for improvement.

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APPENDICES

APENDIX A

1.1 Data Dictionary

Table A: Data Dictionary (User)

Field Name	Data Type	Field Size	Description	Example
userID	Int	3	ID for determine user	2
username	varchar	30	variable for authentication	Admin
password	varchar	30	Same as username but this variable was hidden	****
Role	varchar	10	Variable for differentiate user's	user

Table B: Data Dictionary (Vehicle)

Field Name	Data Type	Field Size	Description	Example
vehID	int	3	Id for determine user's vehicle	1
Id	varchar	20	Matric/Staff number	B031310311
Name	varchar	20	Name of vehicle owner's	MOHAMAD AMIRUL BIN MD SUHAIMIN
Nric	varchar	20	IC of vehicle owner's	9404222-14-6297
regNum	varchar	10	Vehicle registration number	AJR2233
vehType	varchar	20	Vehicle type	CAR
userType	varchar	20	Position of vehicle owner	student
faculty	varchar	10	Faculty of vehicle owner	FTMK

Table C: Data Dictionary (saman)

Field Name	Data Type	Field Size	Description	Example
tmpID	int	3	Temporary ID for summons	1
sumID	varchar	20	Summons ID	SS002804
regnum	varchar	10	Vehicle registration number	AJR2233
kesalahan	varchar	20	User's offense	Parking
Tindakan	varchar	20	Summons action	saman
Datetime	varchar	30	datetime	2016/04/22 17:20:00
Status	int	1	Payment status	2
Price	varchar	20	Summons price	RM20.00
url	varchar	50	URL for picture	../controller/upload/img.png

1.2 Test Description

Table D: Test Description

Test Case ID	Functional Requirement	Test Case Title	Description	Expected Result
B001	Login (web)	Login without username and password	Test to login into system without username and password	Display “Sila isikan username dan password ”
B002		Login without username	Test to login into system without username	Display “Sila isikan username anda”

B003		Login without password	Test to login into system without password	Display “Sila isikan password anda”
B004		Login using invalid username and password	Test to login into system using invalid username and password	Display “Username dan Password anda tidak sah”
B005		Login using invalid username	Test to login into system using invalid username	Display “Username dan Password anda tidak sah”
B006		Login using invalid password	Test to login into system using invalid password	Display “Username dan Password anda tidak sah”

V001	Register auxiliary police	Register without fill “nama” form	Test to register without fill “nama” form	Display “Sila isi nama anda”
V002		Register without fill “username” form	Test to register without fill “username” form	Display “Sila isi username anda”
V003		Register without fill “password” form	Test to register without fill “password” form	Display “Sila isi password anda”
V004		Register without fill “mengesahkan kata laluan” form	Test to register without fill “mengesahkan kata laluan” form	Display “Sila pastikan katalaluan anda sama dengan pengesahan katalaluan anda ”
V005		Register without fill “email” form	Test to register without fill “email” form	Display “Sila isikan email anda”
V006		Register without fill “nombor telefon” form	Test to register without fill “nombor telefon” form	Display “Sila isikan nombor telefon anda”

M001	Register vehicle for student and staff	Register without fill “No. matrik/Staff”	Test to register without fill “No matril/Staff”	Display “Sila isikan no id anda”
M002		Register without fill “nama” form	Test to register without fill “nama” form	Display “Sila isikan nama anda”
M003		Register without fill “NRIC” form	Test to register without fill “NRIC” form	Display “Sila isikan NRIC anda”
M004		Register without Select “Jenis kenderaan” form	Test to register without select “Jenis kenderaan” form	Display “Sila pilih jenis kenderaan anda”
M005		Register without Select “Jawatan” form	Test to register without select “Jawatan” form	Display “Sila pilih jawatan anda”
M006		Register without fill “No kenderaan” form	Test to register without fill “No kenderaan” form	Display “Sila isikan no kenderaan anda”

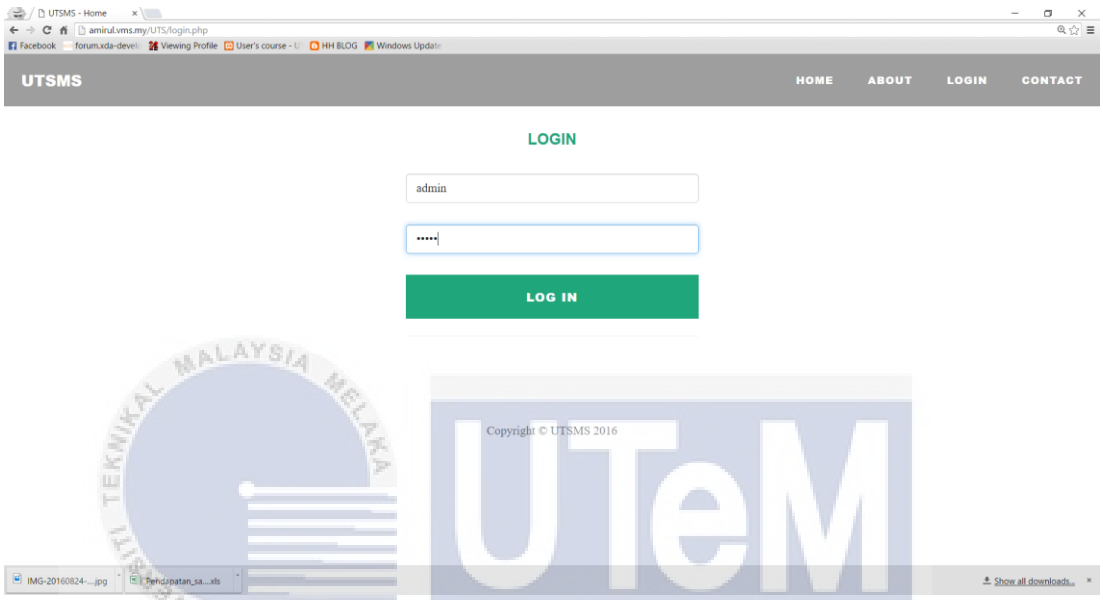
M007		Register without Select “Fakulti” form	Test to register without select “Fakulti” form	Display “Sila pilih fakulti anda”
A011	Summons Check	Check summons without fill Matrik/Staff No.	Test to check summons without fill matrik/staff no.	Display “No matrik/staff anda tidak sah”
A012		Check summons with invalid no. staff/matrik	Test to summons with invalid no matrik/staff	Display “No matrik/staff anda tidak sah”

A021	Login(Application)	Login with username and password is empty	Test to login without username and password	Display "Login tidak berjaya"
A022	Issuing Summons	Issuing summons without fill all form	Test to issuing summons without fill all form	Display "Sila isikan keterangan anda"
A023		Issuing summons without take a picture	Test to issuing summons without take a picture	Display "Sila ambil gambar sebelum isi keterangan"

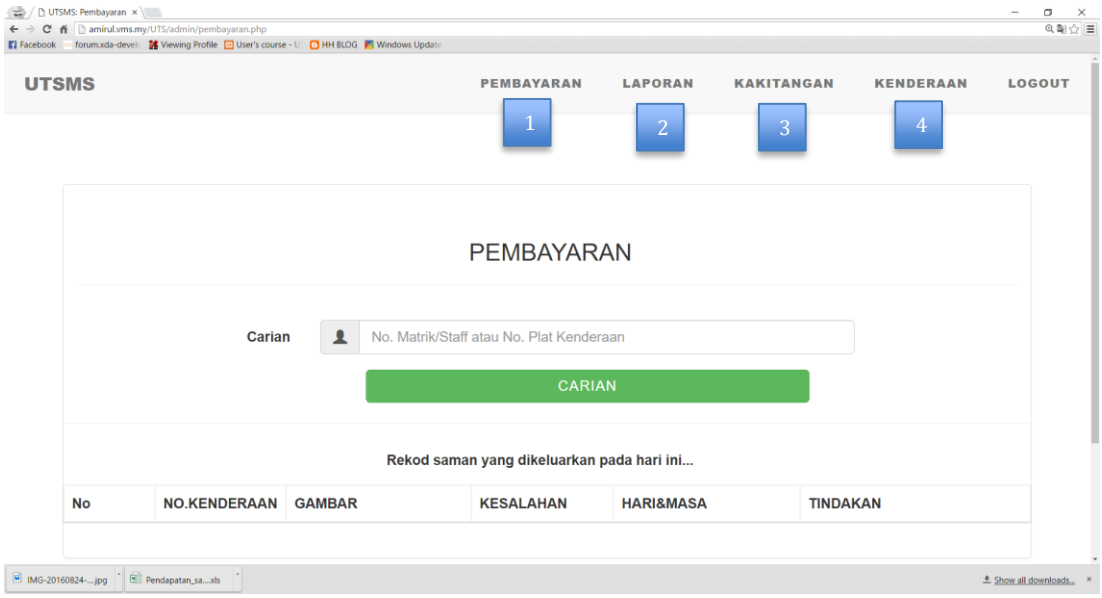
APPENDIX B

1.1 User Manual

I. Admin

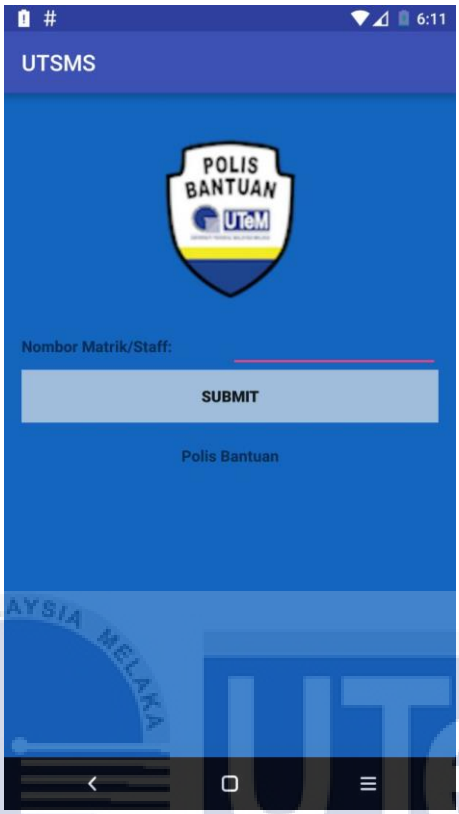


Click "LOG IN" button after fill username and password to access on admin page.

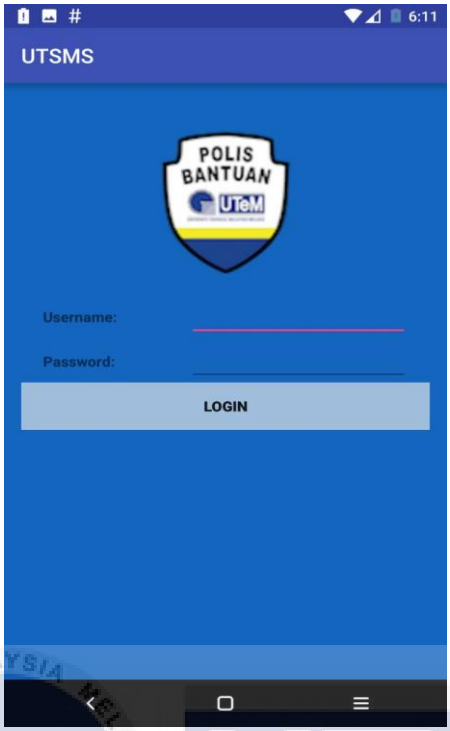


1. Click on “Pembayaran” for do a payment process.
2. Click on “Laporan” for summons report.
3. Click on “Kakitangan” for auxiliary police registration.
4. Click on “Kenderaan” for vehicle registration.

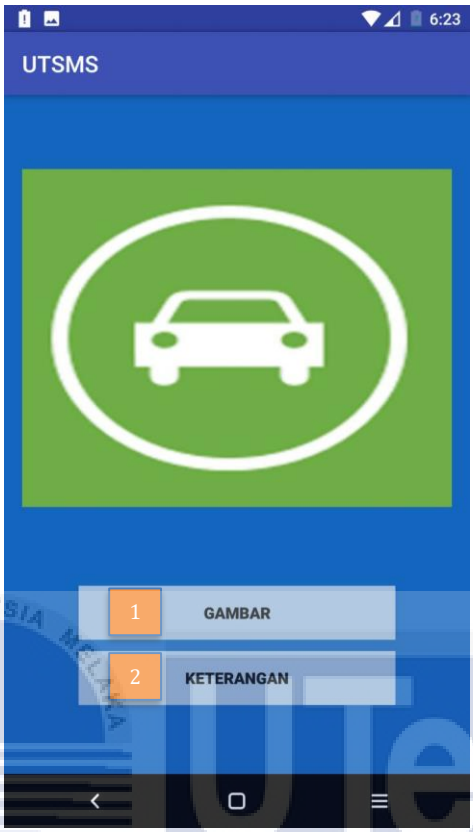
II. Auxiliary police



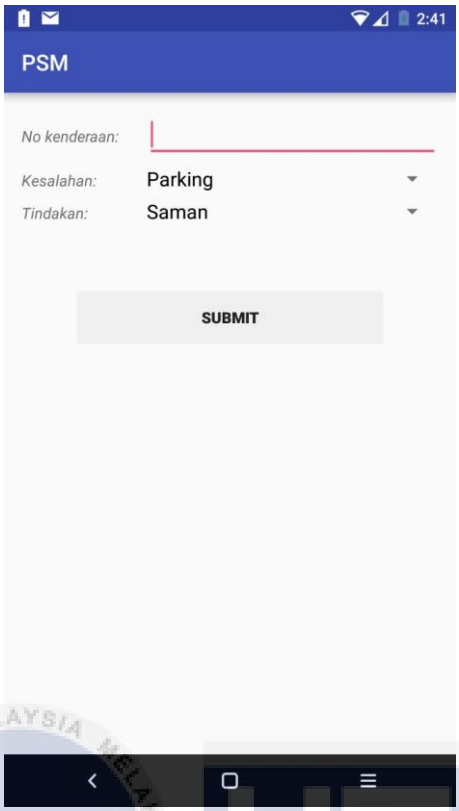
- Click on “Polis Bantuan” to access as an auxiliary police.



- After fill username and password click on LOGIN button to access on this application system.



1. Click on “GAMBAR” button to take a picture of vehicle that violate the rules as an evidence.
2. After take a picture, click on “KETERANGAN” button to fill the details of summons.



- Click submit button after fill all the details to issued summons.

III. Student/Staff

- Key in matric/staff number and click the submit button.