

MOBILE-WEB GATEWAY FOR AUTOMOTIVE DETAILING SME'S (AD-Gate) BASED ON FIKRI DETAILING CAR CARE N BEAUTY CASE STUDY



UNIVERSITI TEKNIKAL MALAYSIA MELAKA

BORANG PENGESAHAN STATUS TESIS

JUDUL: MOBILE-WEB GATEWAY FOR AUTOMOTIVE DETAILING SME'S
(AD-Gate) BASED ON FIKRI DETAILING CAR CARE N BEAUTY CASE STUDY
SESI PENGAJIAN: 2013/2014

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UNIVERSITI TEKNIKAL MALAYSIA MELAKA

**MOBILE-WEB GATEWAY FOR AUTOMOTIVE DETAILING SME'S (AD-
Gate) BASED ON FIKRI DETAILING CAR CARE N BEAUTY CASE STUDY**

AAININA FARHAINN BINTI YUSOFF



**This report is submitted in partial fulfillment of the requirements for the Bachelor
of Computer Science (Database Management)**

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2016**

DECLARATION

I hereby declare that this project report entitled
**MOBILE-WEB GATEWAY FOR AUTOMOTIVE DETAILING SME'S (AD-
Gate) BASED ON FIKRI DETAILING CAR CARE N BEAUTY CASE STUDY**
is written by me and is my own effort and that no part has been plagiarized

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STUDENT:

Date: 06/01/2017

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I hereby declare that I have read this project report and found
this project report is sufficient in term of the scope and quality for the award of
Bachelor of Computer Science (Database Management) With Honors.

SUPERVISOR:

Date: 06/01/2017

(AMIR SYARIFUDDIN KASIM)

DEDICATION

There are a number of people without whom this thesis might not have been written.

I dedicated this thesis for who I greatly appreciated.

To my beloved parents, Adauyah and Yusoff, who always support me through my upside down life as a student. People who has been an inspiration and source of encouragement to me throughout my life.

To Fikri Detailing Car Care N Beauty, who always give me inspiration on all the things that need to be done. Thanks for give me an opportunity to complete my Final Year

Report by given me maximum cooperation. Thank you.

Last but not least, thanks to my family and friends, a person who see my potential as a great trustworthy and reliable student which develop me from nothing to something. I dedicated for you guys because you are one of the people who inspired me the most.

ACKNOWLEDGEMENTS

Alhamdulillah, all praises to Allah for the strengths and His blessing in completing this project. I really grateful because managed to complete this final year project although I slightly miss much of the time given.

I would like to express my gratitude and appreciation to all who gave me the responsibility to complete this report. A big thank you to my supervisor,

Mr. Amir Syarifuddin Kasim

in giving suggestions and encouragement throughout my project especially in development of the system. He gives me a lot of encouragement and thank you.

Last but not least, thanks to people who help me directly or indirectly for the support and guidance given to improve the report produced and give more confidence in presentation skills by the comments and tips.

ABSTRACT

This report describes the activities that I have done throughout 1 semester doing “Projek Sarjana Muda 2” during this one semester at the University Technical Malaysia Melaka (UTeM). In this report it will describes in detail about how the AD-Gate system is developed and what steps are being taken to ensure the system is running as planned.

In this report there is a chapter in which the Introduction of this chapter will explain about problems that occur, a bit about the background of the company "Fikri Detailing Car Care N Beauty" and also the main objective of this system is developed. In addition, other chapters such as methods and planning, analysis, design, implementation and testing will be described in detail through reports provided. The last chapter is a conclusion where in this chapter, will be described on the overall conclusion when making other chapters.

ABSTRAK

Laporan ini menerangkan tentang aktiviti yang saya lakukan sepanjang menjalani tempoh Projek Sarjana Muda selama 1 semester di Universiti Malaysia Melaka (UTeM). Di dalam laporan ini menerangkan secara terperinci tentang bagaimana sistem AD-Gate ini dibangunkan serta apa langkah-langkah yang diambil untuk memastikan sistem ini berjalan seperti yang dirancang.

Di dalam laporan ini terdapat bab pengenalan di mana bab ini akan menerangkan tentang permasalahan yang berlaku, serba sedikit tentang latar belakang syarikat “Fikri Detailing Car Care N Beauty” dan juga objektif utama sistem ini dibangunkan. Selain itu, bab-bab yang lain seperti kaedah dan perancangan, analisis, reka bentuk, pelaksanaan dan ujian akan diterangkan dengan lebih mendalam menerusi laporan yang disediakan. Bab yang terakhir ialah konklusi di mana dalam bab ini, akan diterangkan tentang konklusi secara menyeluruh apabila membuat bab-bab yang lain.

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LIST OF ABBREVIATIONS

DBMS	-	Database management system
DCL	-	Digital common language
DDL	-	Data definition language
DML	-	Data Manipulation Language
GUI	-	Graphical user interface
ID	-	Identity
PSM	-	Projek Sarjana Muda
SDLC	-	System development life cycle
SQL	-	Structured Query Language

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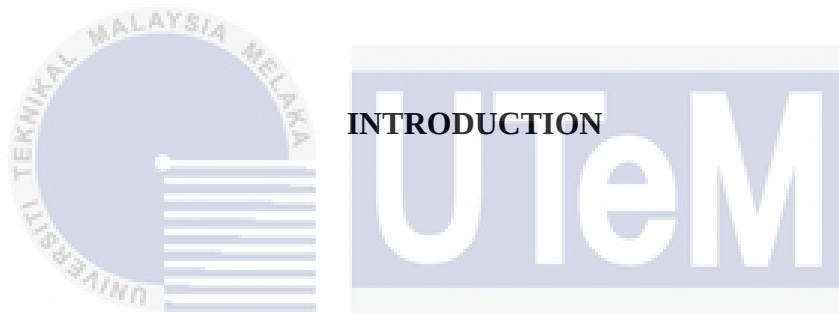




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CHAPTER I



INTRODUCTION

1.1 Project background

Fikri Detailing Car Care N Beauty (FDCCB) is very new in market, yet well-known company with a good services provided to the customer. Unfortunately, the management of this company is written in a book where the risk of data loss increases.

A proposed system plan, Mobile-web Gateway for Automotive Detailing SME's (AD-Gate) it's a portal that will help to reduce the data loss. With this system, user(Owner, Supervisor and Staff) can filling out all the necessary details required. This system not only systematic, it is also much secured in term of low risk for loss of data and prevention from unauthorized access into system. Other than management, this system also contributes to nature by promoting paperless environment due to its digitalized design, which means that most of its operation medium is via computer.

AD-Gate is a system which is helpful for carwash owner where it can monitor daily sales, update monthly salary, view monthly salary and also manage staff. Besides that, the supervisor of the company also has special featured where it can monitor daily attendance of the staff. Supervisor and staff also can monitor daily sales as it will the daily process of services goes smoothly without any data redundant. The most important thing that this system can operate using smartphone. Hence, AD-Gate system is to make user daily work routine easier.

1.2 Problem statements

- 1) Inefficient usage of Human Resource and non-systematic data management.
- 2) Current data management is prone to human-caused error or mistakes in calculate daily sales, reporting and monthly salary.
- 3) Basically, most of the staff of a car detailing company have a low level of IT literacy.
- 4) There is no portal that provides a management information service for this sector.

1.3 Objective

- 1) To create a web-based portal in providing a management information service for this sector.
- 2) To provide a system that is user-friendly suitable for the targeted audience.
- 3) To develop a solution that is systematic and efficient in terms of time, redundancy control and error control.

1.4 Project Scope

Below are the scopes for Mobile-web Gateway for Automotive Detailing SME's (AD-Gate). There are three (3) parts of the scope which are user, module and location.

1.4.1 User

1) Admin

Admin is a user who has the full privilege in the system. Admin can create Employee (owner) and decide what privilege is suitable with the new user.

2) Employee (owner)

Owner is a user that creates by user admin and has its own privilege compared to supervisor and staff for the system.

3) Employee (supervisor)

Supervisor is a user that creates by user owner and does not have the full privilege of the system.

4) Employee(staff)

Staff is a user that creates by user owner and does not have the full privilege of the system.

1.4.2 Module

- Login
- Owner's information
Data of owner that insert by admin
 - Retrieve owner data.
- Employee's information
Data of employees that insert by the owner
 - Add employee data.
Owner can add employee's data in database using system.
 - Update employee data.
Owner can update employee's data in database using system.
 - Search employee data
Owner can search employee's data.
- Sale's management
Daily sales data that are insert by the user.
 - Add daily sale's data.
User can add daily sales in database using system.
 - Update daily sale's data
User can update daily sales in database using system.
 - Search daily sale's data.
User can search daily sale's data.
- Generate report

- Daily or monthly sales

Generate report regarding daily or monthly data on how much money do the company earned.

- Salary pay slip

Generate report regarding salary data on how much does the employee earned monthly.

- Customer management

Data of customers that insert by the employee(owner and supervisor)

- Add customer data.

Employee can add customer's data in database using system.

- Update customer data.

Employee can update customer's data in database using system.

- Search customer data

Employee can search customer's data.

- Service management

Data of service's that insert by the employee (owner and supervisor)

- Add service data.

Employee can add service's data in database using system.

- Update service data.

Employee can update service's data in database using system.

- Search service data

Employee can search service's data.

- Customer management

Data of customers that insert by the employee (owner and supervisor)

- Add customer data.

Employee can add customer's data in database using system.

- Update customer data.

Employee can update customer's data in database using system.

- Search customer data

Employee can search customer's data.

- Attendance management

Data of attendance's that insert by the employee (supervisor)

- Add attendance data.

Employee can add attendance's data in database using system.

- Update attendance data.

Employee can update attendance's data in database using system.

- Search attendance data

Employee can search attendance's data.

1.4.3 Location

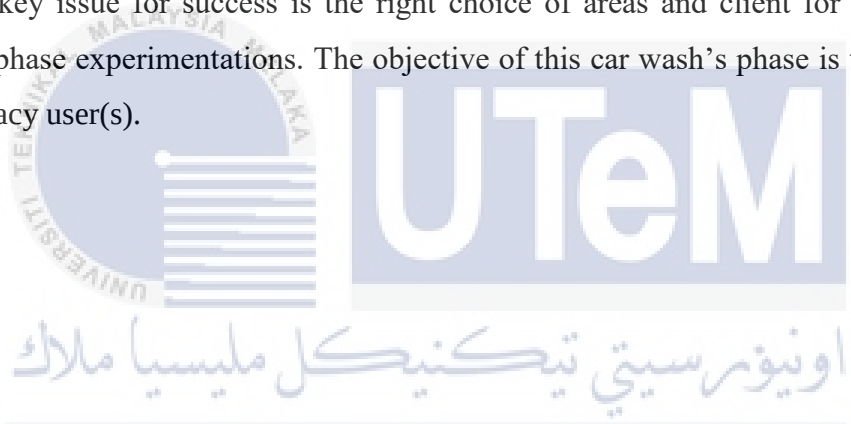
Specific for Fikri Detailing Car Care N Beauty.

1.5 Project significance

The aim of this project is to build an effective and efficient system for the management to manage and understand the system when data is recorded the separation of control data and prevent data loss. The planned system will enable the owner to improve their productivity, the sale and their conditions. The system includes:

- 1) A car wash management workspace.
- 2) Other services which will be provided on demand based on the needs expressed by the beneficiaries.
- 3) A web-based and smart phone-based platform solution(s).

A key issue for success is the right choice of areas and client for the car wash's owner phase experimentations. The objective of this car wash's phase is to ease the low IT literacy user(s).



1.6 Expected Output

- 1) AD-Gate is portal system.
- 2) AD-Gate is for multi-company with the same nature.

1.7 Conclusion

In conclusion, AD-Gate system will be very useful system for the owner of a car wash whether the company already have their own business or wanted to start up a car wash business as it will be convenient for a busy daily routine which the user can key-in all the necessary data by using smart phone with one click.



CHAPTER II



2.1 Introduction

This chapter will cover the details explanation of methodology that is being used to make this project complete and working well. Many methodology or findings from this field mainly generated into journal for others to take advantages and improve as upcoming studies. The method is use to achieve the objective of the project that will accomplish a perfect result. In order to evaluate this project, the methodology based on System Development Life Cycle (SDLC).

2.2 Database Development Methodology

For this system, Agile development methodology is being used as a System Development Life Cycle (SDLC) approach. According to Essentials of Software Engineering Third Edition (2014), agile development methods hold the potential promise to develop software in smaller iterations, guaranteeing there is a finished product at all times, and demanding only normal effort from their developers. Agile methods are extremely good at dealing with change, which means requirements do not need to be completely specified from the beginning. While most of the success stories come from small-to medium-sized software projects, we believe that many parts of the Agile methodologies and processes hold high potential for large projects as well. Besides that, the Manifesto for Agile software development (2001) shows the emphasis that Agile places on value. The book also said that Agile method allows working software is delivered much more quickly and successive iterations can be delivered frequently at a consistent pace. Plus, a change to requirements can be incorporated at any point of the process even though the process is late in development.

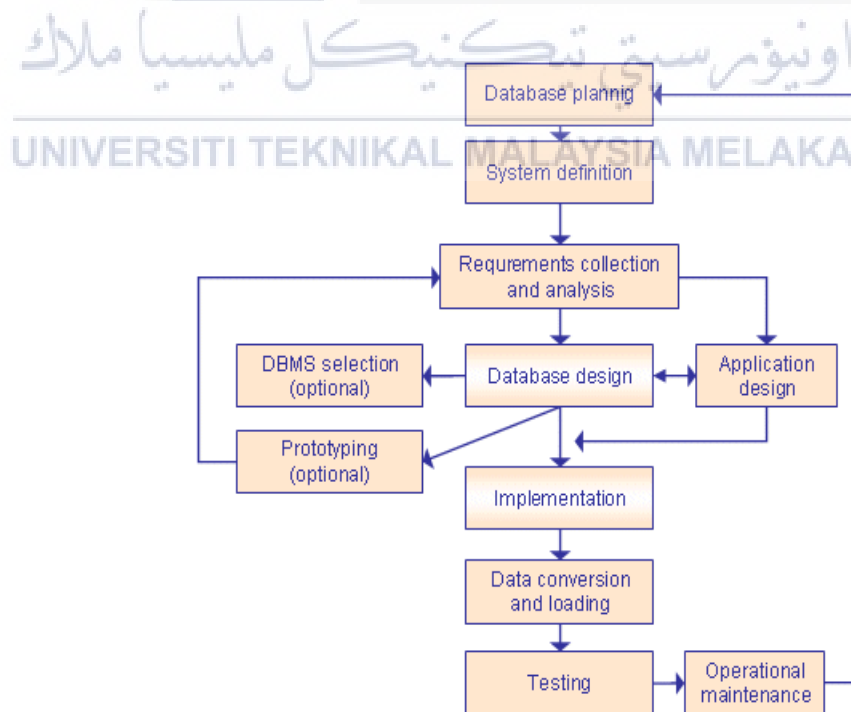


Figure 2.1 Database Methodology on DBLC

2.2.1 Database planning

The database planning includes the activities that allow the stages of the database system development lifecycle to be realized as efficiently and effectively as possible. This phase must be integrated with the overall Information System strategy of the organization.

The very first step in database planning is to define the mission statement and objectives for the database system.

2.2.2 System Definition

In the systems definition phase, the scope and boundaries of the database application are described. The major user views are also described.

2.2.3 Requirement Collection and Analysis

During the requirements collection and analysis phase, the collection and analysis of the information about the part of the enterprise to be served by the database are completed.

2.2.4 Database Design

In the conceptual database design phase, the model of the data to be used independent of all physical considerations is to be constructed. The model is based on the requirements specification of the system. In the logical database design phase, the model of the data to be used is based on a specific data model, but independent of a

particular database management system is constructed. This is based on the target data model for the database e.g relational data model. In the physical database design phase, the description of the implementation of the database on secondary stage is created. The base relations, indexes, integrity constraints, security, etc. are defined using SQL language.

2.2.5 Database Management System Selection

This is an optional phase, when there is a need for a new database management system (DBMS), this phase is done. DBMS means a database system like Access, SQL Server, MySQL, Oracle. In this phase the criteria for the new DBMS are defined. Then several products are evaluated according to the criteria. Finally. The recommendation for the selection is decided.

2.2.6 Application Design

In the application design phase, the design of the user interface and the application programs that use and process the database are defined and designed.

2.2.7 Prototyping

The purpose of a prototype is to allow the users to use the prototype to identify the features of the system using the computer.

2.2.8 Implementation

During the implementation phase, the physical realizations of the database and application designs are to be done. This is the programming phase of the systems development.

2.2.9 Data Conversion and Loading

This phase is needed when a new database is replacing an old system. During this phase the existing data will be transferred into the new database.

2.2.10 Testing

Before the new system is going to live, it should be thoroughly tested. The goal of testing is to find errors. The goal is not to prove the software is working well.

2.2.11 Operational Maintenance

The operational maintenance is the process of monitoring and maintaining the database system. Monitoring means that the performance of the system is observed. If the performance of the system falls below an acceptable level, tuning or reorganization of the database may be required. Maintaining and upgrading the database system means that, when new requirements arise, the new development lifecycle will be done.

2.3 Project Schedule and Milestones

1 22-26 Feb	Proposal PSM : Submission & Presentation
	Proposal assessment and verification
2 29 Feb -4 Mar	Proposal Correction/Improvement
	Chapter 1
3 7-11 Mar	List of supervisor/title
	Chapter 1 (System Development Begins)
4 14-18 Mar	Chapter 1 & Chapter 2
5 21 - 25 Mar	Chapter 2
6 28 Mar -1 April	Chapter 2
	Chapter 3

	Student Status
7 4-8 April	Project Demo & Chapter 3 Chapter 4
8	MID SEMESTER BREAK
9 18-22 April	Project Demo & Chapter 4
10 25 - 29 April	Project Demo & Chapter 4 Student Status
11 2 - 6 May	Project Demo Determination of student status(Continue/Withdraw)
12 9 – 13 May	Project Demo & PSM Report
13 16 - 20 May	Project Demo & PSM Report Presentation Schedule

14 23 - 27 May	Project Demo & PSM Report
15 30 May -3 June	FINAL PRESENTATION (PA)
16 6 - 10 June	REVISION WEEK Correction draft report based on supervisor's and evaluator's comments during the final presentation session. Submission overall marks to PSM/PD committee.

2.4 Conclusion

As a conclusion, every project will have a different methodology that is being used to make the project successful and working well. Selecting System Development Life Cycle (SDLC) approach could be tricky if it is not suitable. Thus, this SDLC is the most suitable for my project as it has to be test out several times.

With appropriate steps and methodology, any process of completing the project can be managed wisely and will be make a good result.

CHAPTER III



3.1 Introduction

After planning phase is done, system analysis will take part for this project documentation. To proceed with this phase, interview technique and investigation technique be used in order to simplify work on identify required data.

For the interview technique, 3 workers with different position were questioned by questions like the complexity of the problem faced in the management of work processes, how to deal with customer, preparation of reports as well as a suggestions for repairing existing work processes.

While for the investigation technique also has studied the forms associated with the daily management of the company. As for the results, it would assist in the development of this system.

As for the analysis part, it will cover on problem and requirement analysis. Requirement analysis on this chapter will cover on data requirement, functional requirement, non-functional requirement and others. The purpose of this chapter is to identify the requirements for AD-Gate.

3.2 Problem analysis

After the interview session in Fikri Detailing Car Care N Beauty takes place, there was no system has ever developed and only manual system management is being used on daily work.

a) Interview technique

Questions stated during the interview session with owner, supervisor and staff are as the complexity of daily sales calculation, monthly sales calculation, yearly sales calculation, sales and salary report, staff management, customer management, service management and others concerned that is involved in management of the company.

As for the current Car Wash Management flow is using book for everyday sales, in which all the records will be stored. Other than that, this method is manually done by the employee for the company including the owner of the company, supervisor and staff. Therefore, it is a high risk for a data redundant. The current method flow will be explained according to the flow chart on the next page.

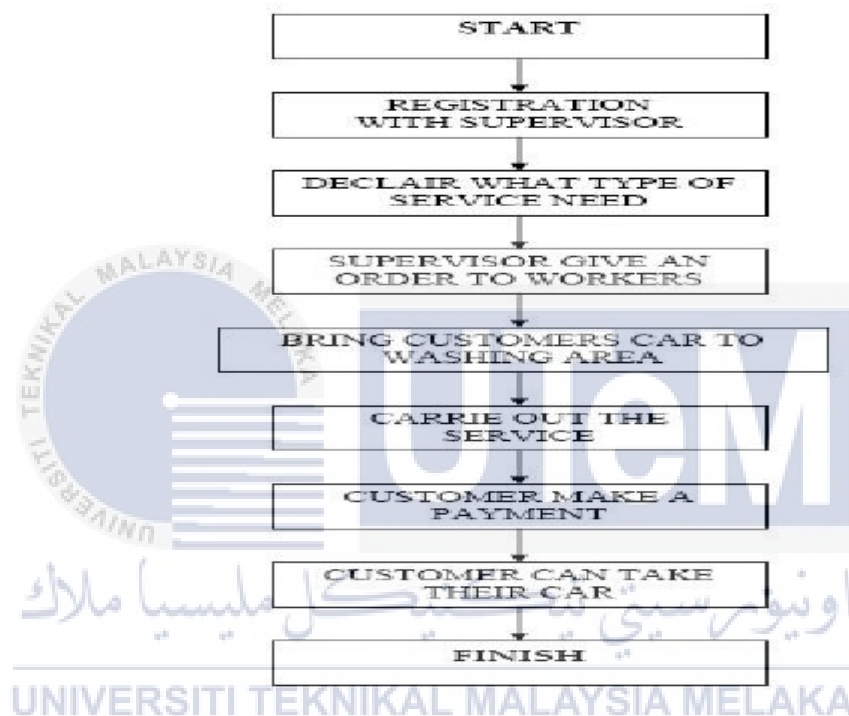


Figure 3.1: Current Method Flow

The flow chart as shown in the above figure describes how the current system flows in daily basis of the company. For every car that wants to make over their car, first thing first the customer has to register to the owner, supervisor and staff (worker). As for the registration, the worker will record the details of the car plate, time in for the car, type of car, services and the cash. All this is written manually by the workers.

There are several deficiencies for the current system as it is lack of efficiency in managing the data. Since the current system is done manually, there are some cases where their daily sale recorded in the book does not meet with the cash in hand. This is because all type of worker has the authority to update their book since it is done manually.

Other than that, this method the company use can make them loose the data easily where the book they use have a high risk of loss, destroy by any accident (fire, water etc.). Besides that, took many efforts if the company needs to compare with previous sales as the company needs to search one by one manually every book the company have. On the other hand, papers tend to rotten someday. So, the company might have the difficulty keep all the information for the long time.

b) Investigation technique

There is an analysis of the forms that company used. There are types of details required for the processes involved in the Appendix A.

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3.3 The proposed improvements/solutions

The proposed flow system for Car Wash Management System is AD-Gate where AD-Gate is divided into three users which is the owner of the company, supervisor and staff.

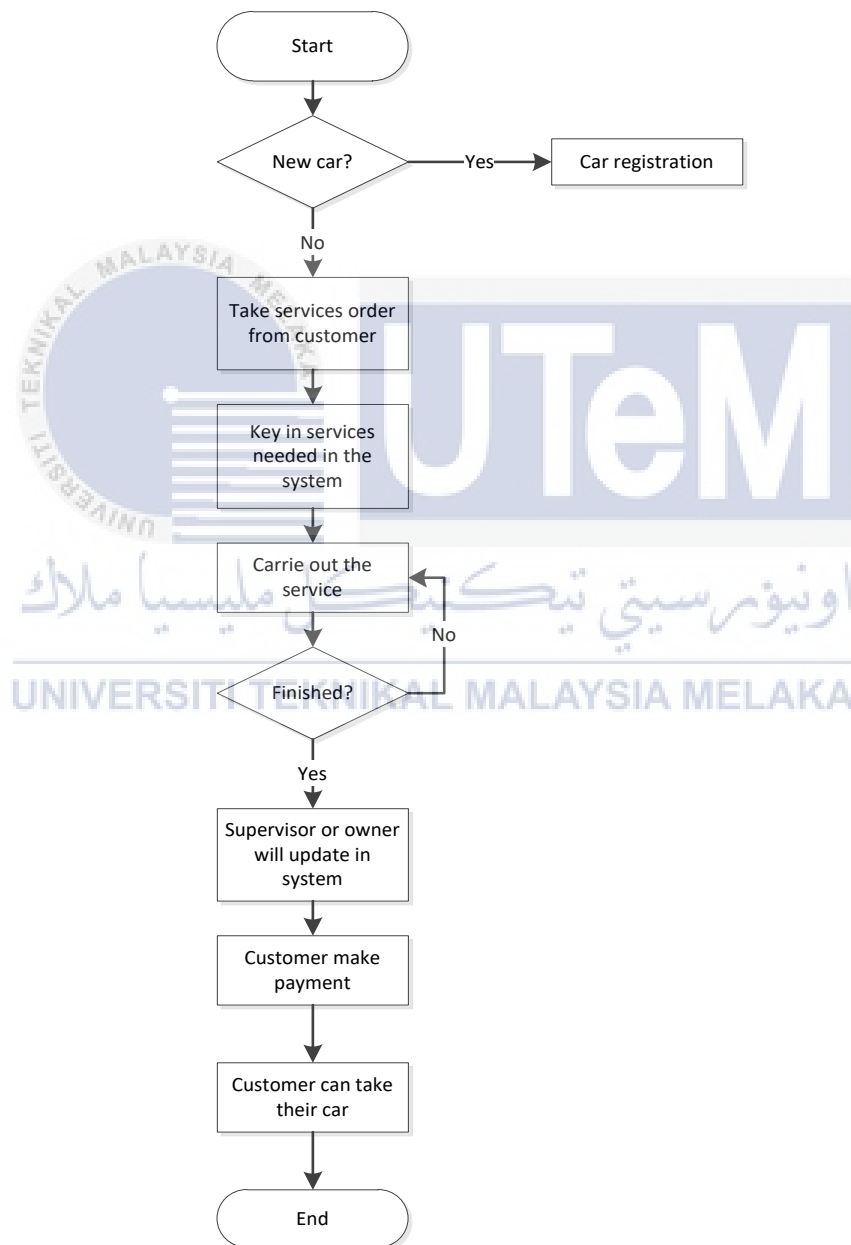
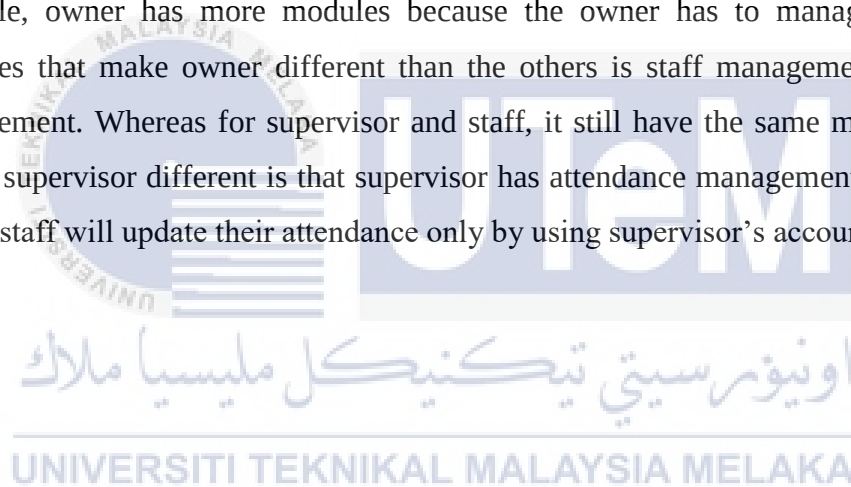


Figure 3.2 Proposed Method Flow

As for the authority, the owner of the company and supervisor has a bit special features compared to staff of the company. Staff still have the same function but what makes staff different from owner and supervisor is that staff does not have the authority to update or print the customer receipt. This is done by this way because to control the daily sales income. So that it won't be any data redundancies within the company. Besides that, it will lower the risk of daily sales amount and cash in hand that does not have the same amount.

This proposed system is tend to help the management of Car Wash company where it is also has different features for different position for the company. For example, owner has more modules because the owner has to manage as a whole. Modules that make owner different than the others is staff management and account management. Whereas for supervisor and staff, it still have the same module but what makes supervisor different is that supervisor has attendance management module where all the staff will update their attendance only by using supervisor's account.



3.4 Requirement analysis

Data requirement, functional requirement, non-functional requirement and other requirements will be cover in requirement analysis. Context diagram and data flow diagram of AD-Gate will be included in functional requirement. In non-functional requirement, there are 3 main topic will be discuss which are product requirements, organizational requirements and external requirements. Software requirement, hardware requirement and network requirement will be state in other requirements.

3.4.1 Data requirement

In this section, it will describe the data that requires to be used in the system. The attribute are the fields in the table. The data requirements of AD-Gate are described in more detail in the tables below. Other tables refer to Appendix B.

Table 3.1 Admin Table

Table name	Attribute name	Content	Type	Example
Admin	admin_id	Admin ID	Varchar(10)	AD001
	password	Admin Password	Varchar(10)	abc123
	admin_name	Admin name	Varchar(50)	Aainina
	admin_number	Admin phone number	Int(15)	0112717 4384

3.4.2 Functional requirement

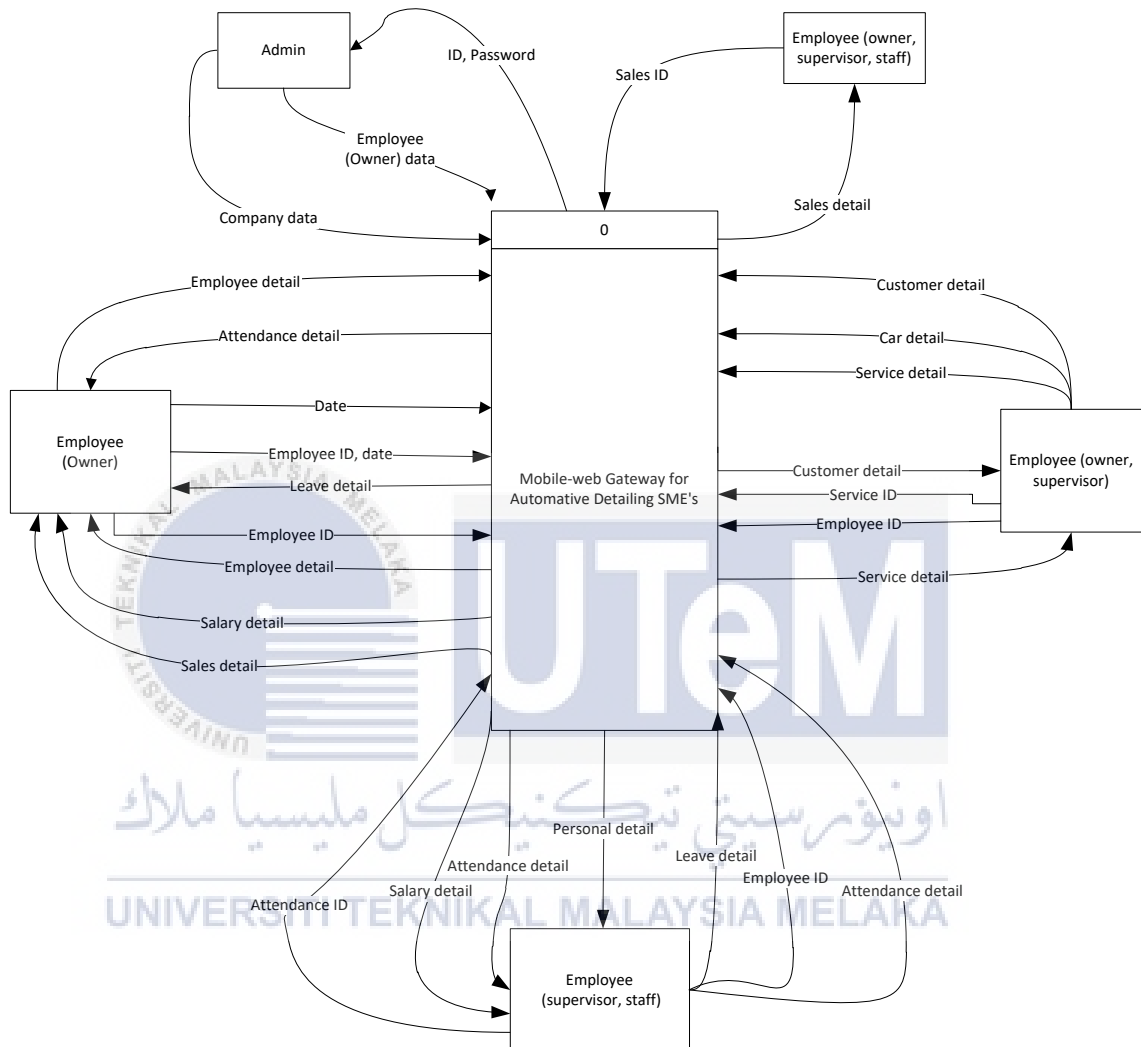


Figure 3.3: Context Diagram

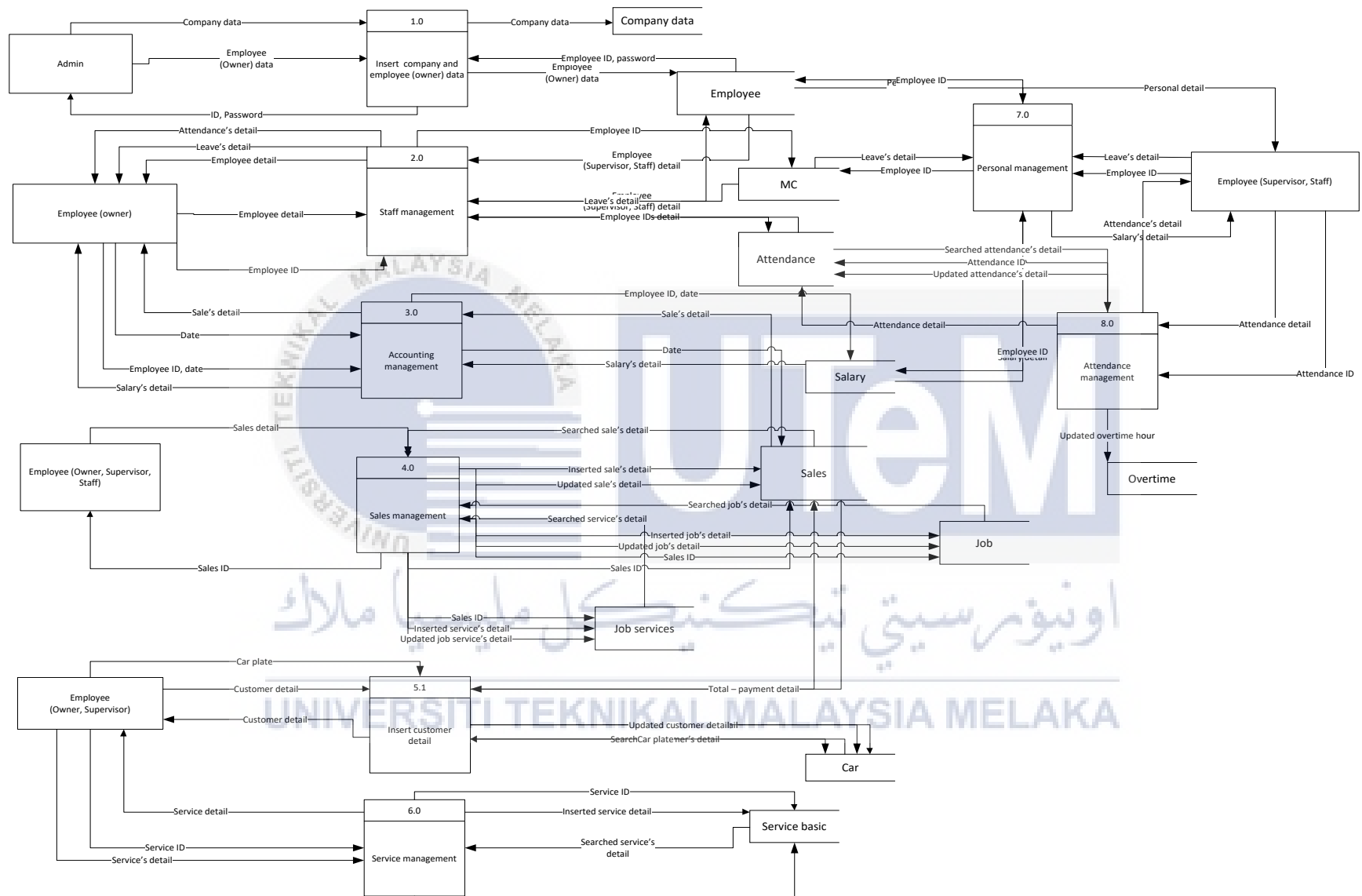


Figure 3.4: Data Flow Diagram Level (0)

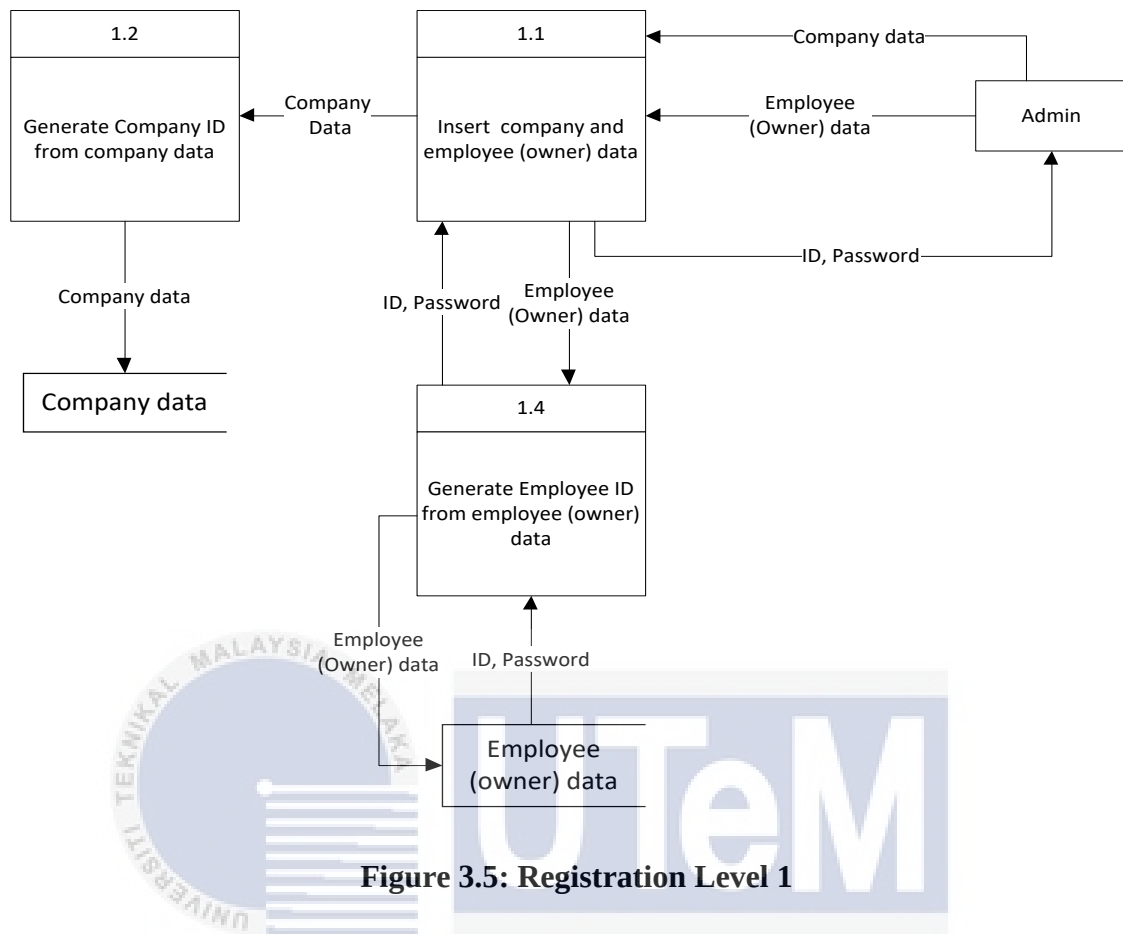


Figure 3.5: Registration Level 1

Process description/function

Process	Company registration
Purpose	Process for registration of a company
Definition	There are 2 sub process involved :- 1. Insert data This process involved inserting data of a company and the owner of the company. 2. Generate employee ID The generated ID will be given to owner of the company so that the owner can access the system.
Responsibility	Admin
How often	Depends on when the company register

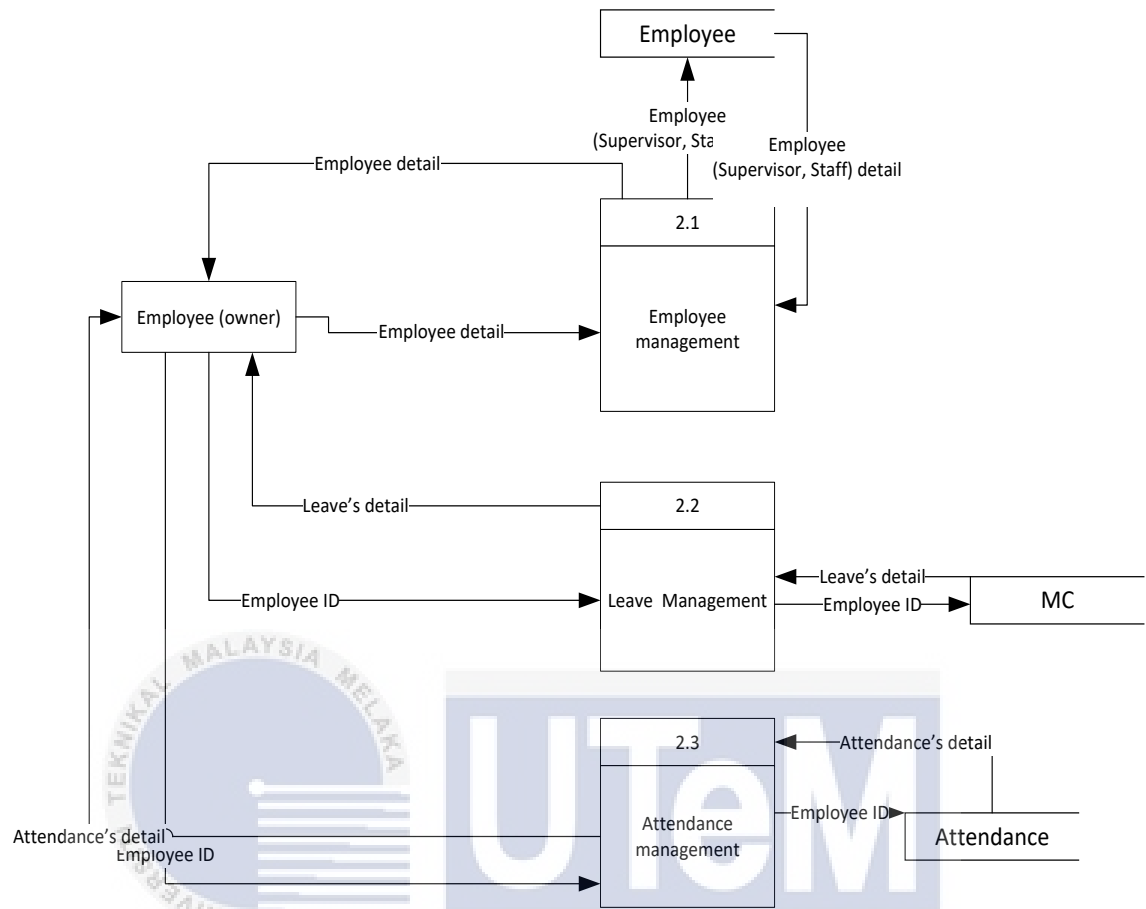


Figure 3.6: Staff Management Level 1

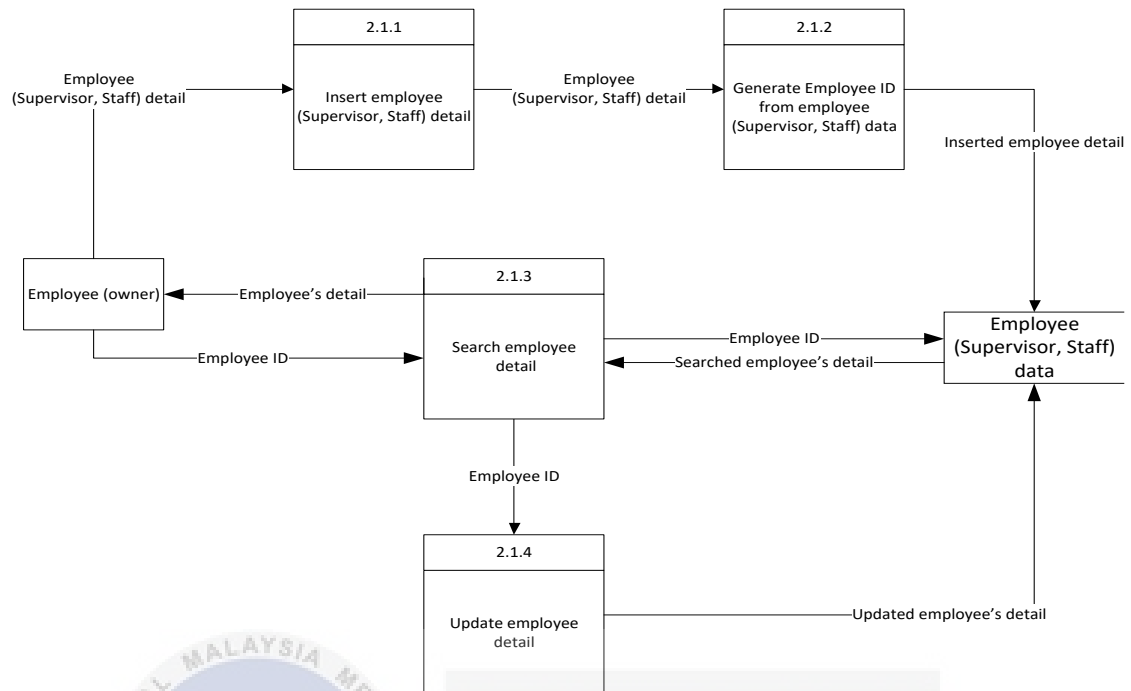


Figure 3.7: Staff Management Level 2 (Employee Management)

Process description/function

Process	Employee registration
Purpose	A process of registration of employee, search and update employee detail
Definition	There are 3 sub process involved :- 1. Insert data This process is to insert employee detail to database. 2. Search data This process is to search employee detail in database. 3. Update data This process is to update employee detail. This process only can be access by the owner.
Responsibility	Owner
How often	Depends

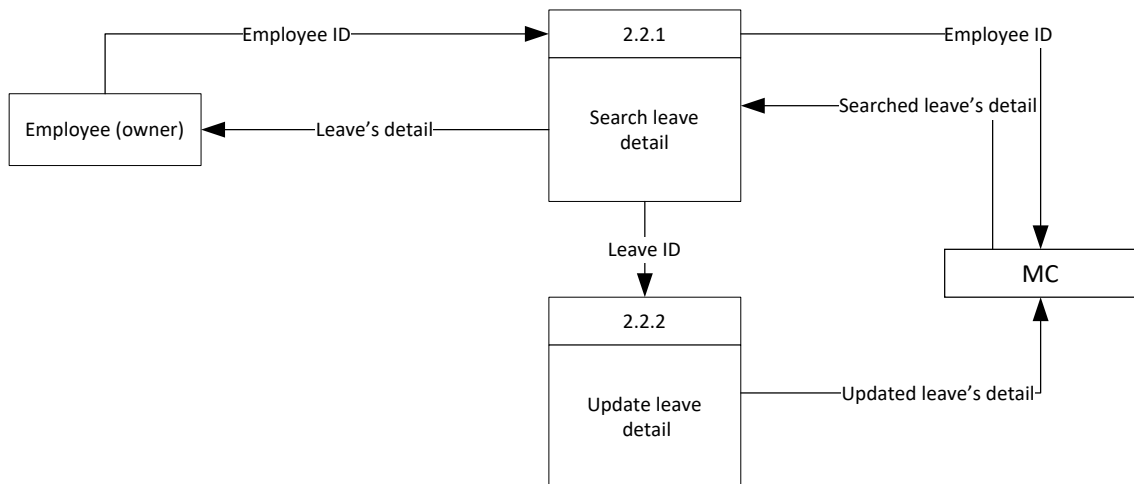


Figure 3.8: Staff Management Level 2 (Leave Management)

Process description/function

Process	Leave management
Purpose	A process of search employee leave's detail and update employee leave's status
Definition	There are 2 sub process involved :- 1. Search data This process is to search employee leave's detail in database. 2. Update data This process is to update employee leave's detail. This process only can be access by the owner.
Responsibility	Owner
How often	Depends

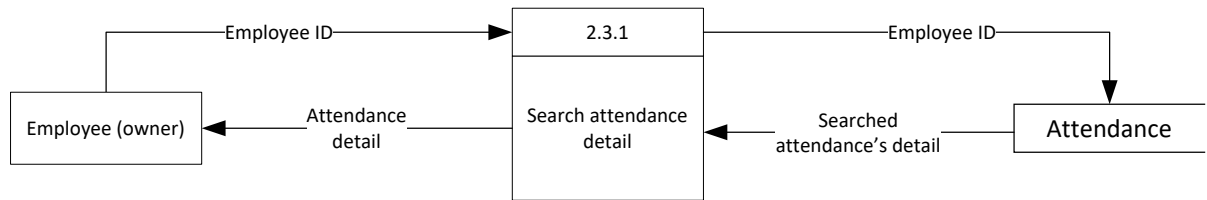


Figure 3.9: Staff Management Level 2 (Attendance Management)

Process description/function

Process	Attendance management
Purpose	A process for the owner to monitor employee attendance
Definition	There are only 1 sub process involved :- 1. Search data This process is to search employee attendance's detail in database. This process only can be access by the owner. Search data for viewing daily attendance.
Responsibility	Owner
How often	Everyday

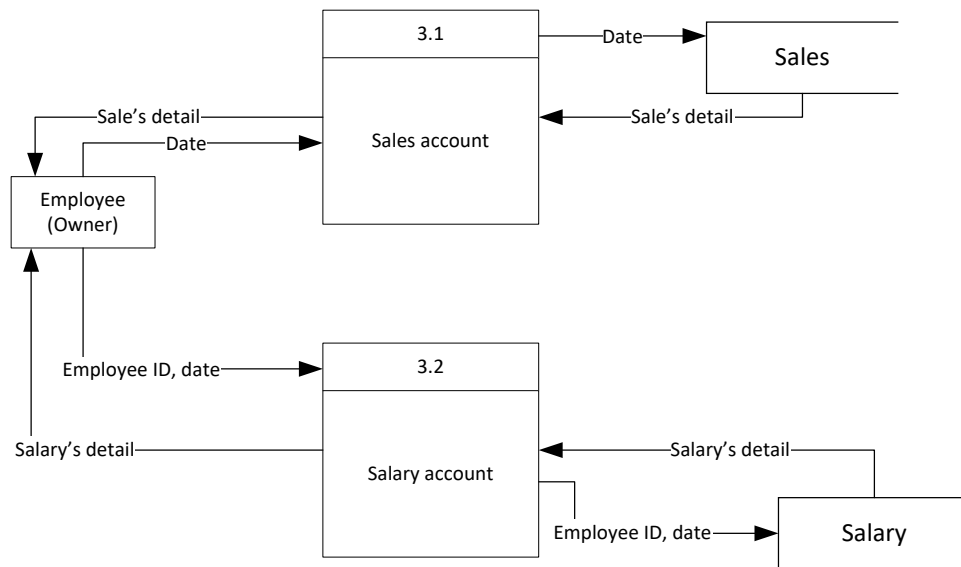


Figure 3.10: Account Management Level 1



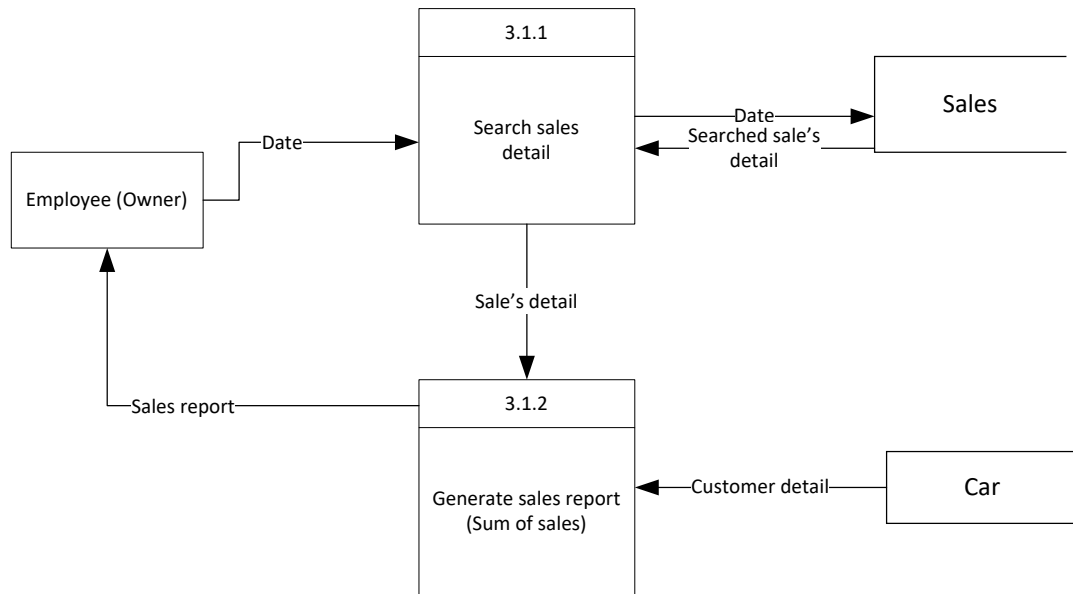


Figure 3.11: Account Management Level 2 (Sales Account)

Process description/function

Process	Sales report
Purpose	A process which can generate sales report
Definition	There are 2 sub process involved :- 1. Search sales detail This process is to search sales whether it is for daily, monthly or yearly detail in database. This process only can be access by the owner. 2. Generate sales report This process is to generate sum of sales whether it is for daily, monthly or yearly report.
Responsibility	Owner
How often	Depends

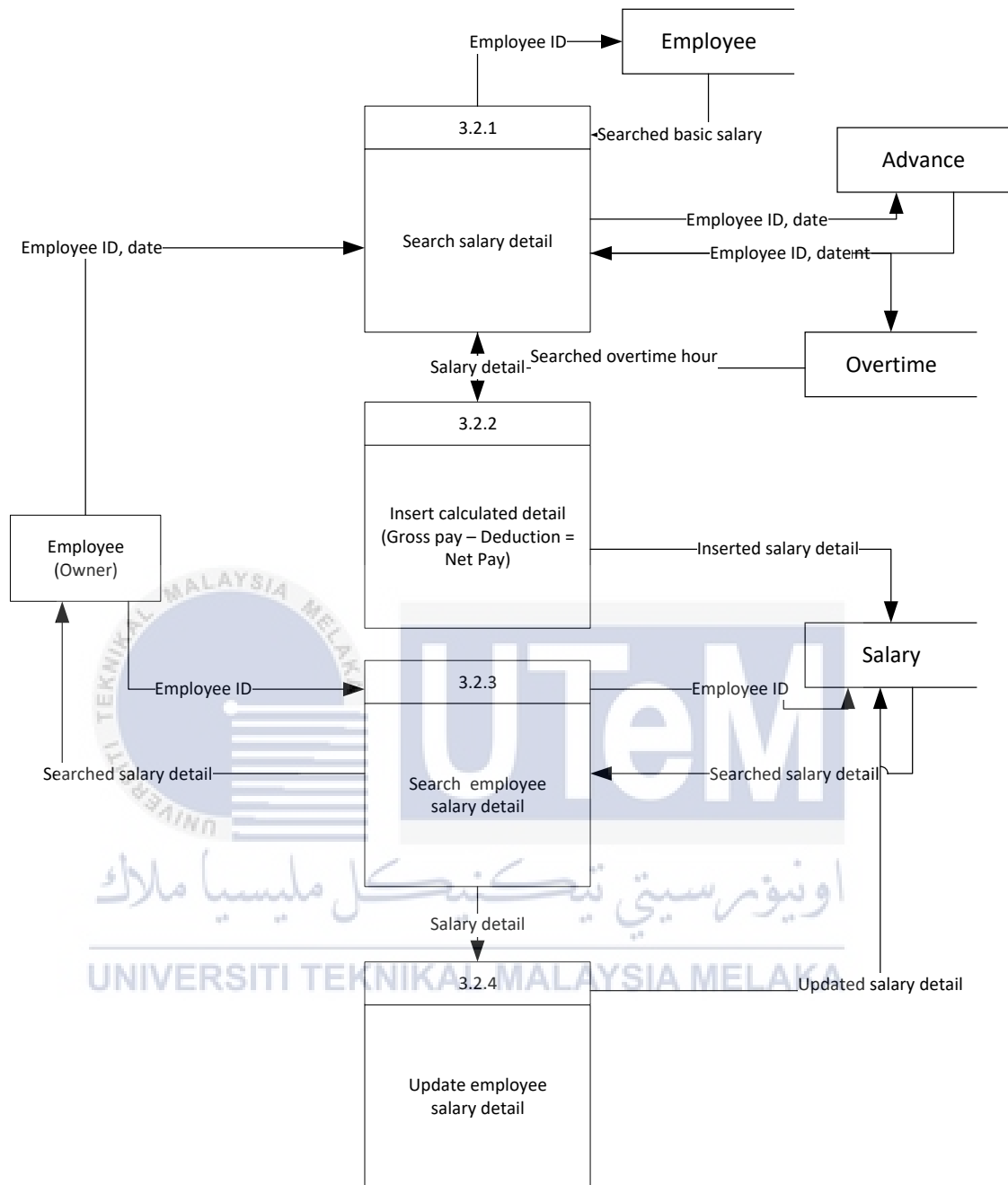


Figure 3.12: Account Management Level 2 (Salary Account)

Process description/function

Process	Salary report
Purpose	A process for search salary detail, insert salary detail and update salary detail
Definition	There are 3 sub process involved :- 1. Search data A process for retrieve all the data from different databases in order to insert salary detail 2. Insert data A process to insert salary detail into database and only owner has this authority. 3. Update data A process to update salary status whether it is paid or unpaid.
Responsibility	Owner
How often	Monthly

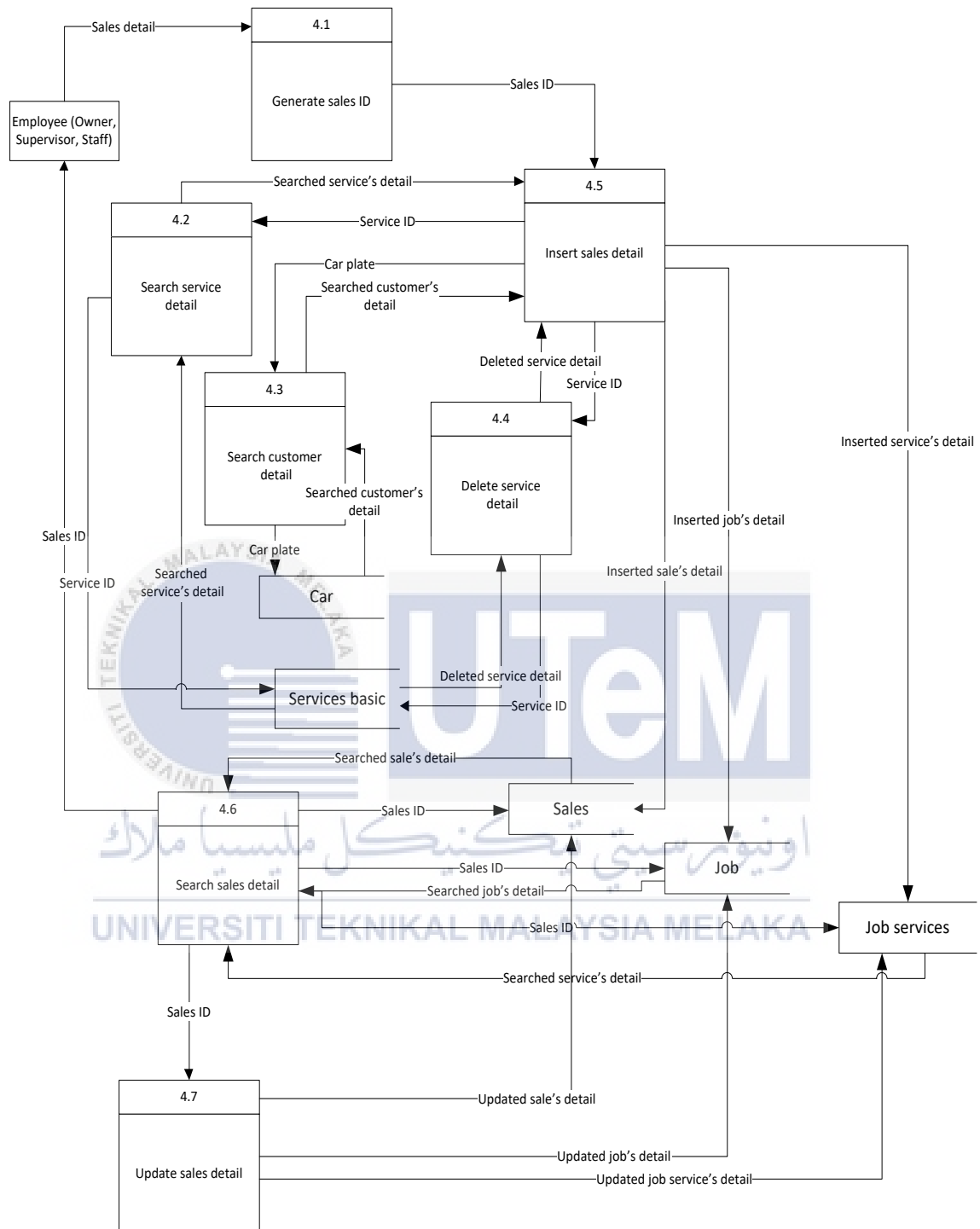


Figure 3.13: Sales Management Level 1

Process description/function

Process	Daily sales management
Purpose	A process that can insert daily sales, search data and update daily sales
Definition	There are 4 sub process involved :- 1. Generate data A process that will generate ID every time there is a new sales. 2. Search data A process that will search data from any other table in the database. 3. Delete data A process where it can delete data from database. 4. Update data Updating data process is a process where the information will be updated in the databases.
Responsibility	Owner, supervisor and staff
How often	Everyday

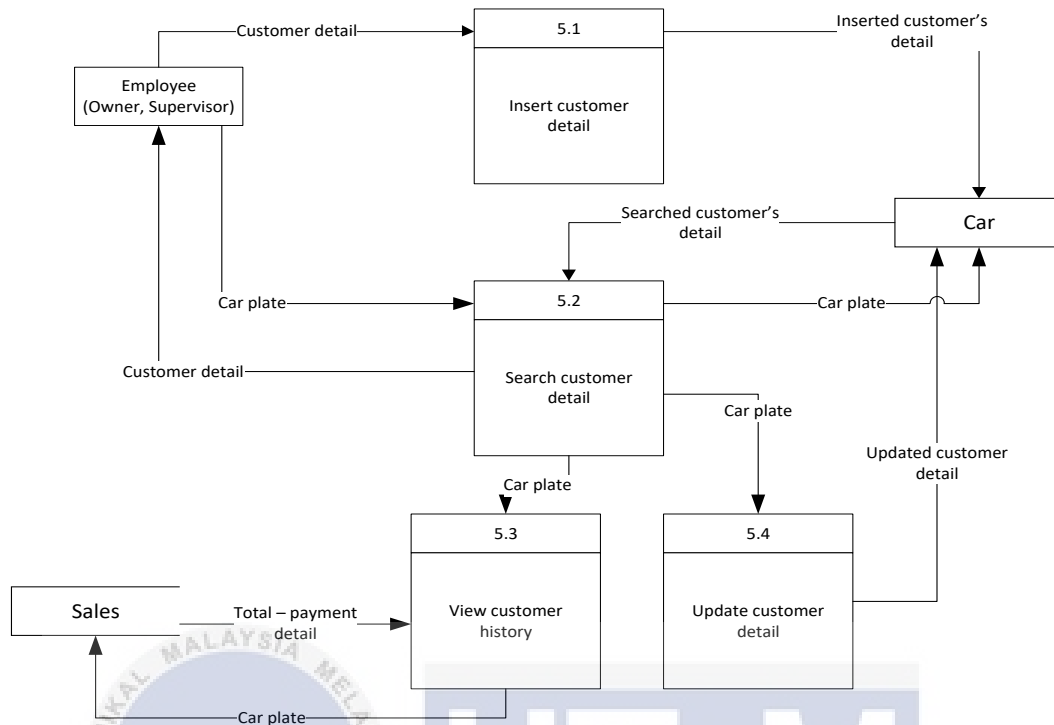


Figure 3.14: Customer Management Level 1

Process description/function

Process	Customer management
Purpose	A process to register a customer, search, update and view details
Definition	There are 4 sub process involve:- 1. Insert data A process for inserting customers details in database. 2. Search data A process to search customer details in database. 3. View data A process to view customer history based on tables in database. 4. Update data A process to update customer details in database.
Responsibility	Owner, supervisor
How often	Depends

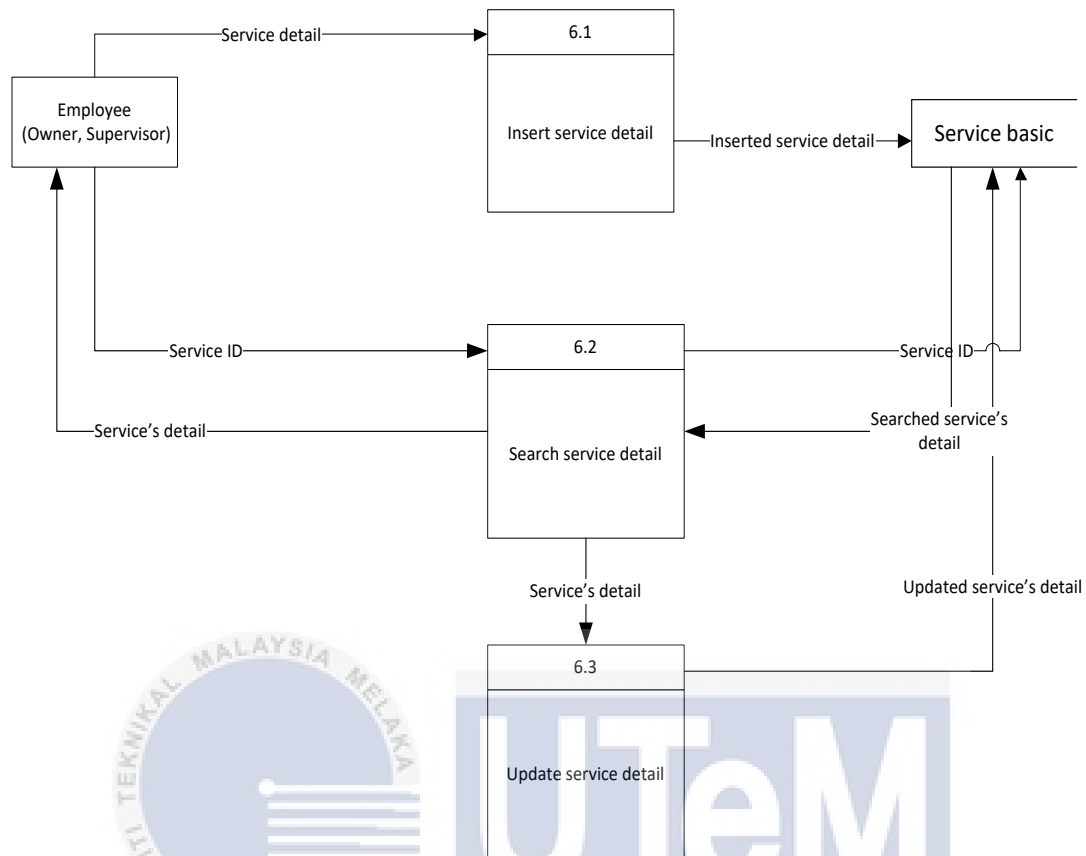


Figure 3.15: Service Management Level 1

Process description/function

Process	Service management
Purpose	A process to register a service, search and update details
Definition	There are 3 sub process involve:- 1. Insert data A process for inserting services details in database. 2. Search data A process to search services details in database. 3. Update data A process to update services details in database.
Responsibility	Owner, supervisor
How often	Depends

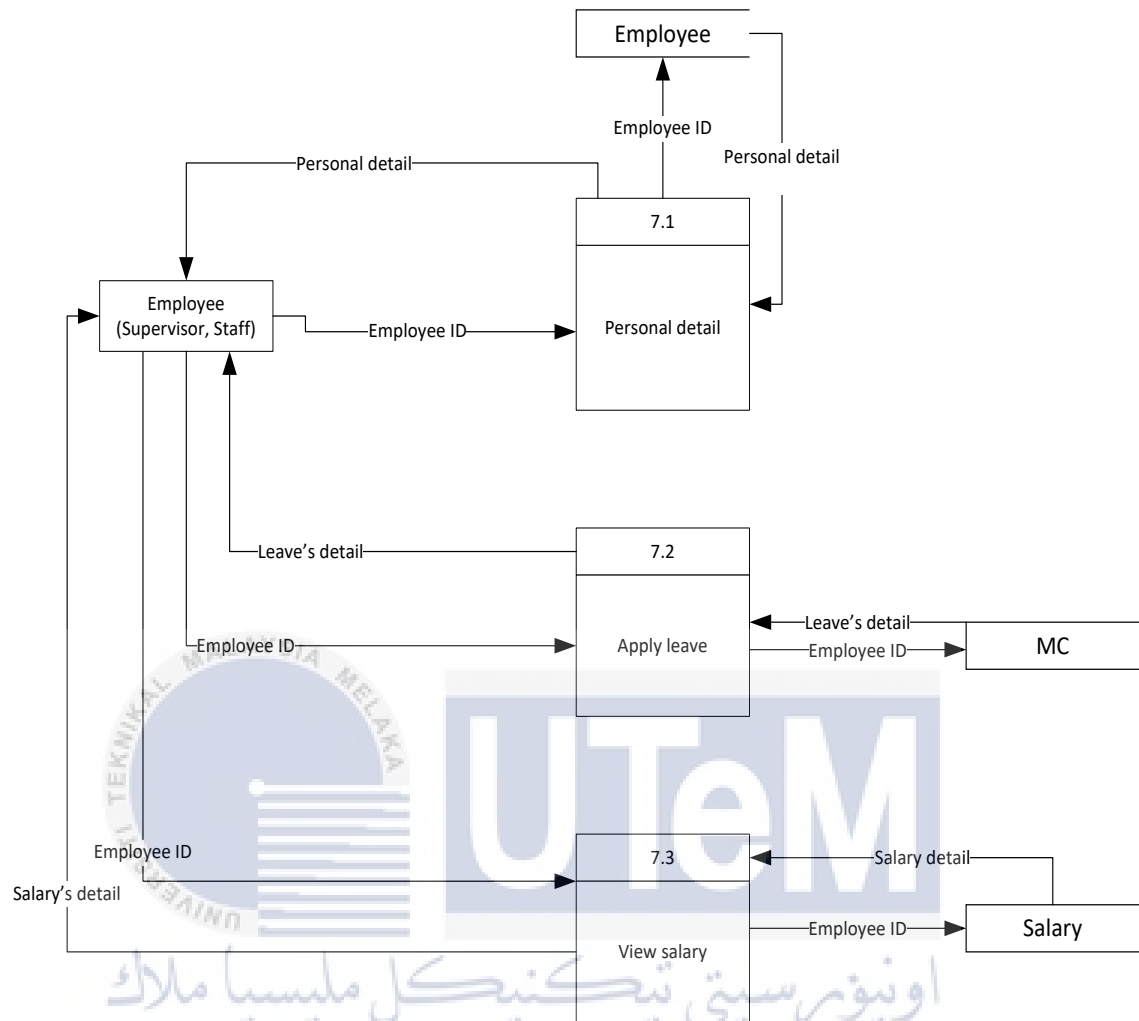


Figure 3.16: Personal Management Level 1

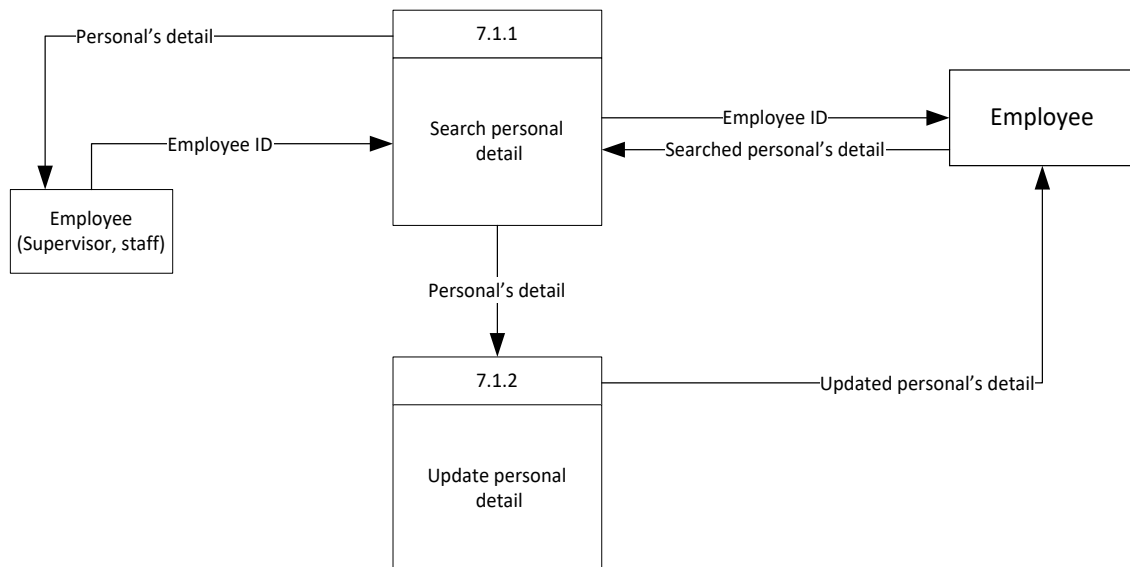


Figure 3.17: Personal Management Level 2 (Personal detail)

Process description/function

Process	Personal detail
Purpose	A process for search personal details and update.
Definition	There are 2 sub process involve:- 1. Search data A process to search personal details in database. 2. Update data A process to update personal details in database.
Responsibility	Owner, supervisor, staff
How often	Depends

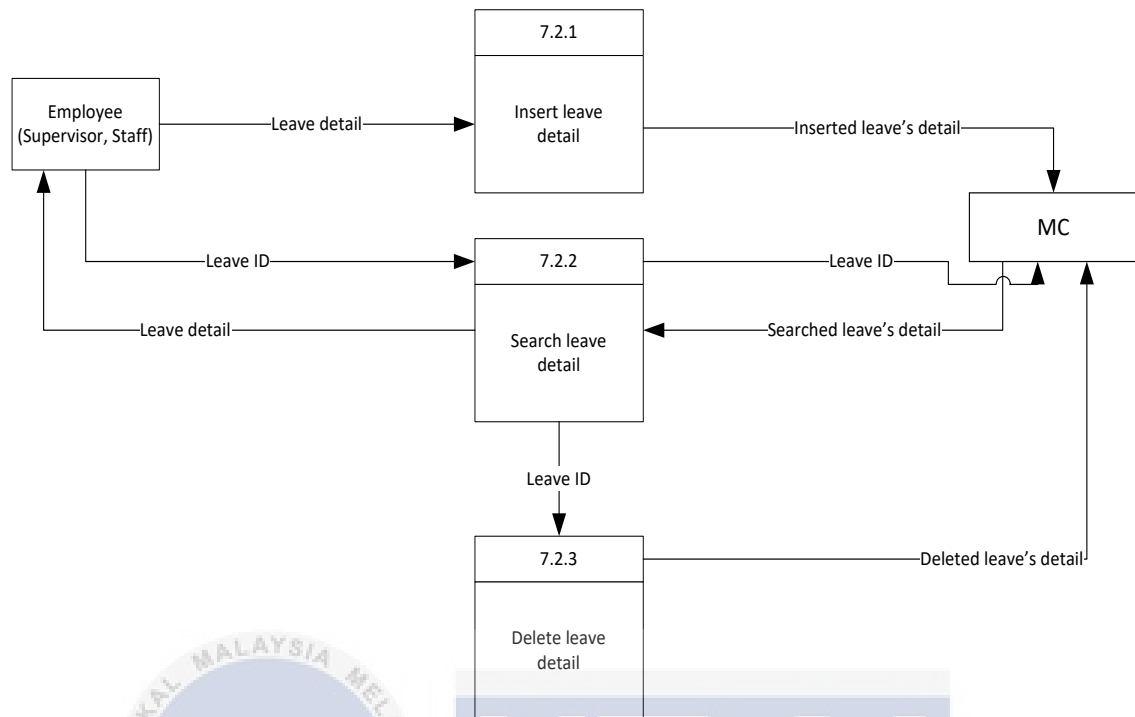


Figure 3.18: Personal Management Level 2 (Apply Leave)

Process description/function

Process	Apply leave
Purpose	A process to apply, search and update leave.
Definition	There are 3 sub process involve:- 1. Insert data A process for inserting leave details in database. 2. Search data A process to search leave details in database. 3. Delete data A process to delete leave details in database.
Responsibility	Supervisor, staff
How often	Depends

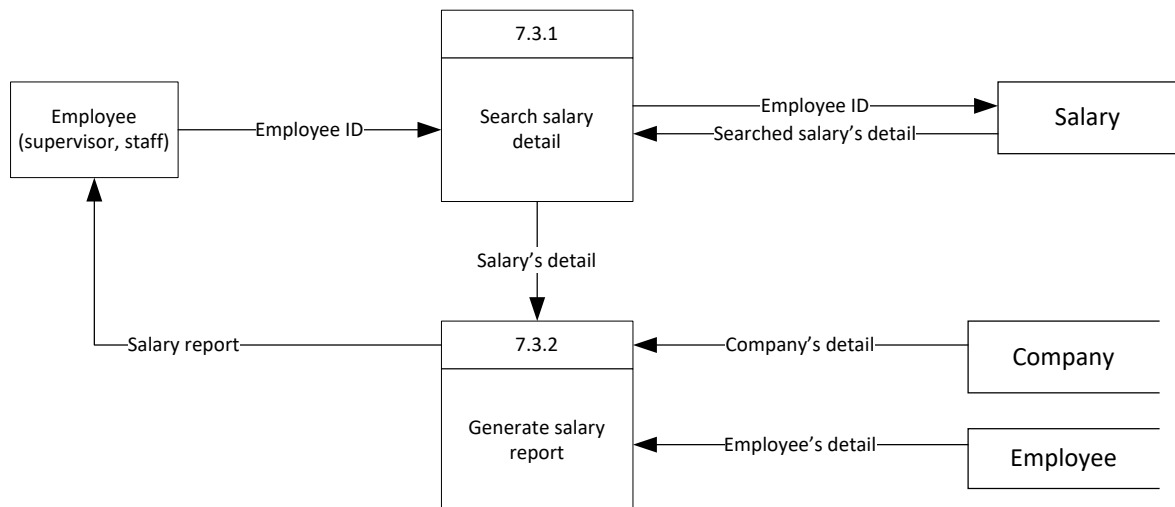


Figure 3.19: Personal Management Level 2 (View Salary)

Process description/function

Process	View salary
Purpose	A process to search and generate salary report
Definition	There are 2 sub process involve:- 1. Search data A process to search salary details in database. 2. Generate data A process where all the search data will be generate.
Responsibility	Supervisor, staff
How often	Depends

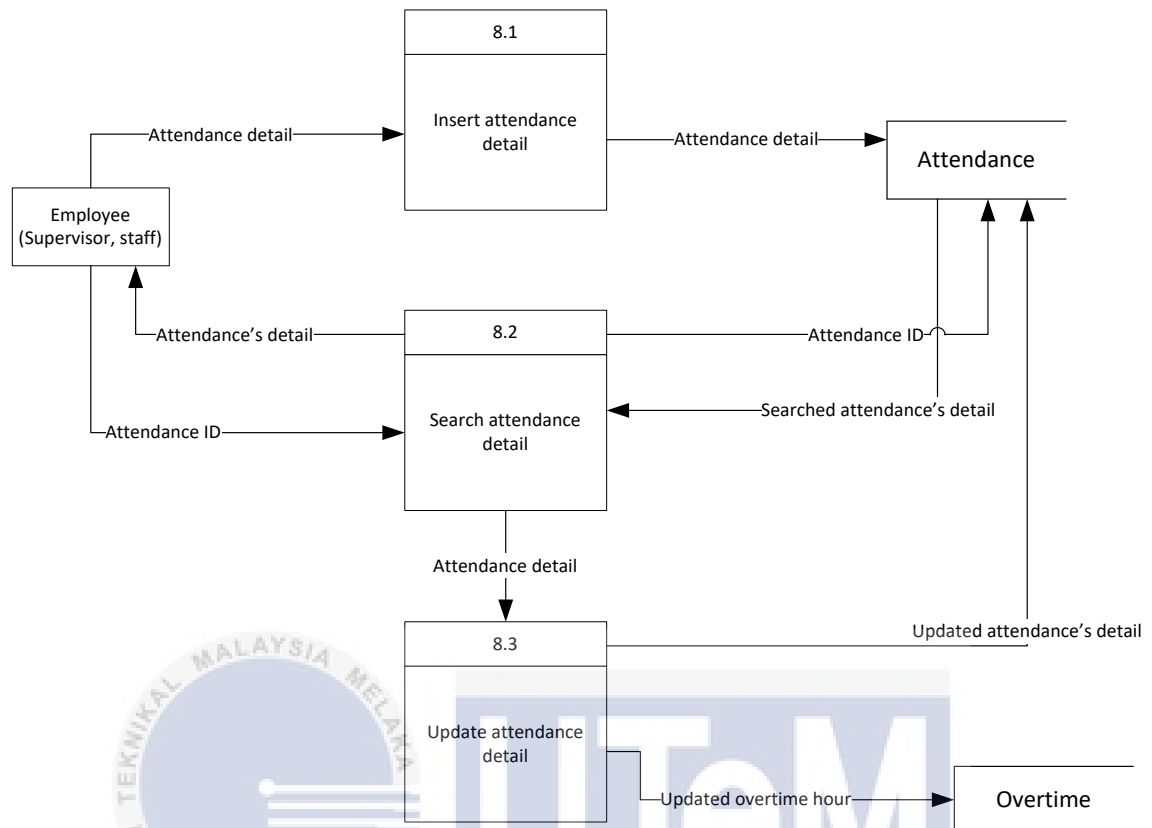


Figure 3.20: Attendance Management Level 1

Process description/function

Process	Attendance management
Purpose	A process for insert daily attendance, search and update attendance
Definition	There are 3 sub process involve:- 1. Insert data A process for inserting attendance details in database. 2. Search data A process to search attendance details in database. 3. Update data A process to update attendance details in database.
Responsibility	Supervisor, staff
How often	Depends

3.4.3 Functional Requirement (Process Model)

- 1) Can keep track of staff based on their attendance.
- 2) Can generate several of report such as receipt.
- 3) Can search based on the alphabet of the word.
- 4) Can add; update certain things to make it easier.

3.4.4 Non-functional Requirement

- 1) Time taken for every time daily sales made in order to see the service performance time taken.
- 2) This system can functional using web-browser and mobile-based on hand phone.

3.4.5 Other Requirements

3.4.5.1 Software Requirement:

SOFTWARE	PURPOSE
Microsoft Word 2010	To write reports and complete the documents
Microsoft Visio 2007	To create Entity-Relational Diagram (ERD), flow chart, Context Diagram, and Data Flow Diagram
Microsoft Project 2010	To create Gantt Chart
Adobe Photoshop CS5	To create a poster of Workshop 2
Notepad	To keep all the coding as a backup

Table 3.2: Software Requirements

3.4.5.2 Hardware Requirement:

HARDWARE	PURPOSE
Laptop	To keep all information regarding project
Printer	To print the documents and reports

Table 3.3: Hardware Requirements

3.4.5.3 Programming Language:

PROGRAMMING LANGUAGE	SOFTWARE	PURPOSE
PHP	Adobe Dreamweaver CS5	To implement interface, coding, looping, etc.

Table 3.4: Programming Language

3.4.5.4 Operating System and Database Management System (DBMS)

The list of Operating System and Database Management System (DBMS) that are going to be used:

OPERATING SYSTEM	DATABASE MANAGEMENT SYSTEM (DBMS)
Windows	MySQL

Table 3.5: Operating System, DBMS.

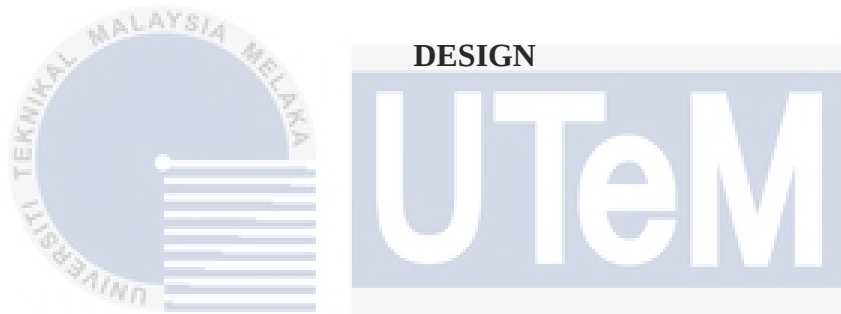
3.5 Conclusion

In conclusion, this chapter explains how is the current system operate and what method used in order to make sure the future system will overcome the problem occur. Besides that, in this chapter explains briefly about how the data flow for each of the process including requirement needed such as functional, non-functional and others requirement.

As for the next chapter which design, this chapter will explain briefly about the proposed design for the system.



CHAPTER IV



4.1 Introduction

Design is the most crucial phase of system development. These include conceptual design, logical design and physical design. Conceptual design will describe the relationships of Entity Relationship Diagram (ERD) in form of business rules. As for the logical design, data dictionary will be included and validate the conceptual design. Whereas for the physical design will describe briefly on the selection of DBMS.

This chapter is divided into three (3) designs which are system architecture design, database design and graphical user interface. Each of this design process is important in order to develop a system according to the user requirements. It will help in develop an interactive system.

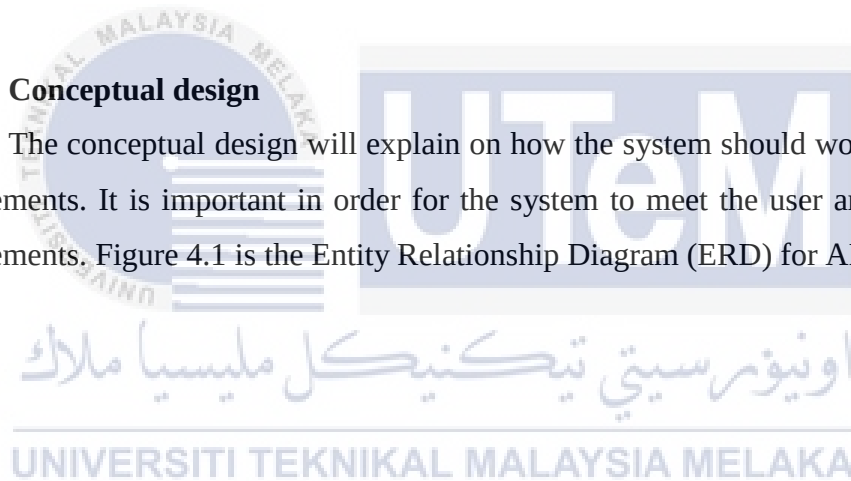
4.2 Database design

System architecture is the models that describe the structure of the system. Conceptual model, logical and physical model are the types of models. Entity Relationship Diagram is the example of conceptual model. Whereas, data dictionary is an example of logical model. Last but not least, coding and the interface is an example of physical model.

The architecture of the system will help in understanding the function of the system. The developer of a development system has to make user that the system architecture meets user requirement and provide an interactive interface for the system.

4.2.1 Conceptual design

The conceptual design will explain on how the system should work based on the requirements. It is important in order for the system to meet the user and performance requirements. Figure 4.1 is the Entity Relationship Diagram (ERD) for AD-Gate.



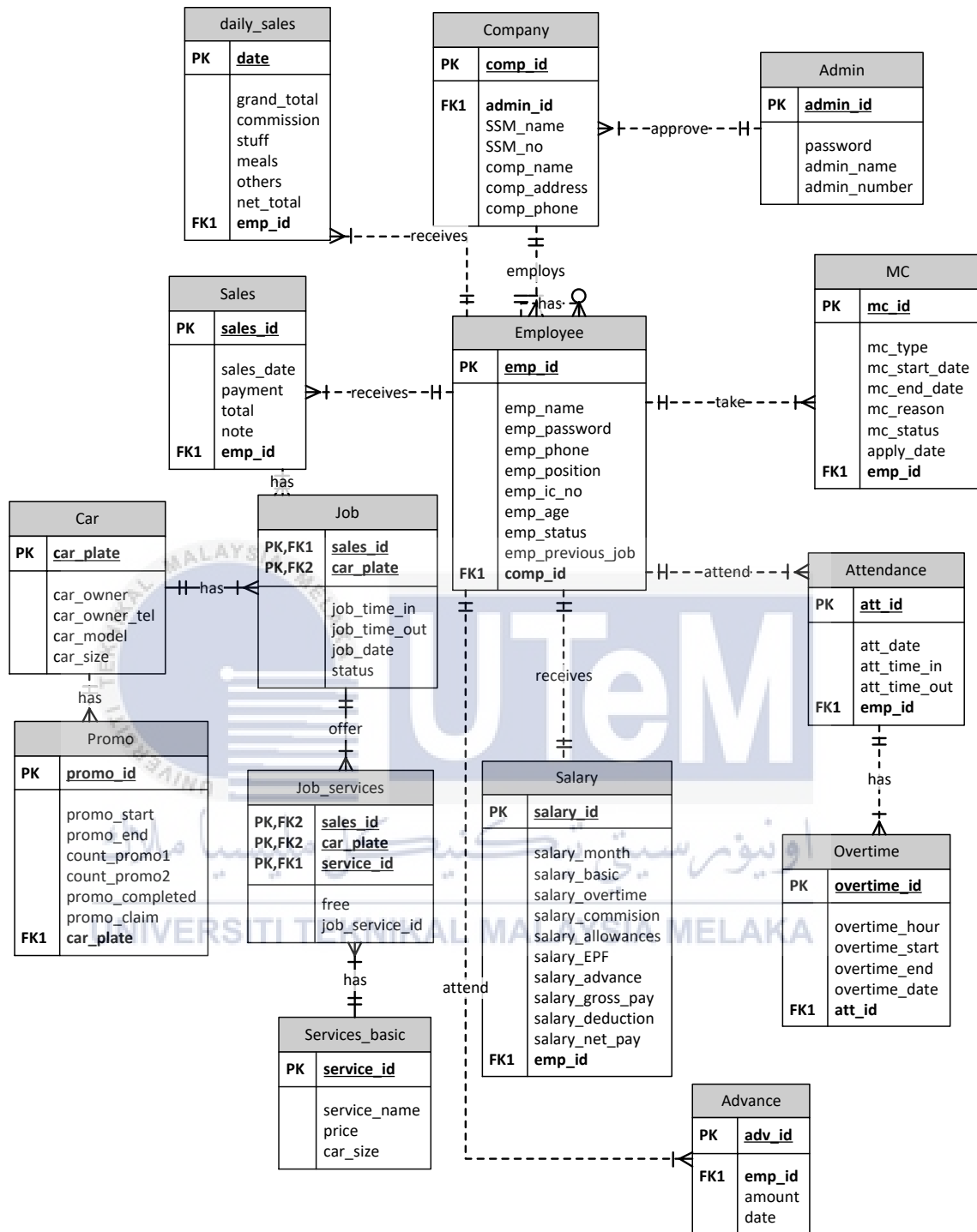


Figure 4.1: AD-Gate Entity Relationship Diagram (ERD)

Business rule

1. An admin can manage many companies and vice versa.
2. A company can have many employees but an employee can only be in one company.
3. An employee can have many MC but MC can belong to one employee at a time.
4. An employee can have many attendances but an attendance can only belong to an employee.
5. An attendance can have one overtime only and vice versa.
6. An employee can borrow many money advances but an advance can only belong to an employee.
7. An employee can have one salary only and vice versa.
8. Sales can only be inserting by an employee but an employee can have many sales.
9. A car can have many sales but one sale can only be one car.
10. Services basic can be inserted in many sales and one sale can have many services.

4.2.2 Logical design

In this section, it will describe the data dictionary for the system. The data dictionaries of AD-Gate are described in more detail in the tables below. Other tables refer to Appendix C.

Table 4.1: Admin Data Dictionary

Attribute	Content	Type	Format	Required	PK/FK	Example
admin_id	Admin unique ID	Varchar(10)	Xxxxxx	Y	PK	AD001
password	Admin Password	Varchar(10)	Xxxxxx			abc123
admin_name	Admin name	Varchar(50)	Xxxxxx			Aainina
admin_number	Admin phone number	Int(15)	999999			01127174384

4.2.3 Physical Design

The physical design is about the selection of Database Management System (DBMS). The DBMS choose for this system is MySQL. This DBMS is supported by the phpmyadmin. This MySQL has a graphical user interface which easy for developer to perform database tasks.

The DBMS used is to design a coding for database task as the planning system. The coding construct on the DBMS such as simple database coding (insert), trigger and stored procedure. The coding built in MySQL can show either have any error or problem at the interface. It also can show the success coding built by showing the output at the interface.

The function of stored procedure is to manage and maintain data easily. It has productivity and ease to use while it has a powerful database application. Stored procedure coding's built in phpmyadmin is connected with the selected language that will make the language easy to gain data from the database by using a simple query.

The trigger functions almost same as stored procedure but it will run as a unit. Moreover, trigger also function to atomicity generate derived column values.

4.3 Graphical User Interface (GUI) Design

The module that will be used in the interface will explain detail in this section. Some of the function includes in the system are login and others will be explain.

Title	Login	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	1
		Description	Front page
Description Label 1 : “Mobile-web Gateway for Automotive Detailing SME’s” Label 2: “Username” Label 3: “Password” Text field 1: Username field Test field 2: Password field Button 1 = “Login” script to validate the username and password.		Label 1 Label 2 Text field 1 Label 3 Text field 2 Button 1	
		Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.1: Login interface

Title	Main menu (Admin)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	2
		Description	First page after login for admin
Description Label 1: “Main menu” Label 2: “Date(current date) Time (current time)” Currently login: (current user)” Button1: “Logout” button #../logout.php Button2: “Display Company” button #display.php Button3: “Create New Company” Button #addcompany.php Button4: “Update Personal Info” button #updateInfo.php		Label 1	
		Button 1	
		Label 2	
		Button 2	
		Button 3	
		Button 4	
		Features	
		Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.2: Main Menu (Admin) interface

Title	Company	Designer	Aainina Farhainn Binti Yusoff												
Project	AD-Gate	Page	3												
		Description	List of company displayed												
Description		Label 1 Label2: “Date(current date) Time (current time)” Currently login: (current user)” Label3: “Total company 0 <<prev next>>” Button1: “Logout” button #../logout.php Button2: “Main Menu” button #mainMenu.php Button3: “Back” button #mainMenu.php Text field 1:Insert to search company’s name. Header 1: “Name” Header 2: “Phone Number” Header 3: “Status” Header 4: “Action” Content = List of company Hyperlink = “View” #viewCompany.php			Button 1 Button 2 Button 3 Label 2 Text field 1 Label 3 <table><tr><td>Header 1</td><td>Header 2</td><td>Header 3</td><td>Header 4</td></tr><tr><td colspan="3">Content</td><td>Hyperlink</td></tr></table>			Header 1	Header 2	Header 3	Header 4	Content			Hyperlink
Header 1	Header 2	Header 3	Header 4												
Content			Hyperlink												
		Features													
		Background = “background-image=url(img/carInwater1.jpg)”													

Figure 4.3.3: List of company interface

Title	Company details		Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate		Page	4
			Description	Display company details
Description Label1: “Details” Label2: “Date (current date) Time (current time) Currently login: (current user)” Button1: “Logout” button #..logout.php Button2: “Main Menu” button #mainMenu.php Button3: “Back” button #display.php Header 1: “Company details” Header 2: “Owner details” Content1: Company details Content2: Owner of company details Hyperlink : “Deactivate” #editStatus.php		Label 1 Button 1Button 2Button 3 Label 2 Header 1 Content 1 Header 2 Content 2 Features Background = “background-image=url(img/carInwater1.jpg)”		

Figure 4.3.4: View company details interface

Title	Company status	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	5
		Description	A pop-out box to update company status.
Description		X Label 1 Drop down ▾ Button 1	
		Features	
		Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.5: Company status interface

Title	New company	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	6
		Description	Create new company
Description		Label 1 Button 1Button 2Button 3 Label 2 Header 1 Content 1 Header 2 Content 2 Button 4 Features Background = "background-image=url(img/carInwater1.jpg)"	
Label1: "Add Company" Label2: "Date(current date) Time (current time)" Currently login: (current user)" Button1: "Logout" button #../logout.php Button1: "Main Menu" button #../mainMenu.php Button1: "Back" button #../logout.php Button1: "Save" script button to insert company data. #../logout.php			
Header 1: "Company details" Header 2: "Owner details"			
Content1: Text field consist of SSM number, SSM, company name, address and phone number. Content2: Text field consist of owner name, password and phone number.			

Figure 4.3.6: Add new company interface

Title	Update personal info (Admin)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	7
		Description	Admin can update their personal information.
Description		Label 1 Button 1 Button 2 Button 3 Label 2 Header 1 Label 3 Text field 1 Label 4 Text field 2 Label 5 Text field 3 Label 6 Text field 4 Button 4	
Features		Background = “background-image=url(img/carInwater1.jpg)”	

Label 1: “Personal Details”

Label 2: “Date(current date) | Time (current time)”

Currently login: (current user)”

Label 3: “ID”

Label 4: “Password”

Label 5: “Name”

Label 6: “Phone number”

Button 1:” Logout” button
#..logout.php

Button 2: “Main Menu” button
#mainMenu.php

Button 3: Back button
#mainMenu.php

Header 1: “Personal details”

Text field 1:Insert to update ID

Text field 2:Insert to Update password

Text field 3:Insert to update name

Text field 4:Insert to update phone number

Button 4: “Save” script button to update new details
#saveInfo.php

Figure 4.3.7: Update personal info interface

Title	Main menu (owner)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	8
		Description	First page after login for Owner
Description		Label 1 Button 1 Label 2 Button 2 Button 3 Button 4 Button 5 Button 6 Button 7	
Label 1: “Main menu” Label 2: “Date(current date) Time (current time)” Currently login: (current user)” Button 1: ” Logout” button #logout.php Button 2: “Sales Management” button #sales.php Button 3: “Staff Management” Button #staffmanagement.php Button 4: “Account Management” button #accmanagement.php Button 5= “Customer Management” button #custmanagement.php Button 6: “Service Management” Button #service/service.php Button 7: “Update Info” button #updateinfo.php		Features	
		Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.8: Main Menu (Owner) interface

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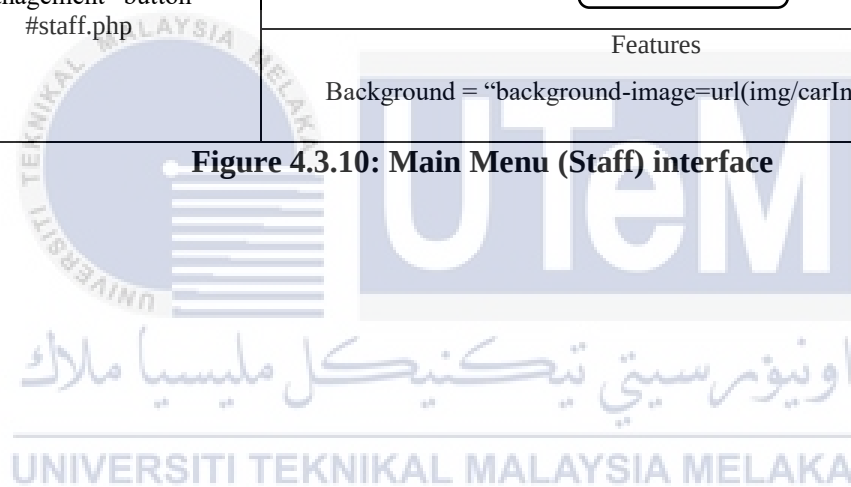
Title	Main menu (Supervisor)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	9
		Description	First page after login for Supervisor
Description		Label 1 Button 1 Label 2 Button 2 Button 3 Button 4 Button 5 Button 6 Button 7	
		Features	
		Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.9: Main Menu (Supervisor) interface

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Title	Main menu (Staff)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	10
		Description	First page after login for Staff
Description Label 1: “Main Menu” Label 2: “Date(current date) Time (current time)” Currently login: (current user)” Button 1: ” Logout” button #logout.php Button 2: “Sales Management” button #sales.php Button 3: “Customer Management” button #custmanagement.php Button 4: “Personal Management” button #staff.php		Label 1	
		Button 1	
		Label 2	
		Button 2	
		Button 3	
		Button 4	
		Features	
Background = “background-image=url(img/carInwater1.jpg)”			

Figure 4.3.10: Main Menu (Staff) interface



Title	Sales Management (Owner, supervisor)	Designer	Aainina Farhainn Binti Yusoff						
Project	AD-Gate	Page	11						
		Description	Main page for daily sales.						
Description		Label 1 Button 1 Button 2 Button 3 Label 2 Button 4 Button 5 Text field 1 Label 3 <table><tr><th colspan="2">Header 1</th></tr><tr><td>Content 1</td><td>Hyperlink</td></tr><tr><td></td><td>Hyperlink 2</td></tr></table>		Header 1		Content 1	Hyperlink		Hyperlink 2
Header 1									
Content 1	Hyperlink								
	Hyperlink 2								
Header 1: Header consist of "Receipt number", "Car plate", "Done" and "Action"		Features							
Content 1: List of daily sales		Background = "background-image=url(img/carInwater1.jpg)"							
Hyperlink1: "Payment" hyperlink #editsales.php									
Hyperlink 2: "Receipt" hyperlink #receipt.php									

Figure 4.3.11: Sales management interface

Title	Sales Management (Staff)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	12
		Description	Main page for daily sales.
Description		Label 1 Button 1 Button 2 Button 3 Label 2 Button 4 Button 5 Text field 1 Label 3 Header 1 Content 1	
Label 1: "Daily sales" Label 2: "Date(current date) Time (current time)" Currently login: (current user)" Label 3: "Total sales 0 <<prev next>>" Button 1: " Logout" button #logout.php Button 2: "Main Menu" button #mainMenu.php Button 3: "Back" button #mainMenu.php Button 4: "Refresh" button #sales.php Button 5: "Add sales" button #car.php Text field= Insert to search daily sales Header 1: Header consist of "Receipt number", "Car plate" and "Done" Content 1: List of daily sales		Features: Background = "background-image=url(img/carInwater1.jpg)"	

Figure 4.3.12: Sales management (staff) interface

Title	Car details (Owner, supervisor and staff)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	13
		Description	First page after click “Add sales” button on previous page
Description		Label 1 Button 1 Button 2 Button 3 Label 2 Button 4 Text field 1 Label 3 Header 1 Content 1 Hyperlink 1	
Label 1: “Car” Label 2: “Date(current date) Time (current time) Currently login: (current user)” Label 3: “Total car 0 ” Button 1: ” Logout” button #logout.php Button 2: “Main Menu” button #mainMenu.php Button 3: “Back” button #sales.php Button 4: “Add Car” button #addCar.php Text field: Insert to search car Header 1: Consist of “Car plate”, “Owner”, “Car size” and “Action” Content 1: List of car Hyperlink 1: “Add” hyperlink #addInfo.php		Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.13: Car details interface

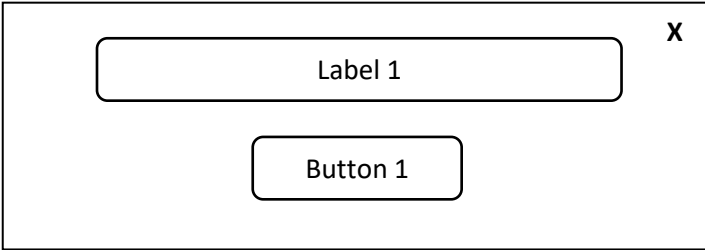
Title	Add Info (Owner, supervisor and staff)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	14
		Description	A pop out after “Add” hyperlink is being click to redirect to the next page
Description Label 1= “Proceed?” Button 1= “Yes” button #addsales.php			
		Features	
		Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.14: Add info interface

Title	Add sales (Owner, supervisor, staff)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	15
		Description	A page to add daily sales
Description Label 1: “Sales” Label 2: “Date(current date) Time (current time)” Currently login: (current user)” Label 3: “Total” Button 1: ” Logout” button #logout.php Button 2: “Main Menu” button #mainMenu.php Button 3: “Back” button #car.php Button 4: “Save” button #addSales.php Button 5: “Done” button #done.php Drop down: List of services that will be selected Header 1: “Service” Header 2: “Price” Header 3: “Action” Content 1: List of services and price that are being selected Content 2: Total price Hyperlink: “Delete” hyperlink #addSales.php <td colspan="2"> Label 1 Button 1Button 2Button 3 Label 2 Drop down Button 4 Header 1Header 2Header 3 Content 1Hyperlink Label 3Content 2 Button 5 </td>		Label 1 Button 1Button 2Button 3 Label 2 Drop down Button 4 Header 1Header 2Header 3 Content 1Hyperlink Label 3Content 2 Button 5	
		Features	
		Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.15: Add sales interface

Title	Confirm sales (Owner, Supervisor, Staff)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	16
		Description	A pop out after “Done” button being click
Description		Label 1 Label 2 Header 1 Header 2 Content 1 Label 3 Text field Button 1	
		Features	
Button 1: “Yes” button #updateSales.php		Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.16: Confirm sales interface



Title	Update payment (supervisor, staff)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	17
		Description	A pop-out after “Payment” hyperlink is being click-on page sales.php
Description		Label 1: “DONE PROCESS!” Label 2: “Payment Note” Label 3: “Total” Label 4: “Discount” Label 5: “Total after discount *charge inclusive 6% GST” Label 6: “Cash” Label 7: “Change” Drop down: List of payment note Text field 1: Sum of price Text field 2: Insert discount value Text field 3: Sum of total Text field 4: Insert cash value Text field 5: Change Button 1: “Save” script button update sales #saveEditSales.php X Label 1 Label 2 Drop down ▾ Label 3 Text field 1 Label 4 Text field 2 Label 5 Text field 3 Label 6 Text field 4 Label 7 Text field 5 Button 1	
		Features	
		Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.17: Update payment interface

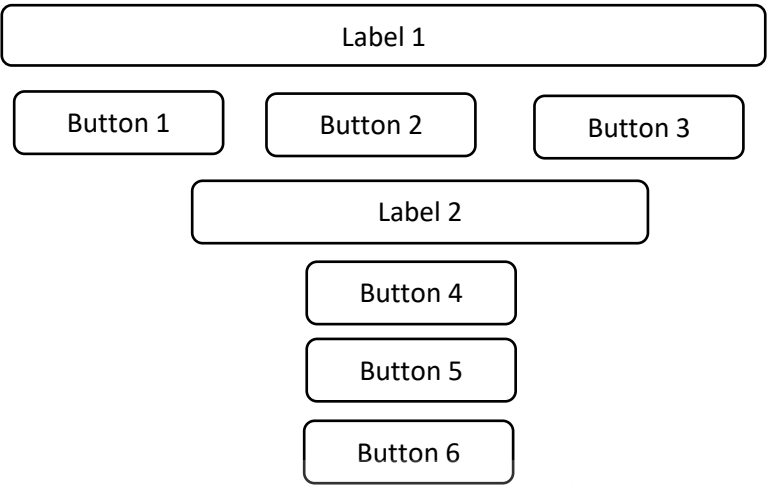
Title	Staff Management (Owner)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	18
		Description	First page after button “Staff Management” being click
Description			
Label 1: “Staff management” Label 2: “Date(current date) Time (current time)” Currently login: (current user)” Button 1: ” Logout” button #logout.php Button 2: “Main Menu” button #mainMenu.php Button 3: “Back” button #mainMenu.php Button 4: “Staff” button #staff/employee.php Button 5: “Leave Management” Button #leave/viewLeave.php Button 6: “Attendance Management” button #attendance.php		Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.18: Staff management interface

Title	List of staff (Owner)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	19
		Description	At first page after button “Staff” is being click
Description		Label 1 Button 1 Button 2 Button 3 Label 2 Button 4 Text field Label 3 Header 1 Content 1 Hyperlink 1 Hyperlink 2	
Label 1: “Staff” Label 2: “Date(current date) Time (current time) Currently login: (current user)” Label 3: “Total employee 0 <<prev next>>” Button 1: ” Logout” button #../logout.php Button 2: “Main Menu” button #../mainMenu.php Button 3: “Back” button #../staffManagement.php Button 4: “Add staff” button #addEmployee.php Text field: Insert to search content Header 1: Consists of ”Name”, ”Phone number” and ”Action”. Content 1= List of daily sales Hyperlink 1= “Advance” Hyperlink #advance.php Hyperlink 2= “Update” hyperlink #updateEmployee.php		Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.19: List of staff interface

Title	Add staff (Owner)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	20
		Description	A pop-out after button “Add staff” being click
Description Text field: Insert *Name * Password * Phone number * Position * Basic salary * IC number * Age * Status * Previous job Label: * Name * Password * Phone number * Position * Basic salary * IC number * Age * Status * Previous job Button 1: “Save” script button to add employee details #saveEmployee.php		X Label Text field Button 1 Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.20: Add staff interface

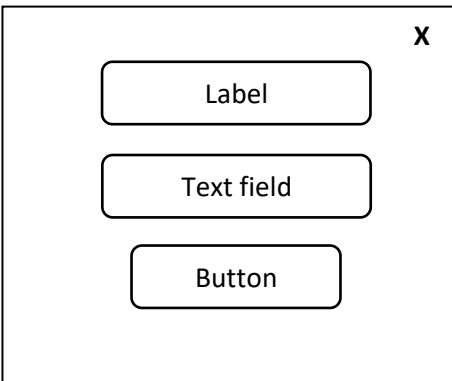
Title	Add advance (Owner)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	21
		Description	A pop-out after “Advance” hyperlink being click
Description			
		Features	
		Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.21: Add advance interface

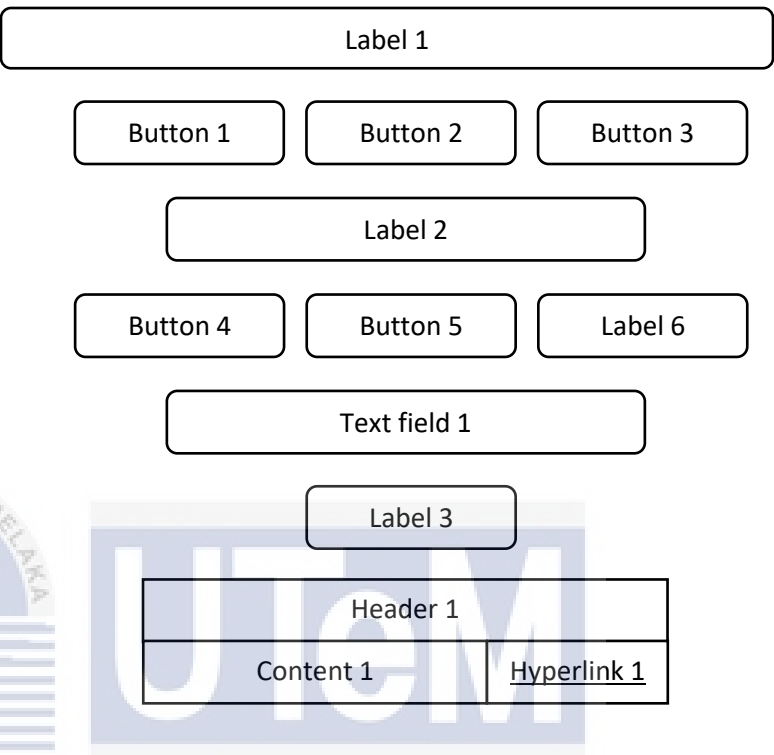
Title	Leave management (Owner)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	22
		Description	First page after button “Leave Management” is being click
Description			
Label 1: “Leave” Label 2: “Date(current date) Time (current time)” Currently login: (current user)” Label 3: “<<prev next>>” Button 1: ” Logout” button #../logout.php Button 2: “Main Menu” button #../mainMenu.php Button 3: “Back” button #../staffManagement.php Button 4: “Pending” button #viewLeave.php Button 5: “Approve” button #approveLeave.php Button 6: “Decline” button #declineLeave.php Text field: Insert to search employee. Header1: “Name”, “Leave Apply Date” and “Action” Content 1: List of employee name and date applied. Hyperlink 1: “Details” hyperlink #editLeave.php		Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.22: Leave management interface

Title	Update leave status (Owner)	Designer	Aainina Farhainn Binti Yusoff										
Project	AD-Gate	Page	23										
		Description	A pop-out after “Details” hyperlink being click										
Description		Label 1 Label 2 <table><tr><td>Label 3</td><td>Text field 1</td></tr><tr><td>Label 4</td><td>Text field 2</td></tr><tr><td>Label 5</td><td>Text field 3</td></tr><tr><td>Label 6</td><td>Text field 4</td></tr><tr><td>Label 7</td><td>Drop down ▾</td></tr></table> Button 1		Label 3	Text field 1	Label 4	Text field 2	Label 5	Text field 3	Label 6	Text field 4	Label 7	Drop down ▾
Label 3	Text field 1												
Label 4	Text field 2												
Label 5	Text field 3												
Label 6	Text field 4												
Label 7	Drop down ▾												
Labe 1: “This is leave details” Label 2: “Details” Label 3: “Type of leave” Label 4: “Start date” Label 5: “End date” Label 6: “Reason of leave” Drop down: “Approve” or “Decline” Button 1= “Save” script button to employee update leave’s status. #saveLeave.php													
		Features Background = “background-image=url(img/carInwater1.jpg)”											

Figure 4.3.23: Update leave status interface

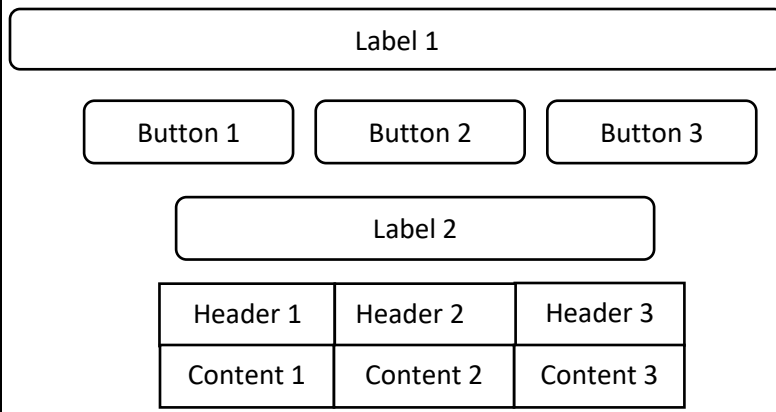
Title	Employee Attendance (Owner)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	24
		Description	A first page after “Attendance Management” being click
Description			
Label 1: “Attendance” Label 2: “Date(current date) Time (current time) Currently login: (current user)” Button 1: ” Logout” button #../logout.php Button 2: “Main Menu” button #../mainMenu.php Button 3: “Back” button #../staffManagement.php Header 1: “Employee” Header 2: “Time In” Header 3: “Time Out” Content 1: List of employee Content 2: List of employee attendance time in Content 3: List of employee attendance time out		Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.24: Employee attendance interface

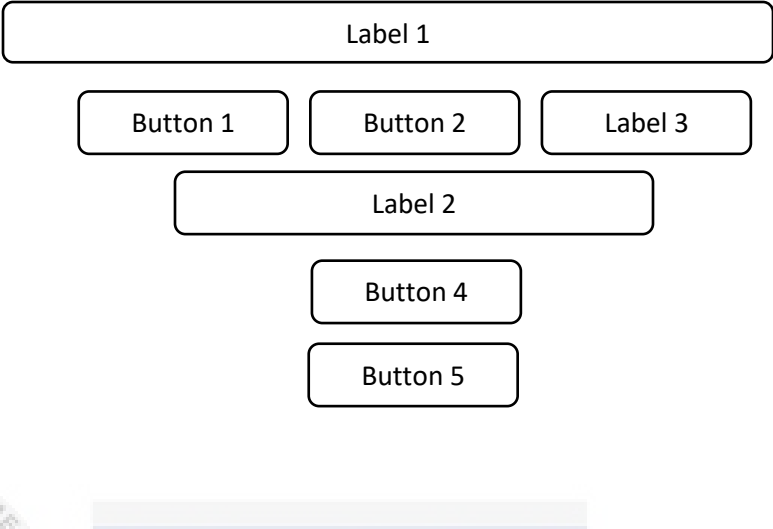
Title	Account Management (Owner)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	25
		Description	A first page after “Account management” button being clicked
Description			
Label 1: “Account management” Label 2: “Date(current date) Time (current time) Currently login: (current user)” Button 1: ” Logout” button #logout.php Button 2: “Main Menu” button #mainMenu.php Button 3: “Back” button #mainMenu.php Button 4: “Sales Report” button #salesReport.php Button 5: “Salary report” button #salary/viewstaff.php		Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.25: Account management interface

Title	Sales report (Owner)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	26
		Description	First page after button “Sales Report” being click
Description		Label 1 Button 1 Button 2 Button 3 Label 2 Label 3 Text field 1 Label 4 Text field 2 Button 4 Label 2 Button 5 Header Content Label 6 Text field 3	
Label 1: “Sales management” Label 2: “Date(current date) Time (current time) Currently login: (current user)” Label 3= “From” Label 4= “To” Label 5= “Sales report from to” Label 6= “Total” Button 1: ” Logout” button #logout.php Button 2: “Main Menu” button #mainMenu.php Button 3: “Back” button #accManagement.php Button 4: “Search” script button to search date. #salesReport.php Button 5: “Print” script button to print sales. #salesReport.php Header= Consist of “Receipt”, “Date”, “Customer”, “Contact Number”, “Amount” and “Remarks”. Text field1: Insert date to search. Text field2: Insert date to search. Test field 3: Sum of sales made		Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.26: Sales report interface

Title	Salary report (Owner)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	27
		Description	First page after button “Salary Report” is click
Description		Label 1 Button 1 Button 2 Button 3 Label 2 Button 4 Text field Header Content Hyperlink	
Label 1: “Salary” Label 2: “Date(current date) Time (current time)” Currently login: (current user)” Button 1: ” Logout” button #../logout.php Button 2: “Main Menu” button #../mainMenu.php Button 3: “Back” button #../accManagement.php Button 4: “Salary status” button #viewSalary.php Text field: Insert to search in the content field. Header: Consist of “Name”, “Position” and “Action”. Content: List of employee name and position. Hyperlink: “Add” hyperlink #salary.php		Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.27: Salary report interface

Title	Employee salary insert (Owner)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	28
		Description	Calculation for employee monthly salary.
Description		Label 1 Button 1 Button 2 Button 3 Label 2 Drop down 1 ▾ Drop down 2 ▾ Button 4 Header Label 3 Text field Button 5	
Label 1: "Salary Management" Label 2: "Date(current date) Time (current time)" Currently login: (current user)" Label 3: "Month", "Employee ID", "Basic salary", "Overtime", "Commission". "Allowances", "Gross pay", "EPF (8%)", "Advance", "Deduction" and "Net pay". Header: "Salary details" Text field: All the salary detail required. Drop down1: List of the month need to be choose. Drop down 2: List of the year need to be choose. Button 1: " Logout" button #../logout.php Button 2: "Main Menu" button #../mainMenu.php Button 3: "Back" button #viewStaff.php Button 4: "Search" script button to search Button 5: "Save" script button to save input #saveSalary.php		Features: Background = "background-image=url(img/carInwater1.jpg)"	

Figure 4.3.28: Salary insert interface

Title	Customer Management (Owner, Supervisor)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	29
		Description	First page after button “Customer Management” being click.
Description		Label 1 Button 1 Button 2 Label 3 Label 2 Button 4 Button 5	
Button 1: ” Logout” button #logout.php Button 2: “Main Menu” button #mainMenu.php Button 3: “Back” button #mainMenu.php Button 4: “Customer” button #customer.php Button 5: “History” button #custHistory.php		Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.29: Customer management interface

Title	List of customer (Owner, Supervisor)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	30
		Description	List of customer's detail.
Description Label 1: "Customer" Label 2: "Date(current date) Time (current time) Currently login: (current user)" Label3: "Total Car 0 <<prev next>>" Button 1: " Logout" button #logout.php Button 2: "Main Menu" button #mainMenu.php Button 3: "Back" button #custManagement.php Text field: Insert to search in the content field. Header: Consist of "Car plate", "Owner", "Car size" and "Action". Content: List of customer's Details. Hyperlink: "Update" hyperlink #updateCust.php		Label 1 Button 1 Button 2 Button 3 Label 2 Text field Label 3 Header Content Hyperlink	
		Features	
		Background = "background-image=url(img/carInwater1.jpg)"	

Figure 4.3.30: Customer list interface

Title	Update customer (Owner, Supervisor)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	31
		Description	Update customer's details.
Description		X Label Text field Button 1	
Button 1: "Save" script button to update customer's details #saveUpdateCust.php		Features Background = "background-image=url(img/carInwater1.jpg)"	

Figure 4.3.31: Update customer interface

Title	Customer's History (Owner, Supervisor)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	32
		Description	When customer makes partial payment, the history will be appearing here.
Description Label 1: "History" Label 2: "Date(current date) Time (current time) Currently login: (current user)" Button 1: " Logout" button #logout.php Button 2: "Main Menu" button #mainMenu.php Button 3: "Back" button #custManagement.php Text field: Insert to search in the content field. Header: Consists of "Receipt", "Car Plate", "Name" And "Balance". Content: List of service's details.		Label 1 Button 1 Button 2 Button 3 Label 2 Text field Header Content	
		Features	
		Background = "background-image=url(img/carInwater1.jpg)"	

Figure 4.3.32: Customer history interface

Title	Service Management (Owner, Supervisor)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	33
		Description	List of services.
Description		Label 1 Button 1 Button 2 Button 3 Label 2 Button 4 Text field Label 3 Header Content <u>Hyperlink</u>	
Label 1: “Customer” Label 2: “Date(current date) Time (current time) Currently login: (current user)” Label3: “Total Services 0 <<prev next>>” Button 1: ” Logout” button #../logout.php Button 2: “Main Menu” button #../mainMenu.php Button 3: “Back” button #mainMenu.php Button 4: “Add service” button #addService.php Text field: Insert to search in the content field. Header: Consists of “Name”, “Car Size”, “Price” And “Action”. Content: List of services’s details. Hyperlink: “Update” hyperlink #updateService.php		Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.33: Service management interface

Title	New services (Owner, Supervisor)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	34
		Description	A pop-out for adding new services.
Description Text field: Insert * Service name * Service price * Service size Label: * Name * Price * Size Button 1: “Save” script button to update customer’s details #saveService.php		Label Text field Button 1 Features	
		Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.34: Add service interface

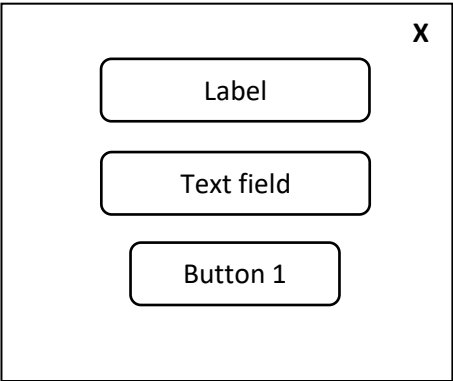
Title	Update services (Owner, Supervisor)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	34
		Description	A pop-out for updating new services.
Description			
Text field: Update * Service name * Service price * Service size Label: * Name * Price * Size Button 1: “Save” script button to update customer’s details #saveUpdateService.php		Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.34: Update service interface

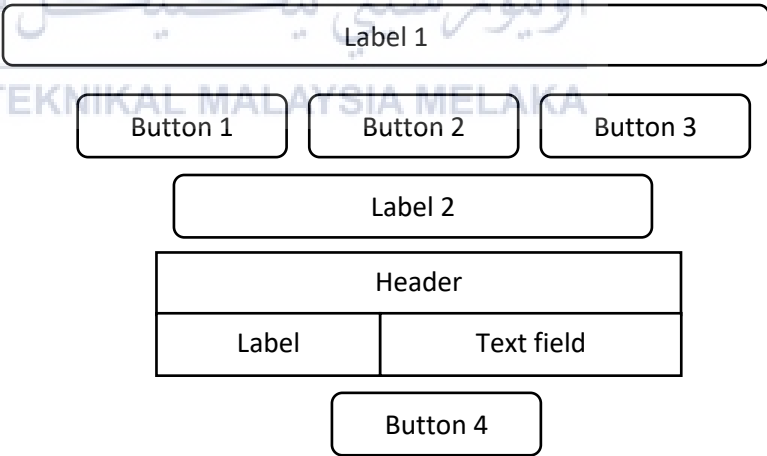
Title	Update personal info (Owner, Supervisor, Staff)		Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate		Page	35
			Description	A page for updating their personal's details.
Description				
Label 1: "Personal Details" Label 2: "Date(current date) Time (current time) Currently login: (current user)" Button 1: "Logout" button #logout.php Button 2: "Main Menu" button #mainMenu.php Button 3: "Back" button #mainMenu.php Button 3: "Save" script button to save the updated data. #mainMenu.php Header : "Personal Details". Label : Consists of "ID", "Password", "Name", "Phone Number", "Position", and "Previous Job" Text field: Employee ID, Password, Name, Phone Number, Position, IC Number, Age, Status And Previous job		Features Background = "background-image=url(img/carInwater1.jpg)"		

Figure 4.3.35: Update personal info interface

Title	Attendance Management (Supervisor)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	36
		Description	Every employee excluding owner will punch in and out their attendance here.
Description		Label 1 Button 1 Button 2 Button 3 Label 2 Label 3 Button 4 Label 4 Header Content Hyperlink Background = "background-image=url(img/carInwater1.jpg)"	
Label 1: "Attendance " Label 2: "Date(current date) Time (current time)" Currently login: (current user)" Label3: "Check In Here!" Label4: "Attendance for today!" Button 1: " Logout" button #../logout.php Button 2: "Main Menu" button #../mainMenu.php Button 3: "Back" button #../mainMenu.php Button 4: "IN" script button to save employee daily punch in attendance. #addIn.php Header: Consists of "Employee", "In", "Out" and "Action". Content: List of attendance details. Hyperlink: "Out" hyperlink #attOut.php			

Figure 4.3.36: Attendance management interface

Title	Punch In (Supervisor)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	37
		Description	A pop-out for punch in their attendance.
Description Text field: Insert * Employee ID Label1: “CHECK IN” Label2: “Please enter your Employee ID” Button 1: “Save” script button to insert customer’s attendance #saveIn.php		Label 1 Label 2 Text field 1 Button 1 X	
		Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.37: Punch In attendance interface

Title	Punch out (Supervisor)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	38
		Description	A pop-out for punch out their attendance.
Description		Text field: Update * Employee ID Label1: "CHECK OUT" Label2: "Are you sure you want to check out?" Button 1: "Save" script button to update customer's attendance #saveOut.php Label 1 Label 2 Text field 1 Button 1	
		Features	
		Background = "background-image=url(img/carInwater1.jpg)"	

Figure 4.3.38: Punch out attendance interface

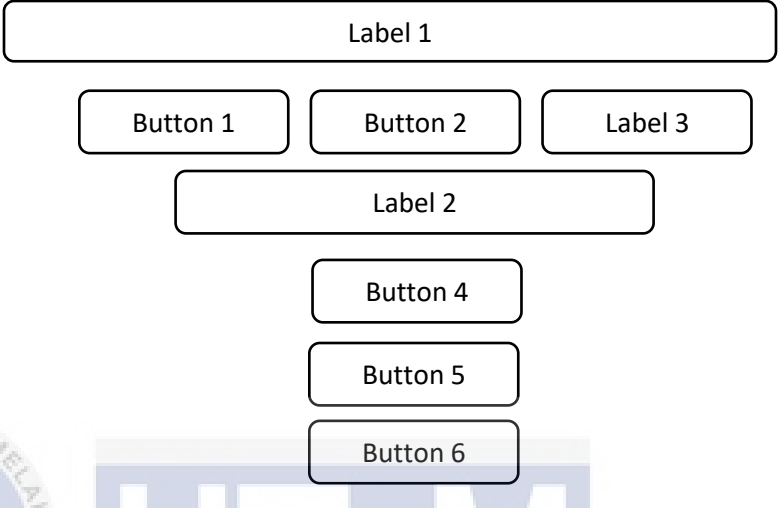
Title	Personal Management (Supervisor, staff)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	39
		Description	Personal management such as apply leave, view monthly salary and update their personal info.
Description			
Label 1: "Personal management"		Features	
Label 2: "Date(current date) Time (current time)"			
Currently login: (current user)"		Background = "background-image=url(img/carInwater1.jpg)"	
Button 1: "Logout" button #logout.php			
Button 2: "Main Menu" button #mainMenu.php			
Button 3: "Back" button #mainMenu.php			
Button 4: "Apply leave" button #viewLeave.php			
Button 5: "View Salary" button #staffSalary/viewSalaryphp			
Button 4: "Update Info" button #updateInfo.php			

Figure 4.3.39: Personal management interface

Title	Leave (Supervisor, Staff)	Designer	Aainina Farhaina Binti Yusoff
Project	AD-Gate	Page	40
		Description	Employee can view their leave's detail on this page.
Description		Label 1 Button 1 Button 2 Button 3 Label 2 Button 4 Text field Header Content Hyperlink Features	
Label 1: "Apply Leave " Label 2: "Date(current date) Time (current time) Currently login: (current user)" Button 1: " Logout" button #logout.php Button 2: "Main Menu" button #mainMenu.php Button 3: "Back" button #staff.php Button 4: "Add Leave" button #addLeave.php Header: Consists of "Start date", "End Date", "Status" and "Action". Content: List of leave's details. Hyperlink: "Delete" hyperlink #deleteLeave.php		Background = "background-image=url(img/carInwater1.jpg)"	

Figure 4.3.40: Leave list interface

Title	Leave details(Supervisor, Staff)	Designer	Aainina Farhainn Binti Yusoff								
Project	AD-Gate	Page	41								
		Description	Employee can insert their leave's detail on this page.								
Description		Label 1 Button 1 Button 2 Button 3 Label 2 Header <table><tr><td>Label 3</td><td>Drop down ▾</td></tr><tr><td>Label 4</td><td>Text field 1</td></tr><tr><td>Label 5</td><td>Text field 2</td></tr><tr><td>Label 6</td><td>Text field 3</td></tr></table> Button 4		Label 3	Drop down ▾	Label 4	Text field 1	Label 5	Text field 2	Label 6	Text field 3
Label 3	Drop down ▾										
Label 4	Text field 1										
Label 5	Text field 2										
Label 6	Text field 3										
Label 1: "Leave Details " Label 2: "Date(current date) Time (current time)" Currently login: (current user)" Label3: "Type of leave" Label4: "Start date" Label5: "End date" Label6: "Reason" Button 1: " Logout" button #logout.php Button 2: "Main Menu" button #mainMenu.php Button 3: "Back" button #viewLeave.php Button 4: "Save" script button to save employee leave's detail. #saveLeave.php Header: "Leave Details" Drop down: List to be select whether it is "Annual", "Emergency" or "Unpaid" type of leave. Text field1: Date Text field2: Date Text field3: Reason		Features Background = "background-image=url(img/carInwater1.jpg)"									

Figure 4.3.41: Leave details interface

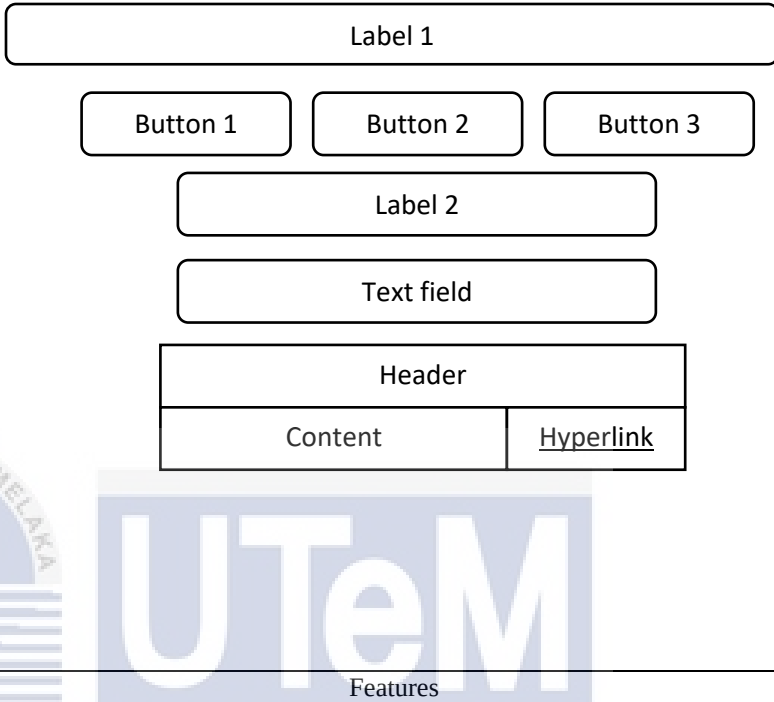
Title	View salary (Supervisor, Staff)	Designer	Aainina Farhainn Binti Yusoff
Project	AD-Gate	Page	42
		Description	Employee excluding owner can view their monthly salary here and print their pay slip.
Description			
Label 1: “Salary ” Label 2: “Date(current date) Time (current time) Currently login: (current user)” Button 1: ” Logout” button #../logout.php Button 2: “Main Menu” button #../mainMenu.php Button 3: “Back” button #mainMenu.php Button 4: “Add service” button #staff.php Text field: Insert to search in the content field. Header: Consists of “Salary ID”, “Month”, “Net Pay” And “Action”. Content: List of salary details. Hyperlink: “Status” hyperlink #paySlip.php		Label 1 Button 1 Button 2 Button 3 Label 2 Text field Header Content <u>Hyperlink</u> Features Background = “background-image=url(img/carInwater1.jpg)”	

Figure 4.3.42: View salary interface

4.4 Conclusion

This chapter discussed more about how design of the system is being built which include all type of design such as conceptual design, logical, physical and user interface. Each type provide different structure and function but with the same objectives. All the design type is related to each other to make the system work. The design is construct and being implement to make it real and can be used by targeted user.

CHAPTER V

IMPLEMENTATION



5.1 Introduction



This chapter discuss about the usage of the undertaking those two (2) sections which are the framework advancement and database execution. The system development environment will be explained on how the installation step, assign admin login and starting the database service. Besides that, it also consists about the database creation and database object. For the database implementation includes the DDL or DCL statements in the chosen DBMS which is mysql wampserver (127.0.0.1 via TCP/IP). In this database includes main processes such as stored procedures and trigger by using this programming language.

5.2 Software Development Environment Setup

This section will explain about the initial setup of the project AD-Gate. All the components that are required for this project will be explained. The architecture used by the project is the three (3) – tier of system architecture.

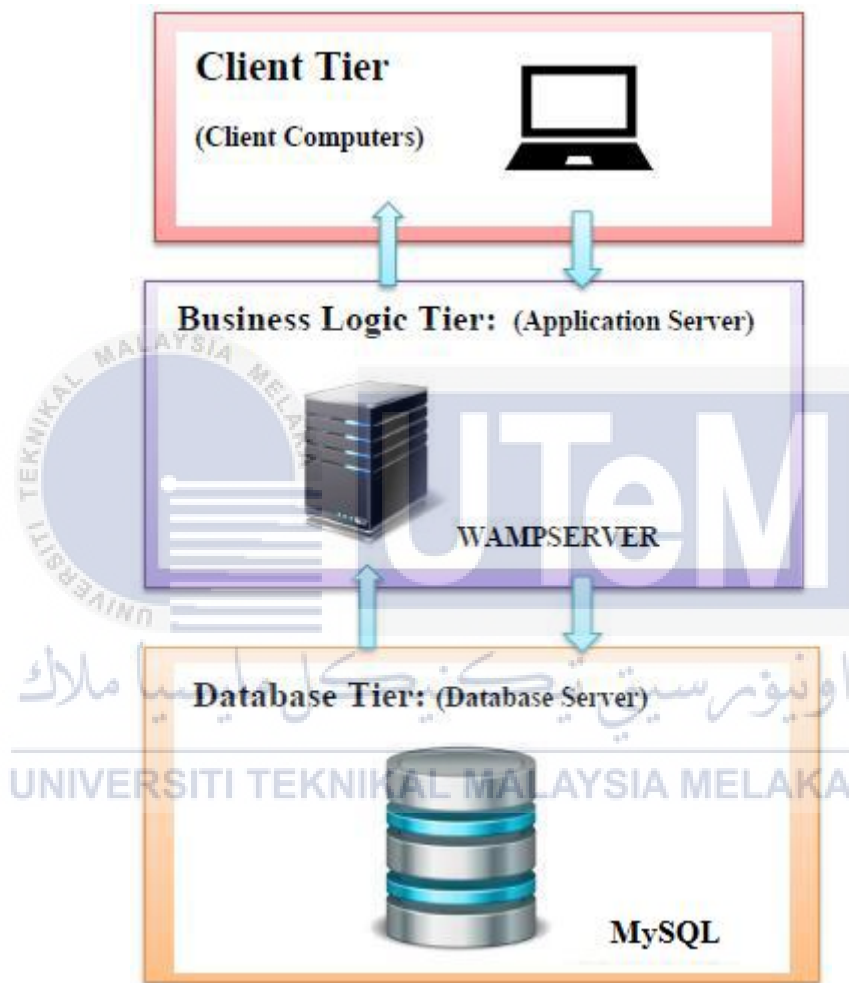


Figure 5.1: Three (3) – Tier System Architecture

5.2.1 Software Development Setup

The software that will be used during development of the AD-Gate System is Adobe Dreamweaver CS3.lnk, in specific by using Hypertext Preprocessor (PHP) Language. To act as platform for Database Management, MySQL wampserver (127.0.0.1 via TCP/IP) will be used to store all the required data. Last but not least, WampServer version 2.4 will function as a server to integrate between the database and interfaces of system.

5.2.1.1 Software Development Setup - Server

For the server parts, user need to type “http://localhost” in the web browser such as Google Chrome or Mozilla Firefox, the web browser will display the main page of the WampServer. User need to create a folder that will store the entire interface or the PHP language in the registry "C:\wamp\htdocs so that user can view the interface in the web browser.

Step 1: Obtain a copy of WAMP by download

To obtain a copy of WAMP, user needs to download it from <http://www.wampserver.com/en/download.php>. It will provide an option whether 32 or 64-bit environment depending your computer's configuration. In addition this download includes a phpMyAdmin to help you manage better on databases through web based GUI.

Step 2: Install the software

WAMP is downloaded and uncompressed; user will need to start the installation process.



Figure 5.2: WampServer installation

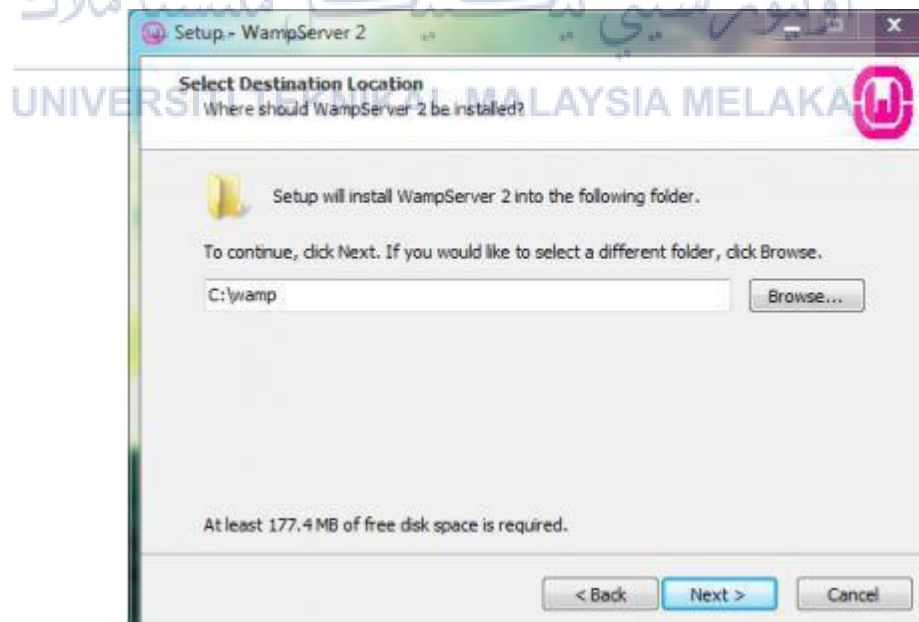


Figure 5.3: Directory interface

Diagram 5.3 shows that the user need to accept the license agreement. User may accept since it is a GPL license. The next step is user is required to select the folder to place the install WAMP server. The c:\wamp will be default; however user can place the install folder into any directory they choose.

After selecting the directory, user will have an option to setup icons. Click *Next* and then clicking *Install* to confirm the installation again.

User will be asked to choose the default browser. Internet Explorer will act as default during the installation.

Next, user need to set PHP mail as default and may connect to SMTP as show in diagram 5.4. WAMP is installed on computer or note book once the installation process complete.

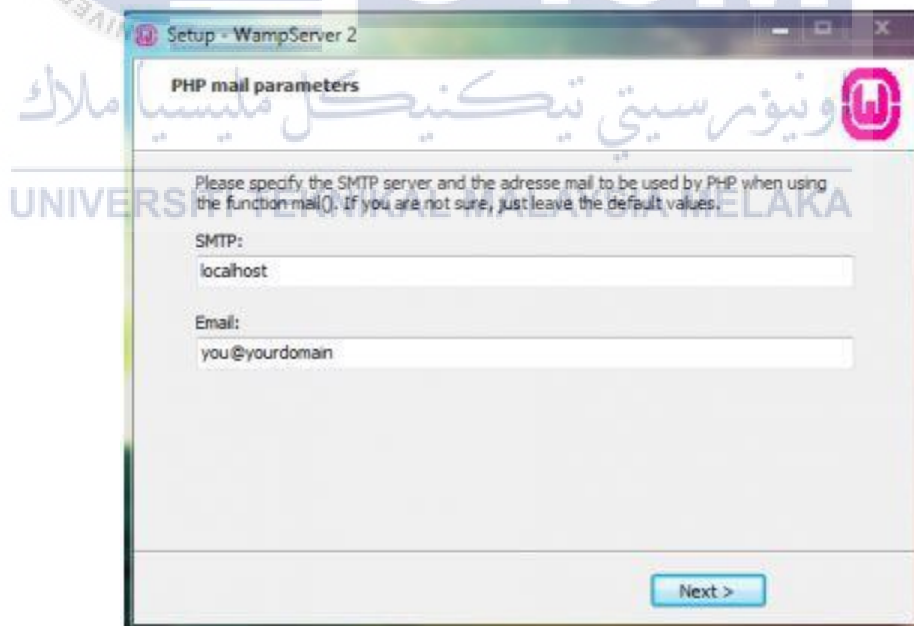


Figure 5.4: WampServer setup

Step 3: Testing the installation

Using the icons created, or click *Start > All Programs > WampServer > start WampServer*, then user can launch the management console. Once opened, icon shows on diagram 5.4 will pop-up at the lower right hand corner of screen.

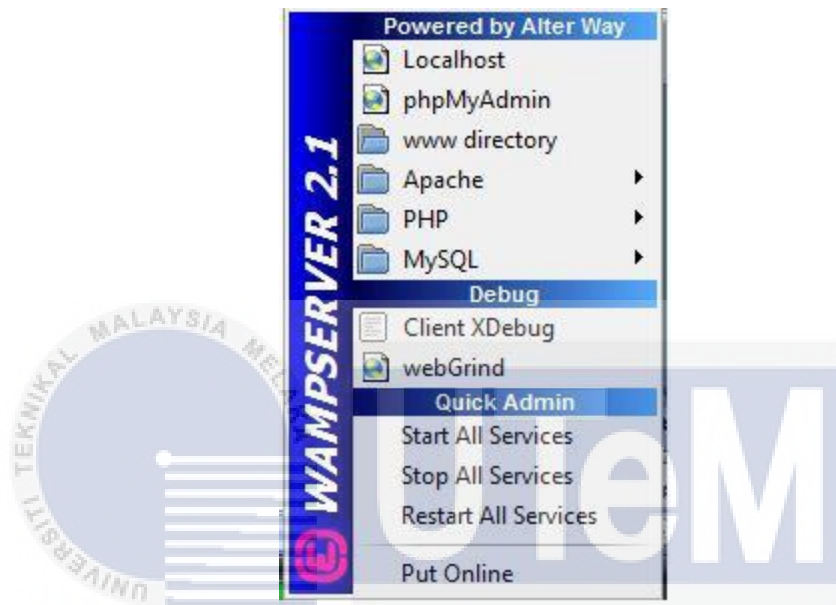


Figure 5.5: WAMP Server Launch Management Console

If WAMP not started, click *Start All Services*. The WAMP can be check whether already running or not by looking at the icon in the toolbar. If red -stopped, green - running while orange – some services are running.

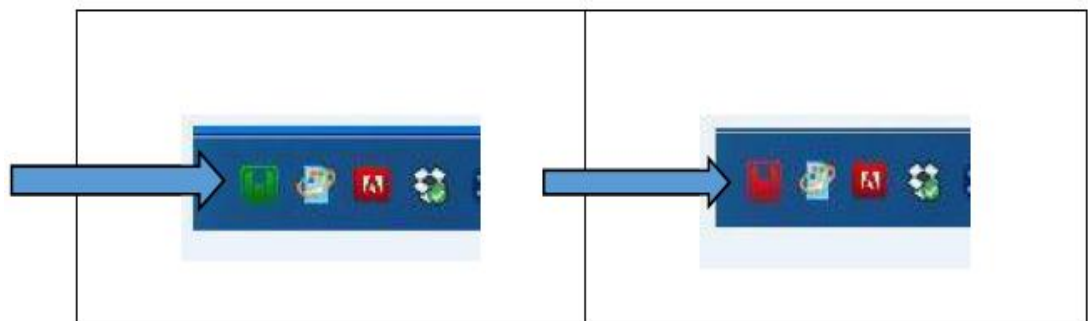


Figure 5.6: WAMP Server Services Icon in the Toolbar

In WAMP management console, click *Localhost* to test if everything installed correctly. If there are configuration interface in browser as shows on diagram 5.6, then everything is working.

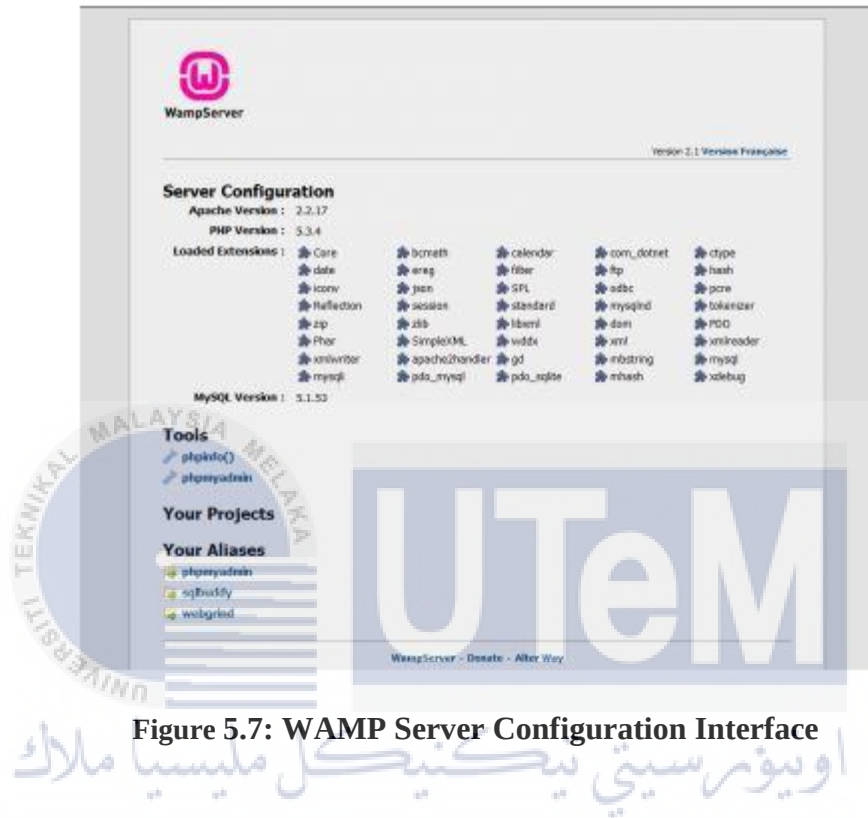


Figure 5.7: WAMP Server Configuration Interface

5.2.1.2 Database Development Setup - Server

Database server refers to back-end system in client/server architecture. Database server functions perform tasks such as data analysis, storage and manipulation. It related to database management system (DBMS). DBMS is collection of program that enables to extract information from database. DBMS used in this system is (PHPMyAdmin MySQL WampServer). This DBMS has been chosen as it is the reliable way to perform a tasks such as retrieve, create, update and delete database objects. It also runs SQL statements and scripts, edit and debug SQL code and manipulate data.

Step 1: Configuring MySQL database

Since WampServer has already provided MySQL, it is much easier to use as it only need to click phpMyAdmin in the WAMP Server Configuration Interface.

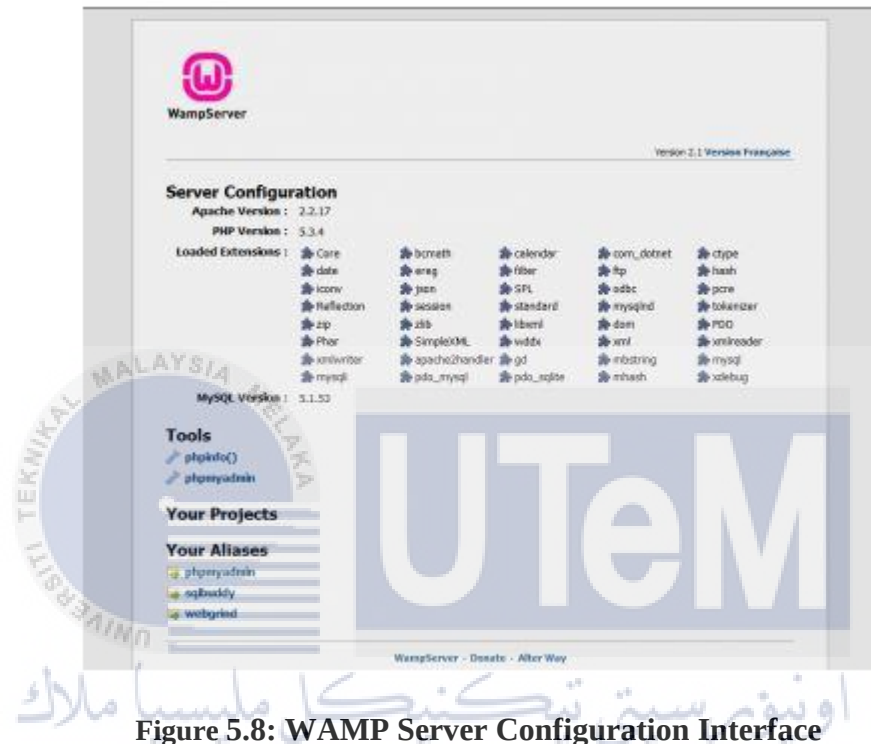


Figure 5.8: WAMP Server Configuration Interface

After phpMyAdmin being clicked, this interface will be shown as figure 5.8.

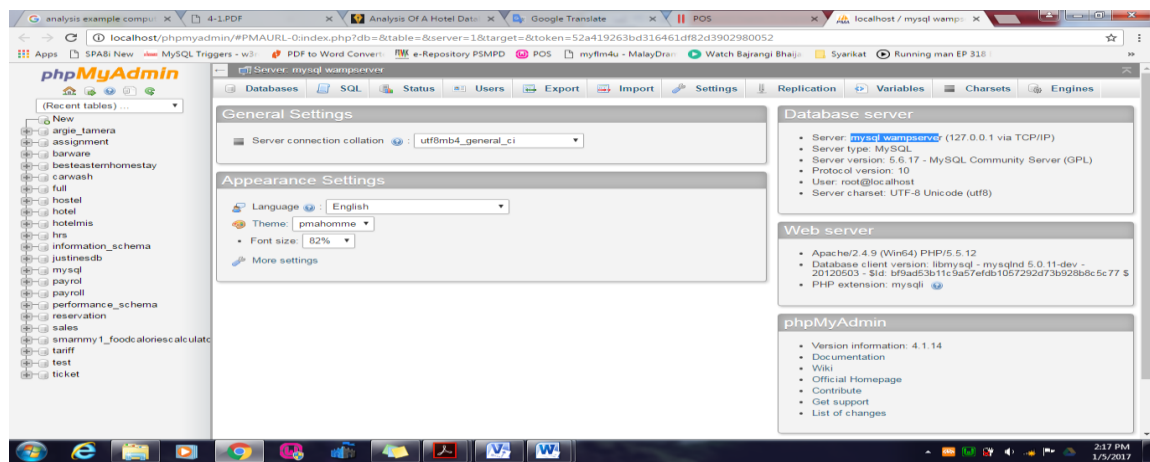


Figure 5.9: phpMyAdmin database

If user wants to create a database, just click new on the left side bar. Then, the new database will be created. User need to insert the database name in provided field. If the database is created, then user can proceed on create a table, trigger or procedure in the database.

5.3 Database Implementation

This section will explained about how MySQL query is being used in accessing the database during the development of the system. There are a few ways to access the database data.

a) CREATE TABLE clause

Create table is create table based on the ERD. The example of create table is in Figure 5.10 and the others will be include in Appendix D.

```
CREATE TABLE `admin` (
  `admin_id` varchar(10) NOT NULL,
  `password` varchar(10) NOT NULL,
  `admin_name` varchar(50) NOT NULL,
  `admin_number` varchar(15) NOT NULL,
  PRIMARY KEY (`admin_id`)
);
```

Table 5.1: CREATE TABLE clause

b) SELECT statement

SELECT statement query to display data from database. The example of query is in Figure 5.11.

```
SELECT * FROM EMPLOYEE;
```

Table 5.2: SELECT Statement

c) WHERE clause statement

WHERE clause statement is use to display an information with some condition and the example of query as shown in Figure 5.12.

```
SELECT * FROM EMPLOYEE WHERE EMP_NAME='Fikri';
```

Table 5.3: WHERE Clause

d) TRIGGER clause

TRIGGER clause will automatically execute when a certain event occur in the table of database. Figure 5.13 show the example of trigger. The other example of the trigger can refer on the Appendix E.

```
DROP TRIGGER IF EXISTS `advInsert`;  
DELIMITER //  
CREATE TRIGGER `advInsert` BEFORE INSERT ON `advance`  
FOR EACH ROW BEGIN  
    INSERT INTO adv_seq VALUES (NULL);  
    SET NEW.adv_id = CONCAT('ADV', LPAD(LAST_INSERT_ID(), 4, '0'));  
END  
//  
DELIMITER ;
```

Table 5.4: TRIGGER Clause

e) Stored Procedure

Stored procedure is used to control the mechanism of the database. This stored procedure will return the result set of the information from database. Figure 5.14 shown the example of trigger. Other example of the procedure can refer on the Appendix F.

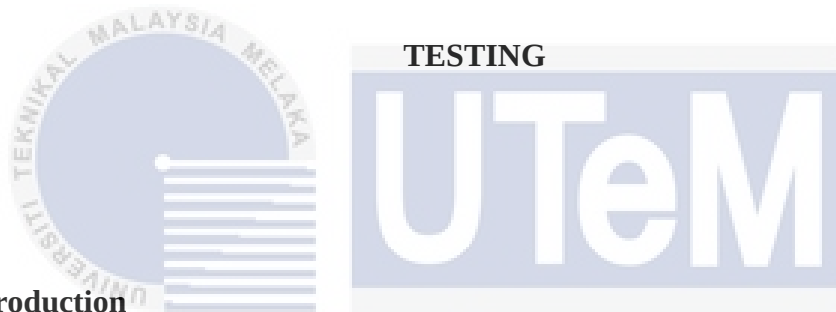
```
CREATE DEFINER=`root`@`localhost` PROCEDURE `admin_insert_procedure`(  
    IN admin_id varchar(10),  
    IN password varchar(10),  
    IN admin_name varchar(100),  
    IN admin_number int(11)  
    )  
    BEGIN  
  
        INSERT INTO company  
        (admin_id, password, admin_name, admin_number)  
        VALUES  
        (admin_id, password, admin_name, admin_number);  
    END$$
```

Table 5.5: Stored Procedure

5.4 Conclusion

A database can be thought of as a set of logically related files organized to facilitate access by one or more applications programs and to minimize data redundancy. Database, also called electronic database, any collection of data, or information that is specially organized for rapid search and retrieval by a computer. Databases are structured to facilitate the storage, retrieval, modification, and deletion of data in conjunction with various data-processing operations. A database management system (DBMS) extracts information from the database in response to queries.

CHAPTER VI



6.1 Introduction

In this chapter will discuss about testing period and activity of the Mobile-web Gateway for Automotive Detailing SME's (AD-Gate) system. Testing is a procedure with the objectives of identifying issues in a system or software and to know the quality level to fulfill user needs. It has been conducted on the AD-Gate system to validate and verify the system so that it can live up to its requirements of the organization. The system testing is important as it can avoid mistakes that are visible to users and also to avoid organization involved has a bad reputation.

Software testing is a very challenging task. But, testing is not limited to the implementation of the system with the purpose of finding defects. It is also need to determine test plan, test strategy, test design, test results and analysis during the testing phase. The software testing can be made effective and efficient by following the rules

such as pick a suitable set of test methods. This can gain confidence that the system will work smoothly and free from any errors.

The strategy for doing this system testing is for Fikri Detailing Car Care N Beauty as the client. After all the testing made, a questionnaire and an interview session being made in order to know whether this system meet user's requirement or not.

6.2 Test Plan

Test plan is a document that contains of detailed procedures that determine the scope, approach, resources and schedule of all testing activities. Test plan is also used for to help the testing activities; therefore it will achieve an efficient testing for the system.

6.2.1 Test Organization

On this topic will explain the person involve in the testing phases. This testing group will responsible in managing, executing and checking. The tester developer will lead the testing process and the main predominant in testing organization. The end users also aid to the testing group of system functionalities. The detailed about the person who involved in testing process is shown in Table 6.1 below.

Table 6.1: Test Organization

Tester ID	Name	Roles	Responsibilities
	Aainina Farhainn Binti Yusoff	System Developer	Execute integration and component test.
	Amir Kasim Syarifuddin	Software Tester	Analyze and review the

			functionality of the requirements. Monitoring the system performance.
E2	Mira	Client	Responsible in testing this system in daily sales made by her company. Analyze and review the functionality of the requirements.

6.2.2 Test Environment

In this sub topic will explain detail about the location of where this system is been tested. Table 6.2 shows the details of testing that has been made.

Table 6.2: Environment Setup Specification

System Configuration	Specification
Operating System	Windows 7 / android
Operating system	phpMyAdmin MySQL
Server	WampServer 2.4
Web browser	Google Chrome, Mozilla Firefox, Safari
System / Programming Language	Hypertext Preprocessor(PHP), Hyper Text Markup Language(HTML)

Besides that, this testing being done at Fikri Detailing Car Care N Beauty in Taman Muzaffar Heights, Ayer Keroh, Melaka where they have tested this system for several days in order to test whether their requirement is fulfill or not.

6.2.3 Test Schedule

Test schedule is a record of testing time table made for the system. All the testing made is based on the module stated for the system. The testing schedule consist of the module, testing type, start date, end date and the duration take to complete the system. Table 6.3 describe the testing process in details.

Table 6.3: Test Schedule Detail

Activities	Description	Start Date	End Date	Duration
Unit Testing	Used to test functions and code module	1 December 2016	3 December 2016	3 days
Integration Testing	Used to test integrated module and verify combined functionality after integration.	4 December 2016	6 December 2016	3 days
System Testing	Evaluate system compliance with its specific requirements.	7 December 2016	9 December 2016	3 days
Acceptance Testing	Test completed system to end user.	13 December 2016	15 December 2016	3 days

6.3 Test strategy

As for AD-Gate system, Dynamic Testing will be used to evaluate this system. The execution of the software of a component or system is what involves in Dynamic Testing. Dynamic Testing method is divided into two different methods which are known as Black Box Testing and White Box Testing. Black Box Testing is known as behavioral testing which focus on the design of the system, while White Box Testing is a testing that permits user to examine the internal structure of the program. Table 6.4 describe in details about this approaches.

Table 6.4: Details of testing type

Approaches	Explanations
White Box Testing	Testing that evaluate the internal structure of the program or evaluating system through developer using the program code. White box testing has three different technique which are statement coverage technique, branch coverage technique and lastly path coverage technique.
Black Box Testing	Testing the system through their functional or non-functional without references to the internal structure of the component or system. Black box testing is focused solely on the output generated in respond to selected input and execution condition.

6.4 Test Design

6.4.1 Test Description

This sub topic will explain the test to be done for every module stated in introduction section. Table 6.5 until Table 6.11 will describe the test description in detail according to the system modules.

i) Login details

Login module is important for authorized user. User involve in this module is Admin, Owner, Supervisor and Staff. Users are required to enter ID and password in order to log in into the system. Below are the Table 6.5 that will display the test details for Admin while Table 6.6 are for the Owner, Supervisor and Staff.

Table 6.5: Test Case of Login for Admin

Test Case ID	Input Test/Data	Action	Expected Output
ADG A/01	Admin_id : blank Password : blank	No input data	Error: fill in your username and password
ADG A/02	Admin_id : a1 Password : blank	Password left blank	Error : invalid email or password
ADG A/03	Admin_id : blank Password : *****	Admin_id left blank	Error : invalid email or password

ADG A/04	Admin_id : a1 Password : *****	All input inserted but misspelled	Error : invalid email or password
ADG A/05	Admin_id : a1 Password : *****	All input inserted and spell correctly	Successfully login!

Table 6.6: Test Case of Login for Owner, Supervisor, Staff

Test Case ID	Input Test/Data	Action	Expected Output
ADG B/01	emp_id : blank Password : blank	No input data	Error: fill in your username and password
ADG B/02	emp_id : e2 Password : blank	Password left blank	Error : invalid email or password
ADG B/03	emp_id : blank Password : *****	Admin_id left blank	Error : invalid email or password
ADG B/04	emp_id : e2 Password : *****	All input inserted but misspelled	Error : invalid email or password
ADG B/05	emp_id : e2 Password : *****	All input inserted and spell correctly	Successfully login!

ii) Company details

Table 6.7 shows the test case for company details. Admin will insert the company details and it will store in database.

Table 6.7: Test Case of company details

Test Case ID	Input Test/Data	Action	Expected Output
ADG C/01	SSM : blank SSM number : blank Company : blank Address : blank Phone number : blank Owner : blank Password : blank Phone : blank	No input provided	Error: Fill in required data.
ADG C/02	SSM : blank SSM number : blank Company : blank Address : blank Phone number : blank Owner : blank Password : blank Phone : blank	If either one is blank	Error: Fill in required data.
ADG C/03	SSM: Mencuci kereta, polish, wax, aksesori kereta. SSM number : MA0199029-D Company : Fikri Detailing Car Care N	All input is inserted	Data has been saved.

	Beauty Address : No. 7A, Jalan MH 1 Taman Muzaffar Heights, 75450 Ayer Keroh, Melaka Phone number : 06- 22889790 Owner : Fikri Password : ***** Phone : 0126088373		
--	---	--	--

iii) Employee

Table 6.8 shows the test case of employee details. Employer will insert the details of employee details in the provided field to be kept in database. There are four column in employee database that cannot be null which is name, password, position and basic salary.

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Table 6.8: Test Case of Employee Details

Test Case ID	Input Test/Data	Action	Expected output
ADG D/01	Name : blank Password : blank Phone number : blank Position : blank Basic salary : blank IC number : blank Age : blank Status : blank Previous job : blank	No input provided	Error : Fill all field.

ADG D/02	Name : blank Password : **** Phone number : 0194563456 Position : Staff Basic salary : 900.00 IC number : blank Age : blank Status : blank Previous job : blank	Any required data is blank	Error: Fill in required data.
ADG D/03	Name : Farid Password : **** Phone number : blank Position : Staff Basic salary : 900.00 IC number : blank Age : blank Status : blank Previous job : blank	Only required data is inserted	Data has been saved.
ADG D/04	Name : Farid Password : **** Phone number : 0194563456 Position : Staff Basic salary : 900.00 IC number : 890807302990 Age : 30 Status : Active Previous job : Technician	All data inserted	Data has been saved.

iv) Salary

Table 6.9 shows the test case of salary details. Employer will insert all the details of employee salary and kept it in database. All the information is required.

Table 6.9: Test Case of Salary Details

Test Case ID	Input Test/Data	Action	Expected Output
ADG E/01	Month : blank Employee ID : blank Basic salary : blank Overtime : blank Commission : blank Allowances : blank Gross pay : blank EPF : blank Advance : blank Deduction : blank Net pay : blank	No input provided	Error: Fill all field.
ADG E/02	Month : January 2016 Employee ID : blank Basic salary : 1200.00 Overtime : 90.00 Commission : 80.00 Allowances : 90.00 Gross pay : 1460.00 EPF : 96.00 Advance : 500 Deduction : 596.00 Net pay : 864.00	Any required data is not inserted.	Error: Field All Field.

ADG E/03	Month : January 2016 Employee ID : EMP001 Basic salary : 1200.00 Overtime : 90.00 Commission : 80.00 Allowances : 90.00 Gross pay : 1460.00 EPF : 96.00 Advance : 500 Deduction : 596.00 Net pay : 864.00	All required data is inserted.	Data has been saved.
----------	---	--------------------------------	----------------------

v)

Daily sales

Table 6.10 shows the test case of daily sales details. Employer will insert all the details of daily sales and it will keep it in database and all the information is required.

Table 6.10: Test Case of daily_sales Details

Test Case ID	Input Test/Data	Action	Expected Output
ADG F/01	Date : blank Grand total : blank Commission : blank Stuff : blank Meals : blank Others : blank	No input provided	Error: Fill all fields.

	Net total : blank		
ADG F/02	Date : blank Grand total : 123.00 Commission : 13.00 Stuff : 13.00 Meals : 20.00 Others : 0.00 Net total : 64.00	Any required data is not inserted.	Error: Field All Field.
ADG F/03	Date : 2016-12-29 Grand total : 123.00 Commission : 13.00 Stuff : 13.00 Meals : 20.00 Others : 0.00 Net total : 64.00	All required data is inserted.	Data has been saved.

vi) Customer

Table 6.11 shows the test case of customer details. Users except admin and staff will insert all the details of customer details and it will keep it in database and the information of car plate, car model and car size is required.

Table 6.11: Test Case of customer Details

Test Case ID	Input Test/Data	Action	Expected Output
ADG G/01	Car plate : blank Owner name : blank	No input provided	Error: Fill all fields.

	Phone number : blank Car model : blank Car size : blank		
ADG G/02	Car plate : blank Owner name : Maziz Phone number : 01190907898 Car model : Viva Car size : S	Any required data is not inserted	Fill the required field.
ADG G/02	Car plate : JKW8425 Owner name : blank Phone number : blank Car model : Viva Car size : S	All the required data is inserted	Data have been saved.
ADG G/03	Car plate : JKW8425 Owner name : Maziz Phone number : 01190907898 Car model : Viva Car size : S	All data inserted	Data have been inserted

vii) Service

Table 6.12 shows the test case of service details. Employer and supervisor has the authority to insert all the service details and it will keep it in database and all the information is required.

Table 6.12: Test Case of service Details

Test Case ID	Input Test/Data	Action	Expected Output
ADG H/01	Service name : blank Price : blank Size : blank	No input inserted	Error: Fill all fields.
ADG H/02	Service name : blank Price : 10 Size : S	Any required data is not inserted	Fill all required fields.
ADG H/03	Service name : Normal wash & vacum Price : 10 Size : S	All data inserted	Data have been saved.

viii) Attendance

Table 6.13 shows the test case of attendance details. Supervisor and staff will insert the attendance details and it will keep it in database and all the information is required.

Table 6.13: Test Case of attendance Details

Test Case ID	Input Test/Data	Action	Expected Output
ADG I/01	Employee ID : blank	No input inserted	Error: fill the details.
ADG I/02	Employee ID : EMP001	Data is inserted	Data have saved

IX) Leave

Table 6.14 shows the test case of leave details. Supervisor and staff will insert the leave's details of and it will keep it in database and all the information is required.

Table 6.14: Test Case of leave Details

Test Case ID	Input Test/Data	Action	Expected Output
ADG J/01	Type of leave : blank Start date : blank End date : blank Reason : blank	No input inserted	Error: Fill all fields
ADG J/02	Type of leave : Annual Start date : blank End date : 2016-09-03 Reason : Kampung	Any required data is not inserted	Fill required fields
ADG J/03	Type of leave : Annual Start date : 2016-09-01 End date : 2016-09-03 Reason : Kampung	All the data inserted	Data have been saved.

6.4.2 Test Data

Test data is the part to test the actual data that will be used to ensure the system for correctness and system effectiveness. Table 6.15 and Table 6.16 below show the data for the login and employee details.

i) Login Details

Table 6.15: Details of Login Test Data

Test No	User	Attribute	Data
T/01	Admin	Admin_id	A1
		password	**
T/02	Owner	Emp_id	E2
		password	**
T/03	Supervisor	Emp_id	EMP001
		password	**
T/04	Staff	Emp_id	E3
		password	**

ii) Company details

Table 6.16: Details of company Test Data

Test No	User	Attribute	Data
T/05	Admin	Comp_id	C2
		Admin_id	A1
		SSM_name	Mencuci kereta , polish, wax, aksesori kereta.

		SSM_no	MA0199029-D
		Comp_name	Fikri Detailing Car Care N Beauty
		Comp_address	No. 7A, Jalan MH 1 Taman Muzaffar Heights, 75450 Ayer Keroh, Melaka
		Comp_phone	06-22889790

iii) Employee details

Table 6.17: Details of employee Test Data

Test No	User	Attribute	Data
T/06	Admin/Owner	Emp_id	e3
		Emp_name	Haidil
		Emp_password	**
		Emp_phone	01189096908
		Emp_position	Staff
		Emp_salary	900.00
		Emp_ic_no	940124105630
		Emp_age	23
		Emp_status	Active
		Emp_previous_job	Technician
		Comp_id	C2

iv) Salary details

Table 6.18: Details of salary Test Data

Test No	User	Attribute	Data
T/07	Owner	Salary_id	SLRY001

		Salary_month	November 2016
		Salary_basic	1200.00
		Salary_overtime	18.00
		Salary_commission	200.00
		Salary_allowances	200.00
		Salary_EPF	96.00
		Salary_advance	500.00
		Salary_gross_pay	1618.00
		Salary_deduction	596.00
		Salary_net_pay	1022.00
		Salary_status	Paid
		Emp_id	EMP001

v) Daily sales details

Table 6.19: Details of daily sales Test Data

Test No	User	Attribute	Data
T/08	Owner	date	2016-12-29
		Grand_total	123.00
		Commission	13.00
		Stuff	13.00
		Meals	20.00
		Others	0.00
		Net_total	64.00
		Emp_id	E2

vi) Customer details

Table 6.20: Details of customer Test Data

Test No	User	Attribute	Data
T/09	Owner/supervisor/staff	Car_plate	JKW8425
		Car_owner	Maziz
		Car_owner_tel	01190907898
		Car_model	Viva
		Car_size	S

vii) Service details

Table 6.21: Details of service Test Data

Test No	User	Attribute	Data
T/10	Owner/supervisor	Service_id	12
		Service_name	Normal wash & vacuum
		Price	10
		Car_size	S

viii) Attendance details

Table 6.22: Details of attendance Test Data

Test No	User	Attribute	Data
T/11	Supervisor/staff	Att_id	ATT0001
		Att_date	2016-08-28
		Att_time_in	21:45:59

		Att_time_out	22:03:26
		Emp_id	EMP001

xi) Leave details

Table 6.23: Details of leave Test Data

Test No	User	Attribute	Data
T/12	Supervisor/staff	Mc_id	MC003
		Mc_type	Annual
		Mc_start_date	2016-08-09
		Mc_end_date	2016-08-09
		Mc_reason	kampung
		Mc_status	Approve
		Apply_date	2016-08-01
		Emp_id	EMP001

6.5 Test Result and Analysis

This section will describe about the validation of the data over AD-Gate system. This test document is to see whether the result in test design is the same with the test results and analysis document. Table below shows the details of the test document.

i) Login details

Table 6.24: Test Result and Analysis of Valid Login Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1000	Valid input: All columns are fulfilling.	System will prompt login successful!	Pass

Table 6.25: Test Result and Analysis of Invalid Login Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1001	Invalid input: validate that the user id and password are incorrect	System will prompt invalid id or password.	Pass

ii) Company details

Table 6.26: Test Result and Analysis of Valid Company Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1002	Valid input: All required columns are fulfilling.	System will prompt data have been saved!	Pass

Table 6.27: Test Result and Analysis of Invalid Company Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1003	Invalid input: validate that all the required data are fulfilling.	System will prompt required!	Pass

iii) Employee details

Table 6.28: Test Result and Analysis of Valid Employee Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1004	Valid input: All required columns are fulfilling.	System will prompt data have been saved!	Pass

Table 6.29: Test Result and Analysis of Invalid Employee Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1005	Invalid input: validate that all the required data are fulfilling.	System will prompt required!	Pass

iv) Salary details

Table 6.30: Test Result and Analysis of Valid salary Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1006	Valid input: All required columns are fulfilling.	System will prompt data have been saved!	Pass

Table 6.31: Test Result and Analysis of Invalid Salary Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1007	Invalid input: validate that all the required data are fulfilling.	System will prompt required!	Pass

v) Customer details

Table 6.32: Test Result and Analysis of Valid Customer Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1008	Valid input: All required columns are fulfilling.	System will prompt data have been saved!	Pass

Table 6.33: Test Result and Analysis of Invalid Customer Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1009	Invalid input: validate that all the required data are fulfilling.	System will prompt required!	Pass

i) Service details

Table 6.34: Test Result and Analysis of Valid Service Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1010	Valid input: All required columns are fulfilling.	System will prompt data have been saved!	Pass

Table 6.35: Test Result and Analysis of Invalid Service Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1011	Invalid input: validate that all the required data are fulfilling.	System will prompt required!	Pass

- i) Attendance details

Table 6.36: Test Result and Analysis of Valid Attendance Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1012	Valid input: All required columns are fulfilling.	System will prompt data have been saved!	Pass

Table 6.37: Test Result and Analysis of Invalid Attendance Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1013	Invalid input: validate that all the required data are fulfilling.	System will prompt required!	Pass

- i) Leave details

Table 6.38: Test Result and Analysis of Valid Leave Details

Test Number	Action	Result	Pass initial (pass/fail)
ADG_1014	Valid input: All required columns are fulfilling.	System will prompt data have been saved!	Pass

Table 6.39: Test Result and Analysis of Invalid Leave Details

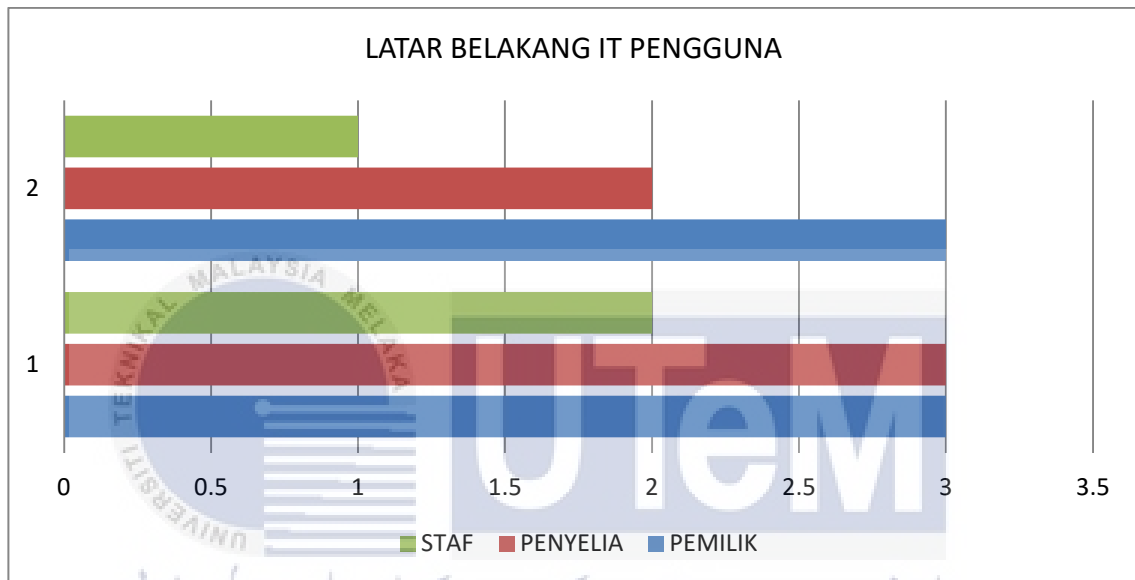
Test Number	Action	Result	Pass initial (pass/fail)
ADG_1015	Invalid input: validate that all the required data are fulfilling.	System will prompt required!	Pass

Throughout this development of AD-Gate system, I have conducted a testing involving Fikri Detailing Car Care N Beauty's owner which is Mr. Fikri. He manages to test this system several days as this system may be helpful after using it. So, questionnaires have been distributed to Mr. Fikri's employee and himself, a questionnaire about the effectiveness of this AD-Gate system for the organization.

Below is the output of the questionnaire. This questionnaire consists of 36 questionnaire involving user demography, IT background, current method of management, a question about AD-Gate system such as is it a user-friendly web-mobile app, is it fulfill the interactivity and management of company, is the system systematic and efficient and last but not least user opinion on improvise this system.

Table 6.40: IT Background of the user

LATAR BELAKANG IT PENGGUNA		
JAWATAN	1	2
PEMILIK	3	3
PENYELIA	3	2
STAF	2	1
Jumlah	8	6



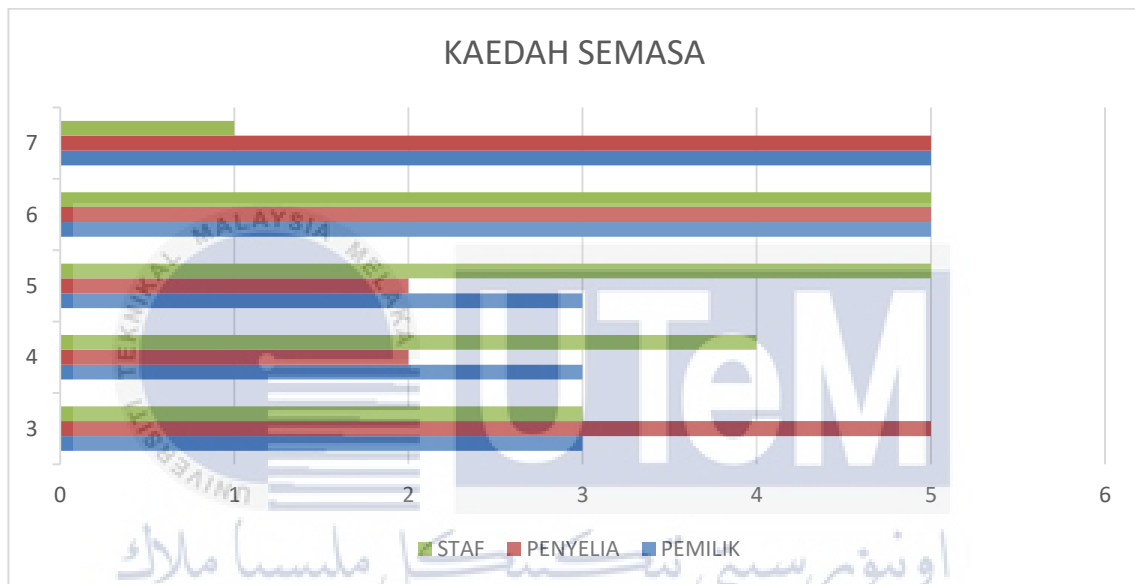
LABEL UNIVERSITI TEKNIKAL MALAYSIA MELAKA

1.	Sila nilai diri anda mengenai pengetahuan IT anda.
2.	Saya menggunakan perisian komputer untuk merekod transaksi kewangan perniagaan.

From graph above, it can be conclude that most of the user has low IT literacy as the overall total for user's IT background only at scale 8 out of 15. To overcome this problem, a simple web-mobile based are being develop as this system provides a very simple and user-friendly.

Table 6.41: Current system

KAEDAH SEMASA					
JAWATAN	3	4	5	6	7
PEMILIK	3	3	3	5	5
PENYELIA	5	2	2	5	5
STAF	3	4	5	5	1
Jumlah	11	9	10	15	11



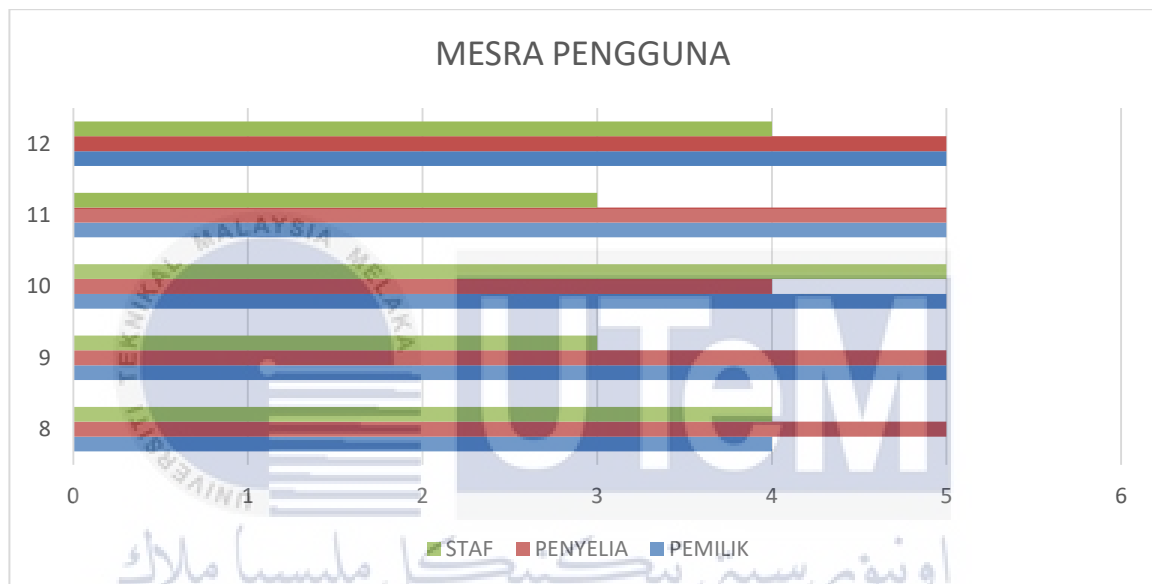
LABEL

3.	Saya memiliki lebih dari satu rekod jualan harian.
4.	Kaedah semasa memudahkan rekod jualan harian.
5.	Kaedah semasa mengambil masa yang singkat untuk menyimpan semula data ke dalam komputer.
6.	Majikan perlu menyemak semula rekod harian bulanan untuk membuat pengiraan gaji dan jualan.
7.	Kebarangkalian untuk kehilangan rekod jualan sangat tinggi.

The graph shows the current method system of Fikri Detailing from various parts of the question given. It can clearly be seen that employer has to go through each book to retrieve all the information for salary and sales. It also shows that user is less agrees that current method system ease the daily management.

Table 6.42: User-friendly interface

MESRA PENGGUNA					
JAWATAN	8	9	10	11	12
PEMILIK	4	5	5	5	5
PENYELIA	5	5	4	5	5
STAF	4	3	5	3	4
JUMLAH	13	13	14	13	14



LABEL

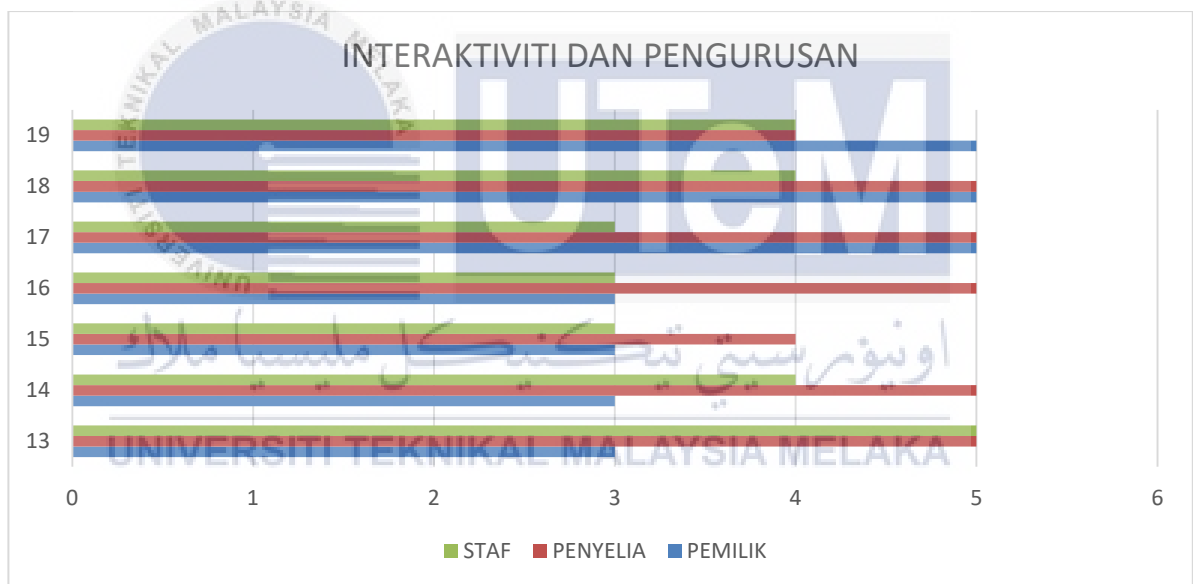
8.	Laman web ini membolehkan anda mula menggunakan kandungannya dengan mudah.
9.	Paparan penuh di mobil membolehkan anda melihat kandungannya dengan mudah.
10.	Menu navigasi membantu anda menggunakan laman web dengan mudah.
11.	Opsyen yang ada memudahkan proses navigasi anda.
12.	Pautan ke laman utama (main page) dari laman-laman utama memudahkan anda mengendalikan laman web ini.

In order to achieve objective Chapter 1.3 (2) which is to provide a system that is user-friendly suitable for targeted audience, question above have been provide in order to

know user opinion. Based on graph above, most of the question have high rank as the user is pleased to have such system that can operate easily.

Table 6.43: Interact ivy and management

INTERAKTIVITI DAN PENGURUSAN							
JAWATAN	13	14	15	16	17	18	19
PEMILIK	3	3	3	3	5	5	5
PENYELIA	5	5	4	5	5	5	4
STAF	5	4	3	3	3	4	4
Jumlah	13	12	10	11	13	14	13



LABEL

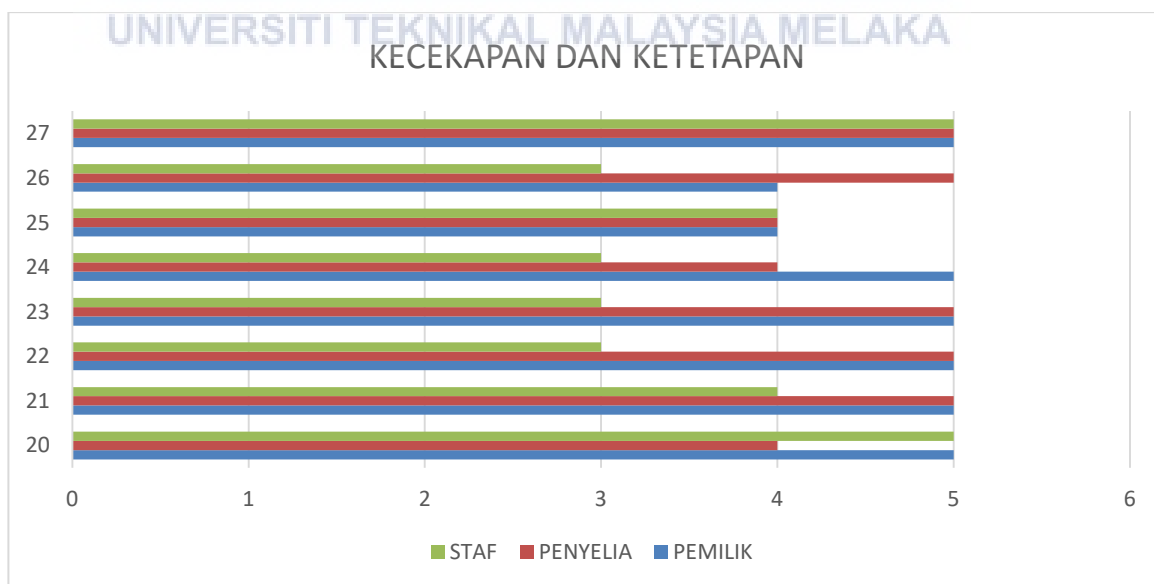
13.	Enjin pencari (search engine) di dalam laman ini berfungsi dengan baik.
14.	Apabila diklik, opsyen yang berkaitan di menu akan berfungsi seperti yang diharapkan.
15.	Apabila diklik, kebanyakan pautan yang diberikan untuk ke laman web lain berfungsi dengan baik.
16.	Elemen-elemen di dalam laman web ini sangat interaktif.
17.	Informasi yang direkodkan dapat membantu manjikan dalam membuat pengiraan

	gaji pekerja dan jualan.
18.	Laporan kewangan dapat disediakan dengan tepat melalui penggunaan laman ini.
19.	Laporan slip gaji dapat disediakan dengan tepat melalui penggunaan laman ini.

This graph is to identify whether objective in Chapter 1.3 (1) achieve or not. Most of the user rank 5 which is strongly agrees that financial report can be provided accurate. Besides that, user also strongly agrees that this system help employer in calculate employee salary and daily sales without need to calculate manually as the current method. However, user is slightly disagree about the button provides functioning well in the system. Thus, action will be taken to improve this unsatisfactory.

Table 6.44: Efficiency and systematic

KECEKAPAN DAN KETETAPAN								
JAWATAN	20	21	22	23	24	25	26	27
PEMILIK	5	5	5	5	5	4	4	5
PENYELIA	4	5	5	5	4	4	5	5
STAF	5	4	3	3	3	4	3	5
JUMLAH	14	14	13	13	12	12	12	15



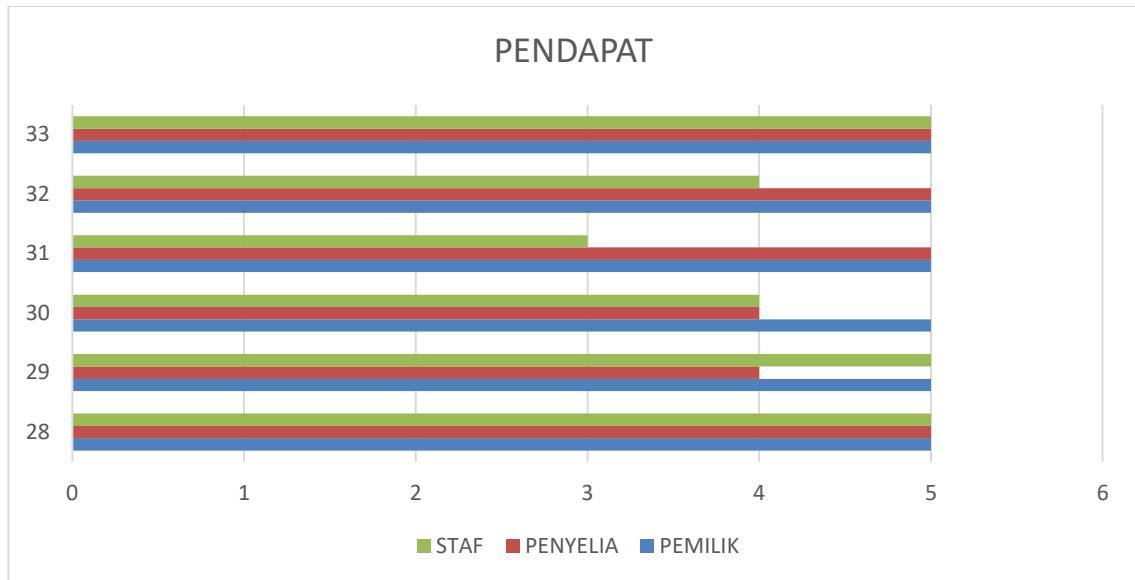
LABEL

20.	Sistem ini membantu dalam pengiraan jualan seharian.
21.	Sistem ini memudahkan pengguna mendapatkan laporan harian jualan.
22.	Sistem ini dapat membantu mengawal data daripada berulang.
23.	Sistem ini sangat sesuai digunakan di dalam syarikat.
24.	Sistem ini dapat mengurangkan risiko tunai ditangan tidak sama dengan jumlah untung seharian.
25.	Sistem ini menepati segala kriteria yang diperlukan dalam mengurus pengurusan harian syarikat.
26.	Sistem ini membantu dalam pekerjaan seharian.
27.	Sistem ini dapat menjimatkan masa dari segi mengisi data pelanggan dan servis.

As for objective in Chapter 1.3(3) which is to develop a solution that is systematic and efficient in terms of time, redundancy control and error control, above question have been distribute in order to know whether it meet the objective or not.

Table 6.45: User opinion

PENDAPAT						
JAWATAN	28	29	30	31	32	33
PEMILIK	5	5	5	5	5	5
PENYELIA	5	4	4	5	5	5
STAF	5	5	4	3	4	5
JUMLAH	15	14	13	13	14	15



LABEL

28.	Laman web ini mudah dikendalikan
29.	Laman web ini memberi informasi yang berguna
30.	Laman web ini sangat mesra pengguna.
31.	Perisian sistem banyak membantu saya dalam menyiapkan tugas.
32.	Saya akan menggunakan sistem ini.
33.	Saya akan mencadangkan sistem ini kepada syarikat yang lain.

This section is for knowing customer opinion of AD-Gate system. User strongly agrees that this system is very easy to use and maybe they will suggest this system for another company to use it.

6.6 Conclusion

As the conclusion, this chapter explains the method use to verify and validate the system to make sure the quality of the project have achieved through requirements. Testing must be planned thoroughly due to the cost of fixing one major defects can be very costly. Test plan consists of several test that examine varies aspects of the system. The next chapter will be discussed about project conclusion.



CHAPTER VII



7.1 Introduction

Mobile-web Gateway for Automotive Detailing SME's (AD-Gate) is a system developed for any carwash company to facilitate the company daily management at ease and also AD-Gate will fulfill my qualifications to achieve Bachelor of Computer Science (Database Management).

However, this system has many flaws but there are some advantages and it is to upgrade in a long-term duration. During the development of this system, there are a lot of knowledge that I have gained in terms of drafting the final report, designing the system and flow data. This is the most challenging part throughout my three and a half years in Universiti Teknikal Malaysia Melaka (UTeM).

Hence, this system has the ability to be developed more sophisticated with better expertise than my lack of knowledge and expertise in this area. Besides that, I think that this system has the value to go through market as it will help the daily management routine of a carwash company.

In conclusion, I have developed a system that is 80% achieving the main objectives despite of many shortcomings and failures in work. I am quite proud of my achievement as I was able to develop a system by myself.

7.2 Observation on Weakness and Strengths

a) Strength

- Can manage daily work via online (no more writing on a piece of paper).
- Can control the daily sales of a company.
- Simplify the accounting management to calculate salary and sales.
- Can view daily sales no matter where the user is.
- Can print a receipt, daily sales report or salary report as shown in Appendix H.
- Reduce the use of time when user wants to do a calculation.
- Can control staff management online.

b) Weakness

- There is no notification system.
- There is no error handling if there are data entry errors.
- This system does not provide backup and recovery.

7.3 Propositions of improvement

For the improvement of the system, it should be better if backup and recovery are implemented in the system. If there is data corruption or problems with the system, all the data can be retrieved without have to think about loss of the important data.

Other than that, it should be better if others weaknesses also being implemented in this system as if all the weaknesses covered then it will be a complete system without any error.

7.3 Contribution



AD-Gate system is a mobile-web application to be developed for carwash management. This system provides users to monitor daily sales. User can enter their daily sales, car in and out in this AD-Gate system and when the user wants to close the sale, users can view without having to calculate the sum of sales because this system will calculate automatically for the users.

In addition, the current problem which is the calculation of monthly salary can be reduced. This is because this system provides a module to calculate and store data related to this event. Besides that, it also provides a salary report based on a company's name and this will ease the user to obtain because it has a print features in it.

Moreover, this system also provides a module for employees and this will ease the employers to track employee movement. The employee may request leave online, can also include details of attendance and also view and print their monthly salary. Besides that, this system also provides any other module such as customer management where if the customer has debt with the company, the user can view it and it also can view the details of the customer.

Thus, this system is very useful for carwash management system as it has 80% fulfillment for the objectives. It will contribute in ease user management.

7.4 Conclusion

The conclusion that can be concluded after completing the system, it been developed to ease for the users to manage daily management of a company by implementing various functions in the system. Although the system is not met all the objectives, but it is still can function smoothly. However, if there is some improvements add to the system such as a user friendly system or backup and recovery is implemented the system will be more reliable and well developed.

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ATTACHMENT 1.1

APPENDIX A



اونيورسيتي تيكنيكل مليسيا ملاك

UNIVERSITI TEKNIKAL MALAYSIA MELAKA



SURUHANJAYA SYARIKAT MALAYSIA
COMPANIES COMMISSION OF MALAYSIA



PERAKUAN PEMBAHARUAN PENDAFTARAN
AKTA PENDAFTARAN PERNIAGAAN 1956

BORANG E (KAEDAH 13)

No. Pendaftaran

MA0199029-D

FIKRI DEATAILING CAR CARE N BEAUTY
NO. 7A, JALAN MH 1
TAMAN MUZAFFAR HEIGHTS
75450 AYER KEROH
MELAKA

Dengan ini diperakui bahawa Perniagaan yang dijalankan dengan nama

FIKRI DEATAILING CAR CARE N BEAUTY

telah didaftarkan dari hari ini sehingga **27 FEBRUARI 2017** menurut peruntukan-peruntukan Akta Pendaftaran Perniagaan 1956, dengan nombor yang ditunjukkan di sini dan tempat utama perniagaannya di **NO. 7A, JALAN MH 1 TAMAN MUZAFFAR HEIGHTS, 75450 AYER KEROH, MELAKA.**

Jenis Perniagaan

MENCUCI KERETA, POLISH, WAX, AKSESORI KERETA

Bertarikh di **MELAKA BANDARAYA BERSEJARAH** pada **29 FEBRUARI 2016.**

DATO' ZAHRAH ABD WAHAB FENNER

Pendaftar Perniagaan
Semenanjung Malaysia

Fikri Deatailing Car Care N Beauty SSM Form

SERVICES CAR SIZES	NORMAL WASH & VACUM	HYPER WASH & VACUM	ENGINE WASH + DRESSING	WAXING PACKAGE WASH	1 STEP 3 IN 1	2 STEP POLISH + WAXING	3 STEP POLISH COMPOUND WAXING	INTERIOR DASHBOARD	SEAT FABRIC	SEAT LEADER	GLASS CLEANING + POLISH	GLASS COATING 6 BULAN WARRANTY	HEADLAMP + FREE WASH	HEADLAMP COATING + FREE WASH	BODY COATING NO MAINTENANCE	BODY COATING FREE MAINTENANCE
S	RM10	RM15	RM10	RM39	RM120	RM160	RM220	RM25	RM120	RM80	RM120	RM200	RM60	RM120	RM900	RM1200
M	RM12	RM20	RM15	RM49	RM140	RM180	RM250	RM30	RM150	RM120	RM150	RM250	RM80	RM150	RM1000	RM1300
L	RM12	RM20	RM15	RM59	RM160	RM220	RM280	RM35	RM200	RM160	RM180	RM300	RM80	RM180	RM1200	RM1500
XL	RM28	RM30	RM20	RM69	RM180	RM250	RM320	RM40	RM250	RM200	RM200	RM400	RM100	RM200	RM1400	RM1700
2XL	RM30	RM30	RM20	RM79	RM200	RM300	RM380	RM50	RM280	RM200	RM250	RM450	RM100	RM230	RM1600	RM1900

Type of Services in Fikri Detailing Care Car N Beauty

POLISH, WAX, BODY COATING REMOVER, GLASS COATING WATERMARK, REMOVER HEADLAMP RESTORATION SEAT CLEANING, CARPET WASH SUPERBIKE POLISH	 FREE WAX!!		
	28-2-16 ✓ H Wash	2-2-16 Gun 50 Rm 50	12-1-16 44 2
	29-12-15 ff 20	14-12-15 60	17-1-15 20

Membership card for customer every time customer wash or wax

BALANCE AIR 8 TIN						
JumART						
18/3/16						
SERVICES	BIL	No PLAT	Time	Jenis KERA	CASH	AIR SERVICES
ASH	1	PMC 7796	10.00 am	SERENA	Rm 20	1 WASH.
WASH	2	MCT 7825	10.15 am	AIRIS	Rm 20	H. WASH.
WAXING	3	WPD 8751	10.50 am	Citra	Rm 65	WAXING
WASH	4	JF 6309	11.15 am	BETLE	Rm 10	WASH
WAXING	5	MCF 6828	12.15 pm	VIDS	Rm 10	WASH
ASH	6	WXL 1173	12.25 pm	VIVA	Rm 10	WASH.
ASH	7	WLG 9247	12.40 pm	ALZA	Rm 15 + Rm 5	WASH.
ASH	8	MCG 3410	12.40 pm	AXIA	C/trim	1 WASH.
ASH	9	WTB 7490	2.30	ingvi	Rm 10	WASH.
ASH	10	MCC 8288	2.30	VIDS	Rm 12	WASH.
ASH	11	WC 6663H	2.40	mini	Rm 20	H. WASH.
WASH	12	CA 4660	2.55	Ford Focus	Rm 10	H. WASH.
H	13	JKW 8425	3.10	VIVA	Rm 10	WASH
WASH	14	BFE 7495	3.20	ISWARA	Rm 30	1 H. WASH. Enjin
ASH	15	WC 5068J	3.40	TRIDIN	Rm 30	H. WASH.
WAXING	16	MAP 3566	3.40	SAPA	Rm 12	WASH.
WASH	17	MBK 8015	4.10	MUJI	Rm 12	WASH.
WASH	18	MAW 1667	4.15	KEPISA	Rm 15	H. WASH.
WIP	19	WUA 3311	4.45	Audi A4	Rm 20	H. WASH.
ASH	20	MCT 6941	4.55	Persona	Rm 20	H. WASH.
WASH	21	MCP 3078	5.10	SAGA	Rm 12	WASH.
	22	MCM 4330	5.10	Persona	Rm 12	WASH.
	23	MBD 8108	5.30	ANAZA	Rm 18	WASH.
	24	MEK 3577	5.30	CTR 350	Rm 15	H. WASH. - m -
	25	BGB 8696	6.15	Kenari	Rm 12	WASH.
	26	WC 642G	6.20	MERS	Rm 12	WASH.
	27	MCA 5054	6.55	PERSONA	Rm 12	WASH.
				TABUNG	Rm 10.00	
				TOTAL	Rm 455	
				BALANCE	Rm 284.00	
				SARAN G	Rm 110.00	
				Pinjara	Rm 50	
				COMISION	Rm 1	
				AIR	Rm 6.00	

Daily sales is written in a book

薪金传票 SALARY VOUCHER

付
PAY TO: SHAZWAN BIN ISMAIL 身份证号码 931023-04-5311
I/C NO.:

收入 EARNINGS	项目	金额	单位	备注
	BASIC PAY 基本支付	Rm 900	00	
	OVERTIME 超时	Rm 38	45	
	COMMISSION 佣金	Rm 15650	(5%)	
	ALLOWANCES 津贴	Rm 130	00	(MEALS)
	(A) GROSS PAY 总付额	Rm 1950	95	
扣除 DEDUCTIONS	EPF - EMPLOYEE 雇员公积金	Rm 112	50	
	SOCSSO 社会保险金			
	ADVANCE / LOAN 预支/贷款	Rm 450	00	
	INCOME TAX 所得税			
	(B) TOTAL DEDUCTIONS 总扣除额	Rm 562	50	
附加 ADDITIONS	REIMBURSEMENT 补偿			
	(C) TOTAL ADDITIONS 总附加额			
	NET PAY (A-B+C) 净付额	Rm 1288	45	

MEALS - RM 110.00
Rm 1158.45

支付日期 PAY DAY: 超时时间 OVERTIME 每小时 RATE PER HOUR	雇主公积金 EMPLOYER'S EPF 社会保险金 EMPLOYER'S SOCSO 总补贴 TOTAL CONTRIBUTION
处理者 PREPARED BY	批准者 APPROVED BY
雇员签名 EMPLOYEE'S SIGNATURE	

Employee salary slip that are calculated manually by employer

UNIVERSITI TEKNIKAL MALAYSIA MELAKA



ATTACHMENT 1.2

APPENDIX B



اونيورسيتي تيكنيكل مليسيا ملاك

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

Table name	Attribute name	Content	Type	Example
Admin	admin_id	Admin unique ID	Varchar(10)	AD001
	password	Admin Password	Varchar(10)	abc123
	admin_name	Admin name	Varchar(50)	Aainina
	admin_number	Admin phone number	Varchar(15)	01127174384
Company	comp_id	Company unique ID	Varchar(10)	COMP001
	admin_id	Admin unique ID	Varchar(10)	AD001
	SSM_name	Company SSM	Varchar(50)	
	SSM_no	Company SSM number	Varchar(15)	MA0199029-D
	comp_name	Company name	Varchar(50)	Fikri detailing car care n beauty
	comp_address	Company address	Varchar(100)	Ayer keroh
	comp_phone	Company phone number	Varchar(15)	06-3456789
Employee	emp_id	Employee unique ID	Varchar(10)	EMP001
	emp_name	Employee name	Varchar(50)	Maziz
	emp_password	Employee password	Varchar(10)	112233
	emp_phone	Employee phone number	Varchar(15)	01190889099
	emp_position	Employee position	Varchar(20)	Owner
	emp_ic_no	Employee IC	Varchar(12)	900909106890
	emp_age	Employee age	Int(10)	26
	emp_status	Employee status	Varchar(10)	Active
	emp_previous_job	Employee previous job	Varchar(50)	Clerk
	comp_id	Company unique ID	Varchar(10)	COMP001
MC	mc_id	Leave unique ID	Varchar(10)	MC001
	mc_type	Leave type	Varchar(20)	Annual
	mc_start_date	Leave start date	Date	2016-17-05
	mc_end_date	Leave end date	Date	2016-18-05

	mc_reason	Leave reason	Varchar(50)	Hometown
	mc_status	Leave status	Varchar(10)	Pending
	emp_id	Employee unique ID	Varchar(10)	EMP001



اونيورسيتي تيكنيكل مليسيا ملاك

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

Attendance	att_id	Attendance unique ID	Varchar(10)	ATT001
	att_date	Attendance date	Date	2016-19-05
	att_time_in	Employee check in time	Time	08:00:00
	att_time_out	Employee check out time	Time	20:00:00
	emp_id	Employee unique ID	Varchar(10)	EMP001
Overtime	overtime_id	Overtime unique ID	Varchar(10)	OT001
	overtime_hour	Hour taken after working hour	Int(10)	1
	overtime_start	Overtime start	Time	19:00:00
	overtime_end	Overtime end	Time	20:00:00
	overtime_date	Overtime date	Date	2016-19-05
	att_id	Attendance unique ID	Varchar(10)	ATT001
Salary	salary_id	Salary unique ID	Varchar(10)	SLRY001
	salary_month	Salary month	Varchar(10)	May
	salary_basic	Basic salary	Decimal(19,2)	900
	salary_overtime	Overtime salary	Decimal(19,2)	20
	salary_commission	Commission salary	Decimal(19,2)	20
	salary_allowances	Allowances	Decimal(19,2)	20
	salary_EPF	EPF	Decimal(19,2)	20
	salary_advance	Advance pay	Decimal(19,2)	20
	salary_gross_pay	Gross pay	Decimal(19,2)	940
	salary_deduction	Salary deduction	Decimal(19,2)	40
	salary_net_pay	Salary net pay	Decimal(19,2)	900
	emp_id	Employee unique ID	Varchar(10)	EMP002
	sales_id	Sales unique ID	Varchar(10)	RS-89098
Sales	sales_date	Sales date	Date	2016-19-05
	payment	Payment	Decimal(19,2)	5
	total	Total payment	Decimal(19,2)	10
	note	Type of payment	Varchar(20)	Partial payment

	emp_id	Employee unique ID	Varchar(10)	EMP001
--	--------	--------------------	-------------	--------

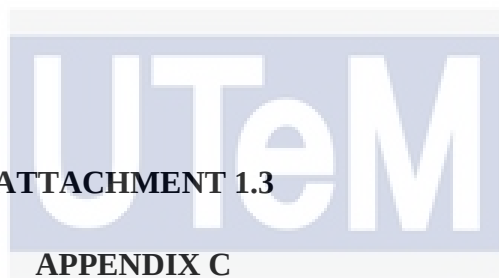


Job	sales_id	Sales unique ID	Varchar(10)	RS-89098
	car_plate	Customer car plate	Varchar(10)	AJB1010
	job_time_in	Car time in for services	Time	08:00:00
	job_time_out	Car time out for services	Time	08:10:00
	job_date	Job date	Date	2016-19-05
	status	Job status	Varchar(10)	Pending
Car	car_plate	Customer car plate	Varchar(10)	AJB1010
	car_owner	Customer name	Varchar(50)	Mohamad
	car_owner_tel	Customer phone number	Varchar(15)	01890675567
	car_model	Car model	Varchar(50)	Viva
	car_size	Car size	Varchar(5)	S
Promo	promo_id	Promotion unique ID	Varchar(10)	PROM001
	promo_start	Promotion start date	Date	2016-01-01
	promo_end	Promotion end date	Date	2016-19-05
	count_promo1	Count promotion	Int(10)	1
	count_promo2	Count promotion 2	Int(10)	9
	promo_completed	Status whether the promotion have completed or not	Varchar(20)	Complete
	promo_claim	Status whether the promotion have been claim or not	Varchar(20)	Yes
	car_plate	Customer car plate	Varchar(10)	AJB1010
Job_services	sales_id	Sales unique ID	Varchar(10)	RS-89098
	car_plate	Customer car plate	Varchar(10)	AJB1010
	service_id	Service unique ID	Varchar(10)	SVS001
	Free	If customer purchase the promotion, this column will be updated as free	Varchar(10)	Free
	service_id	Service unique ID	Varchar(10)	SVS001

Services_basic	service_name	Service name	Varchar(50)	Wash
	price	Service price	Int(10)	8
	car_size	Car size	Varchar(5)	S
Daily_sales	date	Current date	Date	2016-19-05
	grand_total	Total sales per day	Decimal(19,2)	123.00
	commission	Total commission per day	Decimal(19,2)	13.00
	stuff	Total buy stuff per day	Decimal(19,2)	13.00
	meals	Total meals per day	Decimal(19,2)	20.00
	others	Total other stuff per day	Decimal(19,2)	0.00
	net_total	Total after deduction per day	Decimal(19,2)	64.00
	emp_id	Employee ID	Varchar(10)	E2
Advance	adv_id	Advance ID	Varchar(10)	ADV001
	amount	Amount	Decimal(19,2)	200.00
	date	Current date	Date	2016-19-05
	emp_id	Employee ID	Varchar(10)	E2



ATTACHMENT 1.3



APPENDIX C

اونيورسيتي تيكنيكل مليسيا ملاك

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

Table name	Attribute name	Content	Type	Format	Required	PK/FK	Reference	Example
Admin	admin_id	Admin unique ID	Varchar(10)	Xxxxxx	Y	PK		AD001
	password	Admin Password	Varchar(10)	Xxxxxx				abc123
	admin_name	Admin name	Varchar(50)	Xxxxxx				Aainina
	admin_number	Admin phone number	Varchar(15)	Xxxxxx				01127174384
Company	comp_id	Company unique ID	Varchar(10)	Xxxxxx	Y	PK		COMP001
	admin_id	Admin unique ID	Varchar(10)	Xxxxxx		FK	Admin	AD001
	SSM_name	Company SSM	Varchar(50)	Xxxxxx				
	SSM_no	Company SSM number	Varchar(15)	Xxxxxx				MA0199029-D
	comp_name	Company name	Varchar(50)	Xxxxxx				Fikri detailing car care n beauty
	comp_address	Company address	Varchar(100)	Xxxxxx				Ayer keroh
Employee	comp_phone	Company phone number	Varchar(15)	Xxxxxx				06-3456789
	emp_id	Employee unique ID	Varchar(10)	Xxxxxx	Y	PK		EMP001
	emp_name	Employee name	Varchar(50)	Xxxxxx				Maziz
	emp_password	Employee password	Varchar(10)	Xxxxxx				112233
	emp_phone	Employee phone number	Varchar(15)	Xxxxxx				01190889099
	emp_position	Employee position	Varchar(20)	Xxxxxx				Owner
	emp_ic_no	Employee IC	Varchar(12)	Xxxxxx				900909106890
	emp_age	Employee age	Int(10)	999999				26
	emp_status	Employee status	Varchar(10)	Xxxxxx				Active
	emp_previous_job	Employee previous job	Varchar(50)	Xxxxxx				Clerk
MC	comp_id	Company unique ID	Varchar(10)	Xxxxxx		FK	Company	COMP001
	mc_id	Leave unique ID	Varchar(10)	Xxxxxx	Y	PK		MC001
	mc_type	Leave type	Varchar(20)	Xxxxxx				Annual
	mc_start_date	Leave start date	Date	yy-dd-mm				2016-17-05
	mc_end_date	Leave end date	Date	yy-dd-mm				2016-18-05

	mc_reason	Leave reason	Varchar(50)	Xxxxxx				Hometown
	mc_status	Leave status	Varchar(10)	Xxxxxx				Pending
	emp_id	Employee unique ID	Varchar(10)	Xxxxxx		FK	Employee	EMP001



اونيورسيتي تيكنيكل مليسيا ملاك

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

Attendance	att_id	Attendance unique ID	Varchar(10)	Xxxxxx	Y	PK		ATT001
	att_date	Attendance date	Date	yy-dd-mm				2016-19-05
	att_time_in	Employee check in time	Time	hh:mm:ss				08:00:00
	att_time_out	Employee check out time	Time	hh:mm:ss				20:00:00
	emp_id	Employee unique ID	Varchar(10)	Xxxxxx		FK	Employee	EMP001
Overtime	overtime_id	Overtime unique ID	Varchar(10)	Xxxxxx	Y	PK		OT001
	overtime_hour	Hour taken after working hour	Int(10)	999999				1
	overtime_start	Overtime start	Time	hh:mm:ss				19:00:00
	overtime_end	Overtime end	Time	hh:mm:ss				20:00:00
	overtime_date	Overtime date	Date	yy-dd-mm				2016-19-05
	att_id	Attendance unique ID	Varchar(10)	Xxxxxx		FK	Attendance	ATT001
Salary	salary_id	Salary unique ID	Varchar(10)	Xxxxxx	Y	PK		SLRY001
	salary_month	Salary month	Varchar(10)	Xxxxxx				May
	salary_basic	Basic salary	Decimal(19,2)	00.00				900
	salary_overtime	Overtime salary	Decimal(19,2)	00.00				20
	salary_commission	Commission salary	Decimal(19,2)	00.00				20
	salary_allowances	Allowances	Decimal(19,2)	00.00				20
	salary_EPF	EPF	Decimal(19,2)	00.00				20
	salary_advance	Advance pay	Decimal(19,2)	00.00				20
	salary_gross_pay	Gross pay	Decimal(19,2)	00.00				940
	salary_deduction	Salary deduction	Decimal(19,2)	00.00				40
	salary_net_pay	Salary net pay	Decimal(19,2)	00.00				900
	emp_id	Employee unique ID	Varchar(10)	Xxxxxx		FK	Employee	EMP002
Sales	sales_id	Sales unique ID	Varchar(10)	Xxxxxx	Y	PK		RS-89098
	sales_date	Sales date	Date	yy-dd-mm				2016-19-05
	payment	Payment	Decimal(19,2)	00.00				5

	total	Total payment	Decimal(19,2)	00.00				10
	note	Type of payment	Varchar(20)	Xxxxxx				Partial payment
	emp_id	Employee unique ID	Varchar(10)	Xxxxxx		FK	Employee	EMP001



اونيورسيتي تيكنيكل مليسيا ملاك

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

Job	sales_id	Sales unique ID	Varchar(10)	Xxxxxx		PK FK	Sales	RS-89098
	car_plate	Customer car plate	Varchar(10)	Xxxxxx		PK FK	Car	AJB1010
	job_time_in	Car time in for services	Time	hh:mm:ss				08:00:00
	job_time_out	Car time out for services	Time	hh:mm:ss				08:10:00
	job_date	Job date	Date	yy-dd-mm				2016-19-05
	status	Job status	Varchar(10)	Xxxxxx				Pending
Car	car_plate	Customer car plate	Varchar(10)	Xxxxxx	Y	PK		AJB1010
	car_owner	Customer name	Varchar(50)	Xxxxxx				Mohamad
	car_owner_tel	Customer phone number	Varchar(15)	Xxxxxx				01890675567
	car_model	Car model	Varchar(50)	Xxxxxx				Viva
	car_size	Car size	Varchar(5)	Xxxxxx				S
Promo	promo_id	Promotion unique ID	Varchar(10)	Xxxxxx	Y	PK		PROM001
	promo_start	Promotion start date	Date	yy-dd-mm				2016-01-01
	promo_end	Promotion end date	Date	yy-dd-mm				2016-19-05
	count_promo1	Count promotion	Int(10)	999999				1
	count_promo2	Count promotion 2	Int(10)	999999				9
	promo_completed	Status whether the promotion have completed or not	Varchar(20)	Xxxxxx				Complete
	promo_claim	Status whether the promotion have been claim or not	Varchar(20)	Xxxxxx				Yes
	car_plate	Customer car plate	Varchar(10)	Xxxxxx		FK	Car	AJB1010
Job_services	sales_id	Sales unique ID	Varchar(10)	Xxxxxx		PK FK	Sales	RS-89098
	car_plate	Customer car plate	Varchar(10)	Xxxxxx		PK FK	Car	AJB1010
	service_id	Service unique ID	Varchar(10)	Xxxxxx		PK FK	Services_basi c	SVS001

	Free	If customer purchase the promotion, this column will be updated as free	Varchar(10)	Xxxxxx				Free
Services_basic	service_id	Service unique ID	Varchar(10)	Xxxxxx	Y	PK		SVS001
	service_name	Service name	Varchar(50)	Xxxxxx				Wash
	price	Service price	Int(10)	999999				8
	car_size	Car size	Varchar(5)	Xxxxxx				S
Daily_sales	date	Current date	Date	yy-dd-mm	Y	PK		2016-19-05
	grand_total	Total sales per day	Decimal(19,2)	00.00				123.00
	commission	Total commission per day	Decimal(19,2)	00.00				13.00
	stuff	Total buy stuff per day	Decimal(19,2)	00.00				13.00
	meals	Total meals per day	Decimal(19,2)	00.00				20.00
	others	Total other stuff per day	Decimal(19,2)	00.00				0.00
	net_total	Total after deduction per day	Decimal(19,2)	00.00		FK		64.00
	emp_id	Employee ID	Varchar(10)	Xxxxxx				E2
Advance	adv_id	Advance ID	Varchar(10)	Xxxxxx	Y	PK		ADV001
	amount	Amount	Decimal(19,2)	00.00				200.00
	date	Current date	Date	yy-dd-mm				2016-19-05
	emp_id	Employee ID	Varchar(10)	Xxxxxx		FK		E2



ATTACHMENT 1.4

APPENDIX D



اونيورسيتي تيكنيكل مليسيا ملاك

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

```
CREATE TABLE IF NOT EXISTS `admin` (
  `admin_id` varchar(10) NOT NULL,
  `password` varchar(10) NOT NULL,
  `admin_name` varchar(50) NOT NULL,
  `admin_number` varchar(15) NOT NULL,
  PRIMARY KEY (`admin_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

Admin table

```
CREATE TABLE IF NOT EXISTS `advance` (
  `adv_id` varchar(10) NOT NULL,
  `amount` decimal(19,2) NOT NULL,
  `date` int(11) NOT NULL,
  `emp_id` varchar(10) NOT NULL,
  PRIMARY KEY (`adv_id`),
  KEY `emp_id` (`emp_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```
CREATE TABLE IF NOT EXISTS `adv_seq` (
  `adv_id` int(11) NOT NULL AUTO_INCREMENT,
  PRIMARY KEY (`adv_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=4 ;
```

Advance table and sequence

```
CREATE TABLE IF NOT EXISTS `attendance` (
  `att_id` varchar(10) NOT NULL,
  `att_date` date NOT NULL,
  `att_time_in` time NOT NULL,
  `att_time_out` time NOT NULL,
  `emp_id` varchar(10) NOT NULL,
  PRIMARY KEY (`att_id`),
  KEY `emp_id` (`emp_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```
CREATE TABLE IF NOT EXISTS `att_seq` (
  `att_id` int(11) NOT NULL AUTO_INCREMENT,
  PRIMARY KEY (`att_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=58 ;
```

Attendance table and sequence


```
CREATE TABLE IF NOT EXISTS `car` (
  `car_plate` varchar(10) NOT NULL,
  `car_owner` varchar(50) NOT NULL,
  `car_owner_tel` varchar(15) NOT NULL,
  `car_model` varchar(50) NOT NULL,
  `car_size` varchar(5) NOT NULL,
  PRIMARY KEY (`car_plate`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

Car table and sequence

```
CREATE TABLE IF NOT EXISTS `company` (
  `comp_id` varchar(10) NOT NULL,
  `admin_id` varchar(10) NOT NULL,
  `SSM_name` varchar(50) NOT NULL,
  `SSM_no` varchar(15) NOT NULL,
  `comp_name` varchar(50) NOT NULL,
  `comp_address` varchar(100) NOT NULL,
  `comp_phone` varchar(15) NOT NULL,
  PRIMARY KEY (`comp_id`),
  KEY `admin_id` (`admin_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

Company table

```
CREATE TABLE IF NOT EXISTS `daily_sales` (
  `date` date NOT NULL,
  `grand_total` decimal(19,2) NOT NULL,
  `commission` decimal(19,2) NOT NULL,
  `stuff` decimal(19,2) NOT NULL,
  `meals` decimal(19,2) NOT NULL,
  `others` decimal(19,2) NOT NULL,
  `net_total` decimal(19,2) NOT NULL,
  `emp_id` varchar(10) NOT NULL,
  PRIMARY KEY (`date`),
  KEY `emp_id` (`emp_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

Daily sales table

```

CREATE TABLE IF NOT EXISTS `employee` (
  `emp_id` varchar(10) NOT NULL,
  `emp_name` varchar(50) NOT NULL,
  `emp_password` varchar(10) NOT NULL,
  `emp_phone` varchar(15) NOT NULL,
  `emp_position` varchar(20) NOT NULL,
  `basic_salary` decimal(19,2) NOT NULL,
  `emp_ic_no` varchar(12) NOT NULL,
  `emp_age` int(10) NOT NULL,
  `emp_status` varchar(10) NOT NULL,
  `emp_previous_job` varchar(50) NOT NULL,
  `comp_id` varchar(10) NOT NULL,
  PRIMARY KEY (`emp_id`),
  KEY `comp_id` (`comp_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

CREATE TABLE IF NOT EXISTS `emp_seq` (
  `emp_id` int(11) NOT NULL AUTO_INCREMENT,
  PRIMARY KEY (`emp_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=11 ;

CREATE TABLE IF NOT EXISTS `emp_seq` (
  `emp_id` int(11) NOT NULL AUTO_INCREMENT,
  PRIMARY KEY (`emp_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=11 ;

```

Employee table and sequence

```

CREATE TABLE IF NOT EXISTS `job` (
  `sales_id` varchar(10) NOT NULL,
  `car_plate` varchar(10) NOT NULL,
  `job_time_in` time NOT NULL,
  `job_time_out` time NOT NULL,
  `job_date` date NOT NULL,
  `status` varchar(10) NOT NULL,
  PRIMARY KEY (`sales_id`,`car_plate`),
  UNIQUE KEY `sales_id` (`sales_id`,`car_plate`),
  UNIQUE KEY `sales_id_2` (`sales_id`,`car_plate`),
  KEY `car_plate` (`car_plate`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

```

Job table and sequence

```

CREATE TABLE IF NOT EXISTS `job_services` (
  `sales_id` varchar(10) NOT NULL DEFAULT "",
  `job_services_id` varchar(10) NOT NULL,
  `car_plate` varchar(10) NOT NULL DEFAULT "",
  `service_id` varchar(10) NOT NULL DEFAULT "",
  `free` varchar(10) DEFAULT NULL,
  PRIMARY KEY (`sales_id`,`car_plate`,`service_id`,`job_services_id`),
  KEY `fk_carPlate` (`car_plate`),
  KEY `fk_serviceID` (`service_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

```

```

CREATE TABLE IF NOT EXISTS `job_service_seq` (
  `job_services_id` int(11) NOT NULL AUTO_INCREMENT,
  PRIMARY KEY (`job_services_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=194 ;

```

Job_services table and sequence

```

CREATE TABLE IF NOT EXISTS `mc` (
  `mc_id` varchar(10) NOT NULL,
  `mc_type` varchar(20) NOT NULL,
  `mc_start_date` date NOT NULL,
  `mc_end_date` date NOT NULL,
  `mc_reason` varchar(50) NOT NULL,
  `mc_status` varchar(10) NOT NULL,
  `apply_date` date NOT NULL,
  `emp_id` varchar(10) NOT NULL,
  PRIMARY KEY (`mc_id`),
  KEY `emp_id` (`emp_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

```

```

CREATE TABLE IF NOT EXISTS `mc_seq` (
  `mc_id` int(11) NOT NULL AUTO_INCREMENT,
  PRIMARY KEY (`mc_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=12 ;

```

Mc table and sequence

```
CREATE TABLE IF NOT EXISTS `overtime` (
  `overtime_id` varchar(10) NOT NULL,
  `overtime_hour` int(10) NOT NULL,
  `overtime_start` time NOT NULL,
  `overtime_end` time NOT NULL,
  `overtime_date` date NOT NULL,
  `att_id` varchar(10) NOT NULL,
  PRIMARY KEY (`overtime_id`),
  KEY `att_id` (`att_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```
CREATE TABLE IF NOT EXISTS `ot_seq` (
  `overtime_id` int(11) NOT NULL AUTO_INCREMENT,
  PRIMARY KEY (`overtime_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=32 ;
```

Overtime table and sequence

```
CREATE TABLE IF NOT EXISTS `promo` (
  `promo_id` varchar(10) NOT NULL,
  `promo_start` date NOT NULL,
  `promo_end` date NOT NULL,
  `count_promo1` int(10) NOT NULL,
  `count_promo2` int(10) NOT NULL,
  `promo_completed` varchar(20) NOT NULL,
  `promo_claim` varchar(20) NOT NULL,
  `car_plate` varchar(10) NOT NULL,
  PRIMARY KEY (`promo_id`),
  KEY `car_plate` (`car_plate`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

Promo table and sequence

```

CREATE TABLE IF NOT EXISTS `salary` (
  `salary_id` varchar(10) NOT NULL,
  `salary_month` varchar(20) NOT NULL,
  `salary_basic` decimal(19,2) NOT NULL,
  `salary_overtime` decimal(19,2) NOT NULL,
  `salary_commission` decimal(19,2) NOT NULL,
  `salary_allowances` decimal(19,2) NOT NULL,
  `salary_EPF` decimal(19,2) NOT NULL,
  `salary_advance` decimal(19,2) NOT NULL,
  `salary_gross_pay` decimal(19,2) NOT NULL,
  `salary_deduction` decimal(19,2) NOT NULL,
  `salary_net_pay` decimal(19,2) NOT NULL,
  `salary_status` varchar(20) NOT NULL,
  `emp_id` varchar(10) NOT NULL,
  PRIMARY KEY (`salary_id`),
  KEY `emp_id` (`emp_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

CREATE TABLE IF NOT EXISTS `sal_seq` (
  `salary_id` int(11) NOT NULL AUTO_INCREMENT,
  PRIMARY KEY (`salary_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=10 ;

```

Salary table and sequence

```

CREATE TABLE IF NOT EXISTS `sales` (
  `sales_id` varchar(10) NOT NULL,
  `sales_date` date NOT NULL,
  `payment` decimal(19,2) NOT NULL,
  `total` decimal(19,2) NOT NULL,
  `note` varchar(20) NOT NULL,
  `emp_id` varchar(10) NOT NULL,
  PRIMARY KEY (`sales_id`),
  KEY `emp_id` (`emp_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

CREATE TABLE IF NOT EXISTS `sal_seq` (
  `salary_id` int(11) NOT NULL AUTO_INCREMENT,
  PRIMARY KEY (`salary_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=10 ;

```

Sales table and sequence

```
CREATE TABLE IF NOT EXISTS `services_basic` (  
    `service_id` varchar(10) NOT NULL,  
    `service_name` varchar(50) NOT NULL,  
    `price` int(10) NOT NULL,  
    `car_size` varchar(5) NOT NULL,  
    PRIMARY KEY (`service_id`)  
) ENGINE=InnoDB DEFAULT CHARSET=latin1;  
  
CREATE TABLE IF NOT EXISTS `service_seq` (  
    `service_id` int(11) NOT NULL AUTO_INCREMENT,  
    PRIMARY KEY (`service_id`)  
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=84 ;
```

Services_basic table and sequence





ATTACHMENT 1.5

APPENDIX E



اونيورسيتي تيكنيكل مليسيا ملاك

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

```

DROP TRIGGER IF EXISTS `advInsert`;
DELIMITER //
CREATE TRIGGER `advInsert` BEFORE INSERT ON `advance`
FOR EACH ROW BEGIN
INSERT INTO adv_seq VALUES (NULL);
SET NEW.adv_id = CONCAT('ADV', LPAD(LAST_INSERT_ID(), 4, '0'));
END
//
DELIMITER ;

```

```

DROP TRIGGER IF EXISTS `attID`;
DELIMITER //
CREATE TRIGGER `attID` BEFORE INSERT ON `attendance`
FOR EACH ROW BEGIN
INSERT INTO att_seq VALUES (NULL);
SET NEW.att_id = CONCAT('ATT', LPAD(LAST_INSERT_ID(), 4, '0'));
END
//
DELIMITER ;

```

```

DROP TRIGGER IF EXISTS `employeeID`;
DELIMITER //
CREATE TRIGGER `employeeID` BEFORE INSERT ON `employee`
FOR EACH ROW BEGIN
INSERT INTO emp_seq VALUES (NULL);
SET NEW.emp_id = CONCAT('EMP', LPAD(LAST_INSERT_ID(), 3, '0'));
END
//
DELIMITER ;

```

```

DROP TRIGGER IF EXISTS `trig_job_services_id`;
DELIMITER //
CREATE TRIGGER `trig_job_services_id` BEFORE INSERT ON `job_services`
FOR EACH ROW BEGIN
INSERT INTO job_service_seq VALUES (NULL);

```



```

SET NEW.job_services_id = CONCAT('JS', LPAD(LAST_INSERT_ID(), 4, '0'));
END
//
DELIMITER ;

```

```

DROP TRIGGER IF EXISTS `mcInsertTrigger`;
DELIMITER //
CREATE TRIGGER `mcInsertTrigger` BEFORE INSERT ON `mc`
FOR EACH ROW BEGIN
INSERT INTO mc_seq VALUES (NULL);
SET NEW.mc_id = CONCAT('MC', LPAD(LAST_INSERT_ID(), 3, '0'));
END
//
DELIMITER ;

```

```

DROP TRIGGER IF EXISTS `otInsert`;
DELIMITER //
CREATE TRIGGER `otInsert` BEFORE INSERT ON `overtime`
FOR EACH ROW BEGIN
INSERT INTO ot_seq VALUES (NULL);
SET NEW.overtime_id = CONCAT('OT', LPAD(LAST_INSERT_ID(), 3, '0'));
END
//
DELIMITER ;

```

```

DROP TRIGGER IF EXISTS `salInsert`;
DELIMITER //
CREATE TRIGGER `salInsert` BEFORE INSERT ON `salary`
FOR EACH ROW BEGIN
INSERT INTO sal_seq VALUES (NULL);
SET NEW.salary_id = CONCAT('SLRY', LPAD(LAST_INSERT_ID(), 3, '0'));
END
//
DELIMITER ;

```

```

DROP TRIGGER IF EXISTS `serviceID`;
DELIMITER //
CREATE TRIGGER `serviceID` BEFORE INSERT ON `services_basic`
FOR EACH ROW BEGIN
INSERT INTO service_seq VALUES (NULL);
SET NEW.service_id = CONCAT('SVS', LPAD(LAST_INSERT_ID(), 3, '0'));
END
//
DELIMITER ;

```

Before insert trigger

```

DROP TRIGGER IF EXISTS `overtime`;
DELIMITER //
CREATE TRIGGER `overtime` AFTER UPDATE ON `attendance`
FOR EACH ROW BEGIN
declare ot int;

set ot = SUBTIME(CURTIME(), 170000);

if (ot > 1) then
insert into overtime (overtime_hour, overtime_start, overtime_end, overtime_date,
att_id)
values (LEFT(ot,1), "17:00:00", new.att_time_out, CURDATE(), new.att_id);
end if;
end
//
DELIMITER ;

```

After update trigger



ATTACHMENT 1.6

APPENDIX F



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```

CREATE DEFINER=`root`@`localhost` PROCEDURE `admin_insert_procedure`(
    IN admin_id varchar(10),
    IN password varchar(10),
    IN admin_name varchar(100),
    IN admin_number int(11)
)
BEGIN
    INSERT INTO company
    (admin_id, password, admin_name, admin_number)
    VALUES
    (admin_id, password, admin_name, admin_number);
END$$

```

Admin_insert_procedure procedure

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `advanceInsert`(IN `am`
DECIMAL(19,2), IN `id` VARCHAR(10))
NO SQL
BEGIN
    INSERT INTO advance
    (amount, date, emp_id)
    VALUES
    (am, CURDATE(), id);
END$$

```

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `attInsert`(IN `id`
VARCHAR(10))
NO SQL
BEGIN

    INSERT INTO attendance
    (att_date, att_time_in, emp_id)
    VALUES
    (CURDATE(), CURTIME(), id);
END$$

```

advanceInsert procedure

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `attUpdate`(IN `att`
    VARCHAR(10), IN `id` VARCHAR(10))
    NO SQL
    BEGIN
        UPDATE attendance SET
            att_time_out = CURTIME(),
            emp_id = id
        WHERE att_id= att;
    END$$

```

attUpdate procedure

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `carInsert`(IN `v_plate`
    VARCHAR(10), IN `v_owner` VARCHAR(50), IN `v_tel` VARCHAR(15), IN
    `v_model` VARCHAR(50), IN `v_size` VARCHAR(5))
    NO SQL
    BEGIN
        INSERT INTO car
            (car_plate, car_owner, car_owner_tel, car_model, car_size)
        VALUES
            (v_plate, v_owner, v_tel, v_model, v_size);
    END$$

```

carInsert procedure

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `compInsert`(IN `v_id`
    VARCHAR(10), IN `v_adId` VARCHAR(10), IN `v_SSM` VARCHAR(50), IN `v_no`
    VARCHAR(15), IN `v_name` VARCHAR(50), IN `v_add` VARCHAR(100), IN
    `v_phone` VARCHAR(15))
    NO SQL
    BEGIN
        INSERT INTO company
            (comp_id, admin_id, SSM_name, SSM_no, comp_name, comp_address,
            comp_phone)
        VALUES
            (v_id, v_adID, v_SSM, v_no, v_name, v_add, v_phone);
    END$$

```

compInsert procedure

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `dailySalesInsert`(IN `g`
DECIMAL(19,2), IN `com` DECIMAL(19,2), IN `s` DECIMAL(19,2), IN `m`
DECIMAL(19,2), IN `o` DECIMAL(19,2), IN `net` DECIMAL(19,2), IN `id`
VARCHAR(10))
NO SQL
BEGIN

INSERT INTO daily_sales
(date, grand_total, commission, stuff, meals, others, net_total, emp_id)
VALUES
(CURDATE(), g, com, s, m, o, net, id);
END$$

```

dailySalesInsert procedure

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `empInsert`(IN `v_name`
VARCHAR(50), IN `v_pass` VARCHAR(10), IN `v_tel` VARCHAR(15), IN
`v_position` VARCHAR(20), IN `v_basic` DECIMAL(19,2), IN `v_ic`
VARCHAR(12), IN `v_age` INT(10), IN `v_status` VARCHAR(10), IN `v_job`
VARCHAR(50), IN `v_comp` VARCHAR(10))
NO SQL
BEGIN

INSERT INTO employee
(emp_name, emp_password, emp_phone, emp_position, basic_salary, emp_ic_no,
emp_age, emp_status, emp_previous_job, comp_id)
VALUES
(v_name, v_pass, v_tel, v_position, v_basic, v_ic, v_age, v_status, v_job,
v_comp);
END$$

```

empInsert procedure

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `empOwnerInsert`(IN
  `v_name` VARCHAR(50), IN `v_pass` VARCHAR(10), IN `v_number`
    VARCHAR(15), IN `v_compID` VARCHAR(10))
    NO SQL
    BEGIN

        INSERT INTO employee
        (emp_name, emp_password, emp_phone, emp_position, emp_status, comp_id)
        VALUES
        (v_name, v_pass, v_number, 'Owner', 'Active', v_compID);
    END$$

```

empOwnerInsert procedure

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `jobInsert`(IN `v_sales`
  VARCHAR(10), IN `v_plate` VARCHAR(10))
    NO SQL
    BEGIN

        INSERT INTO job
        (sales_id, car_plate, job_time_in, job_date, status)
        VALUES
        (v_sales, v_plate, CURTIME(), CURDATE(), 'Job');
    END$$

```

jobInsert procedure

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `mcInsert`(IN `mc_type`
  VARCHAR(20), IN `mc_start_date` DATE, IN `mc_end_date` DATE, IN `mc_reason`
    VARCHAR(50), IN `emp_id` VARCHAR(10))
    NO SQL
    BEGIN

        INSERT INTO mc
        (mc_type, mc_start_date, mc_end_date, mc_reason, mc_status, apply_date,
          emp_id)
        VALUES
        (mc_type, mc_start_date, mc_end_date, mc_reason, 'Pending', CURDATE(),
          emp_id);
    END$$

```

mcInsert procedure

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `salaryInsert`(IN `v_month`
  VARCHAR(20), IN `v_basic` DECIMAL(19,2), IN `v_ot` DECIMAL(19,2), IN
  `v_com` DECIMAL(19,2), IN `v_allow` DECIMAL(19,2), IN `v_EPF`
  DECIMAL(19,2), IN `v_ad` DECIMAL(19,2), IN `v_gross` DECIMAL(19,2), IN
  `v_ded` DECIMAL(19,2), IN `v_net` DECIMAL(19,2), IN `v_id` VARCHAR(10))
  NO SQL
  BEGIN
    INSERT INTO salary
      (salary_month, salary_basic, salary_overtime, salary_commission,
      salary_allowances, salary_EPF, salary_advance, salary_gross_pay, salary_deduction,
      salary_net_pay, salary_status, emp_id)
    VALUES
      (v_month, v_basic, v_ot, v_com, v_allow, v_EPF, v_ad, v_gross, v_ded, v_net,
      'Unpaid', v_id);
  END$$

```

salaryInsert procedure

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `salesInsert`(IN `v_sales`
  VARCHAR(10), IN `v_emp` VARCHAR(10))
  NO SQL
  BEGIN
    INSERT INTO sales
      (sales_id, emp_id, sales_date)
    VALUES
      (v_sales, v_emp, CURDATE());
  END$$

```

salesInsert procedure

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `serviceInsert`(IN `v_name`
  VARCHAR(50), IN `v_price` INT(10), IN `v_size` VARCHAR(5))
  NO SQL
  BEGIN
    INSERT INTO services_basic
      (service_name, price, car_size)
    VALUES
      (v_name, v_price, v_size);
  END$$

```

serviceInsert procedure


```

CREATE DEFINER=`root`@`localhost` PROCEDURE `updateAdmin`(IN `v_id`
VARCHAR(10), IN `v_pass` VARCHAR(10), IN `v_name` VARCHAR(50), IN `v_no`
VARCHAR(15))
    NO SQL
    BEGIN
        UPDATE admin SET
            password = v_pass,
            admin_name = v_name,
            admin_number = v_no
        WHERE admin_id= v_id;
    END$$

```

UpdateAdmin procedure

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `updateEmployee`(IN `v_emp`
VARCHAR(10), IN `v_name` VARCHAR(50), IN `v_pass` VARCHAR(10), IN `v_tel`
VARCHAR(15), IN `v_position` VARCHAR(20), IN `v_basic` DECIMAL(19,2), IN
`v_ic` VARCHAR(12), IN `v_age` INT(10), IN `v_status` VARCHAR(10), IN `v_job`
VARCHAR(50), IN `v_comp` VARCHAR(10))
    NO SQL
    BEGIN
        UPDATE employee SET
            emp_name = v_name,
            emp_password = v_pass,
            emp_phone = v_tel,
            emp_position = v_position,
            basic_salary = v_basic,
            emp_ic_no = v_ic,
            emp_age = v_age,
            emp_status = v_status,
            emp_previous_job = v_job,
            comp_id = v_comp
        WHERE emp_id= v_emp;
    END$$

```

updateEmployee procedure

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `updateJob2`(IN `v_sales`
    VARCHAR(10))
    NO SQL
    BEGIN
        UPDATE job SET
            status = 'Payment',
            job_time_out = CURTIME()
        WHERE sales_id= v_sales;
    END$$
```

updateJob2 procedure

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `updateLeave`(IN `id`
    VARCHAR(10), IN `type` VARCHAR(20), IN `start` DATE, IN `end` DATE, IN
    `reason` VARCHAR(50), IN `status` VARCHAR(10), IN `apply` DATE, IN `emp_id`
    VARCHAR(10))
    NO SQL
    BEGIN
        UPDATE mc SET
            mc_type = type,
            mc_start_date = start,
            mc_end_date = end,
            mc_reason = reason,
            mc_status = status,
            apply_date = apply,
            emp_id = emp_id
        WHERE mc_id= id;
    END$$
```

updateLeave procedure

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `updateSalaryStatus`(IN `id`
    VARCHAR(10))
    NO SQL
    BEGIN
        UPDATE salary SET
            salary_status = 'Paid'
        WHERE salary_id= id;
    END$$
```

updateSalaryStatus procedure

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `updateSales`(IN `v_sales`
    VARCHAR(10), IN `v_total` DECIMAL(19,2))
    BEGIN
        UPDATE sales SET
            total = v_total
        WHERE sales_id= v_sales;
    END$$
```

updateSales procedure

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `updateSales2`(IN `v_sales`
    VARCHAR(10), IN `v_pay` DECIMAL(19,2), IN `v_note` VARCHAR(20), IN
    `v_total` DECIMAL(19,2))
    NO SQL
    BEGIN
        UPDATE sales SET
            payment = v_pay,
            note = v_note,
            total = v_total
        WHERE sales_id= v_sales;
    END$$
```

updateSales2 procedure

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `updateService`(IN `v_svs`
    VARCHAR(10), IN `v_name` VARCHAR(50), IN `v_price` INT(10), IN `v_size`
    VARCHAR(5))
    NO SQL
    BEGIN
        UPDATE services_basic SET
            service_name = v_name,
            price = v_price,
            car_size = v_size
        WHERE service_id= v_svs;
    END$$
```

updateService procedure

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `updateStatus`(IN `v_emp`  
    VARCHAR(10), IN `v_status` VARCHAR(10))  
    NO SQL  
    BEGIN  
        UPDATE employee SET  
            emp_status = v_status  
        WHERE emp_id= v_emp;  
    END$$
```

updateStatus procedure





ATTACHMENT 1.7

APPENDIX G



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UNIVERSITI TEKNIKAL MALAYSIA MELAKA

BORANG SOAL SELIDIK SISTEM AD-Gate

Kami berterima kasih atas kesudian anda menjawab borang soal selidik ini. Borang soal selidik ini untuk mendapatkan maklumbalas dari pihak tuan/puan mengenai sistem “Mobile-web Gateway for Automative Detailing SME's (AD-Gate)”. Dapatan soal selidik ini akan digunakan untuk meningkatkan kualiti sistem AD-Gate ini.

ARAHAN : Sila jawab dengan mengisi dan menandakan (✓) pada petak yang disediakan.

DEMOGRAFI					
1.	Jantina	Lelaki		Perempuan	
2.	Umur				
3.	Tahap pendidikan				
4.	Peranan dalam syarikat	Pemilik		Penyelia	
5.	Sistem IT yang pernah digunakan.				

ARAHAN : Sila jawab soalan dengan menandakan (✓) berpandukan skala di bawah. Anda diminta untuk menyatakan secara spesifik di ruangan catatan sekiranya skala yang dipilih 1 atau 2.

1	2	3	4	5
Sangat tidak setuju	Tidak setuju	Tidak pasti	Setuju	Sangat setuju

SKALA					
	1	2	3	4	5
LATAR BELAKANG IT PENGGUNA					
1.	Sila nilai diri anda mengenai pengetahuan IT anda.				
2.	Saya menggunakan perisian komputer untuk merekod transaksi kewangan perniagaan.				

KAEDAH SEMASA					
3.	Saya memiliki lebih dari satu rekod jualan harian.				
4.	Kaedah semasa memudahkan rekod jualan harian.				
5.	Kaedah semasa mengambil masa yang singkat untuk menyimpan semula data ke dalam komputer.				
6.	Majikan perlu menyemak semula rekod harian bulanan untuk membuat pengiraan gaji dan jualan.				
7.	Kebarangkalian untuk kehilangan rekod jualan sangat tinggi.				

MESRA PENGGUNA					
8.	Laman web ini membolehkan anda mula menggunakan kandungannya dengan mudah.				
9.	Paparan penuh di mobil membolehkan anda melihat kandungannya dengan mudah.				
10.	Menu navigasi membantu anda menggunakan laman web dengan mudah.				
11.	Opsyen yang ada memudahkan proses navigasi anda.				
12.	Pautan ke laman utama (main page) dari laman-laman utama memudahkan anda mengendalikan laman web ini.				
INTERAKTIVITI DAN PENGURUSAN					
13.	Enjin pencari (search engine) di dalam laman ini berfungsi dengan baik.				
14.	Apabila diklik, opsyen yang berkaitan di menu akan berfungsi seperti yang diharapkan.				
15.	Apabila diklik, kebanyakan pautan yang diberikan untuk ke laman web lain berfungsi dengan baik.				
16.	Elemen-elemen di dalam laman web ini sangat interaktif.				
17.	Informasi yang direkodkan dapat membantu manjikan dalam membuat pengiraan gaji pekerja dan jualan.				
18.	Laporan kewangan dapat disediakan dengan tepat melalui penggunaan laman ini.				
19.	Laporan slip gaji dapat disediakan dengan tepat melalui penggunaan laman ini.				
KECEKAPAN DAN KETEPATAN					
20.	Sistem ini membantu dalam pengiraan jualan seharian.				
21.	Sistem ini memudahkan pengguna mendapatkan laporan harian jualan.				
22.	Sistem ini dapat membantu mengawal data daripada berulang.				
23.	Sistem ini sangat sesuai digunakan di dalam syarikat.				
24.	Sistem ini dapat mengurangkan risiko tunai ditangan tidak sama dengan jumlah untung seharian.				
25.	Sistem ini menepati segala kriteria yang diperlukan dalam mengurus pengurusan harian syarikat.				
26.	Sistem ini membantu dalam pekerjaan seharian.				
27.	Sistem ini dapat menjimatkan masa dari segi mengisi data pelanggan dan servis.				
PENDAPAT ANDA					
28.	Laman web ini mudah dikendalikan				
29.	Laman web ini memberi informasi yang berguna				

30.	Laman web ini sangat mesra pengguna.					
31.	Perisian sistem banyak membantu saya dalam menyiapkan tugas.					
32.	Saya akan menggunakan sistem ini.					
33.	Saya akan mencadangkan sistem ini kepada syarikat yang lain.					

34. Soalan menguji keberkesanan proses :

Pilih satu (1) proses yang anda lakukan di fasiliti ini

- a) Penutupan akaun ()
- b) Daftar masuk kenderaan ()
- c) Daftar servis yang dilanggan pelanggan ()
- d) Pengiraan gaji pekerja ()
- e) Daftar pekerja ()
- f) Laporan harian / gaji ()
- g) Daftar servis ()
- h) Catitan kedatangan pekerja ()

Berdasarkan proses yang dipilih, nyatakan masa yang anda ambil untuk menyelesaikan proses tersebut : _____

Nyatakan masa yang diambil untuk menyelesaikan proses tersebut menggunakan sistem AD-Gate : _____

35. Adakah anda berpuas hati dengan penyampaian keseluruhan laman web ini? Nyatakan alasan anda.

36. Berikan cadangan anda untuk menambahbaik dan menjadikan laman web ini lebih berkesan penggunaanya.

SOAL SELIDIK TAMAT



ATTACHMENT 1.8

APPENDIX H



اونيورسيتي تيكنيكل مليسيا ملاك

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

Fikri Detailing Car Care N Beauty

No. 7A, Jalan MH 1 Taman Muzaffar Heights, 75450 Ayer Keroh,
Melaka

No tel : 06-22889790 || MA0199029-D

Received From :	WD3779F -
Contact No :	
Car Model :	ALZA

OFFICIAL RECEIPT	
OR No.	RS-333323
Date	2017-01-07
Remarks	Full
Cashier	Fikri

Service Code	Service Name	Price
SVS001	Normal wash & vacuum	18.00
Total after discount (inclusive 6% GST) :		16.00
Cash Tendered:		20.00

Example of receipt

Fikri Detailing Car Care N Beauty

No. 7A, Jalan MH 1 Taman Muzaffar Heights, 75450 Ayer Keroh,
Melaka

No tel : 06-22889790 || MA0199029-D

Pay To :	EMP001 - Fatimah
IC No :	940205055678
Contact No :	01127174384
Position :	Supervisor

OFFICIAL PAY SLIP	
Pay No.	SLRY001
Month	November 2016
Employees EPF	156.0000
Remarks	Paid

	Calculation
Basic Salary	1200.00
Overtime	18.00
Commission	200.00
Allowances	200.00
* Total Gross Pay	1618.00
EPF (8%)	96.00
Advanced	500.00
* Total deduction	596.00
Net Pay (Gross Pay - Deduction)	1022.00

Example of pay slip