CSF 35104

FINAL YEAR PROJECT 1 REPORT

TITLE:

CAR RENTAL SYSTEM USING TECHNIQUE FOR ORDER PREFERENCE BY SIMILARITY TO IDEAL SOLUTION (TOPSIS)

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ABSTRACT

Advancement of technology has influence the development in various fields including booking system. There are abundance of application that provide users to find recommendation hotel to book such as Trivago, Expedia, Traveloka and Agoda. But for rental cars, it's difficult to find application that provide this service. Usually car rental owner not advertise their cars on internet but instead they only advertise it among the resident. Problems occur when customer found that it is rarely application for car renting. Renting a car through online and mobile is a need among people who does not have their own transport especially students who needs to move around to do their business outside campus. Usually they had to ask local for any available car to rent nearby and this manual way consume a lot of time since current trend where everything available online. To solve this problem, a platform is needed that can help both owner and rental person in this car rental system. The owner can promote their car and help boost their advertising in this system. While customer can search for any cars available for rent without having waste their time. The expected result of this project are user can easily find a car that available in the system and the management process of rental cars can be easier and efficiency. By using the Technique for Order Preference by Similarity to an Ideal Solution (TOPSIS), this system can help user to make decision based on criteria that has been set and it will show the result.

CHAPTER 1

INTRODUCTION

1.1 Background

Car rental or a car hire agencies is a company which rent cars or automobiles for short period of time for a fee to their customer. In Malaysia, car rental service increasingly becomes the preferred option for most people, especially among students in campuses and universities. This occurs because not all students can afford having their own vehicle and perhaps the university bus service doesn't always help. Besides, the raising taxi fares and inconsistent bus arrivals in Malaysia continue to discourage people from taking up the public transport. Car rental service continues to grow in Malaysia, hence it required an improvement and good monitoring system.

However, some car rental agencies still use a manual system to manage rental car operations by spreading of their available car to local resident. This method wasting money and time for both rental person and car rental owner. Therefore, it is proposed to have a system that can be used to provide booking and management to make easier for both of them. This system takes information from the rental person and car rental owner through filing their details. A user being registered in the website has the facility to book a vehicle as required. Car rental owner can register their car to advertise for the user. The system will help them by find the car rental base on the criteria that user given using Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) method. This system will make analysis according to the selected criteria from the user and will calculate using TOPSIS calculation. The car with the highest ranking will be ranked first.

1.2 Problem Statement

There are bunch of rental car that owned by different owner. Some of the car that the owner provided are different from other and each of the car have their own advantages and disadvantages. There are various type of car will give burden for user to choose which car is the best for them. Besides that, manual system does not allow user to booking online and hard to keep track on the record of rental cars. Instead, the car owner only spread the word about their available car to a local resident only. User must contact a car rental owner and contract out for a vehicle and this will delay the process of renting car. This method consume time for both car rental and car rental owner.

1.3 Objective

The main objective of this project is to develop a system that allow the car rental owner to advertise their cars and allow user to search any type of car in this system. In order to achieve the above mentioned aim, below is the objectives of this project.

- To propose a system to manage the car rental business
- To apply technique for user's criteria preference
- To test of system functionality of the proposed technique

1.4 Scope

The scopes for this project are identified to make the system development process easier. The scope will be explained from user aspect of view.

I. Admin

- Manage and monitor the application
- Admin can view report

II. Owner

- Register and login profile
- Register, update, and delete car details
- Approve booking status

III. User

- Register and login profile
- Search for car base on criteria chosen
- Book car

1.5 Limitation of Work

There are several limitations that occurred for this system. The problem and limitation for this project are users need internet connection in order to check the car that available in the system, without internet connection they can’t use this system. Futhermore, this system only provide a minimum payment system.

1.6 Gantt Chart

Table 1.1 shows Gantt charts for the project proposed. Gantt charts were used as planning and scheduling to make the project.

Table 1.1 Gantt Charts

ACTIVITY/ WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Initiating														
Discuss for the topic with supervisor														
Project title proposal														
Planning														
Proposal Writing - introduction														
Proposal writing – literature review														
Proposal progress presentation														
Propose solution methodology														
Proof of concept														
Analysis and design														

Design system model														
Design database														
Design Interface														
Drafting report of proposal														
Final Presentation														
Final report submission														

1.6 Expected Result

The expected result of this project are user can easily find a car that available in the application and the management process of rental cars can be easier and efficiency. By using the Technique for Order Preference by Similarity to an Ideal Solution (TOPSIS), this system can help student to make decision based on criteria that has been set and it will show the result. Car rental owner also can be easier to advertised their available car by registered it into the system.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter provide the literature review for the system that will be developed. The review must be described, evaluated and clarified into a summary or synopsis of a particular area of research. The literature review for this project would discuss and review about the methods in multiple criteria decision making and the implementation of TOPSIS to the system. This review can be guideline to develop. Furthermore, literature review helps to provide the study of technique and approach was analysed to find out the best implementation technique that can be used in this system and discuss about the current system.

2.2 Research on Different Technique

Different technique in multi-criteria decision method has been analyse. Previous research and articles that related to the specific technique were observe on their advantage and disadvantages for implementation the suitable technique in the system. Three technique were chosen for the literature review.

2.2.1 Technique for Order Preference by Similarity to Ideal Solution (TOPSIS)

The TOPSIS is a multi-criteria decision analysis method developed by Hwang and Yoon (1981) with further developments by Yoon (1987) and Hwang, Lai and Liu (1993) (Surendra, 2016). This method is to construct the best ideal solution (note as p+) and the worst ideal solution (note as p-) to the problem of multiple criteria while the p+ is hypnotically optimal solution from the criteria but the p- is the worst solution from the criteria. The rule of TOPSIS is to rank and compare each alternative of the result with p+ and p- (Zhongyou, 2012). TOPSIS is one of the numerical methods of the multi-criteria decision making. This is a broadly applicable method with a simple mathematical model. Furthermore, relying on computer support, it is very suitable practical method (Pavić, Zlatko & Novoselac, Vedran, 2013).

2.2.2 Analytic Hierarchy Process (AHP)

This technique is created by Thomas L. Saaty in the 1970's, this method consists in the development of a model that reflects the workings of the human mind in the evaluation of the alternatives facing a complex decision problem. The application of AHP comprises the following stages: structuring of criteria and alternative; collecting judgements; calculating priorities; checking the consistency of judgements, and lastly, calculating the overall priorities of the alternatives. (Maria Celeste de Carvalho Ressiguier Ribeiroa, 2016)

2.2.3 Weighted Sum Method (WSM)

WSM is the best known and simplest multi-criteria decision analysis method for evaluating a number of alternatives in term of number of decision criteria. (Hamdan O. Alanazi, 2013). The WSM is the general model which has been used for different applications such as robotics, processing data, and others. It is a method often used in single dimension issues. (Budiharjo , Agus Perdana Windarto and Abulwafa Muhammad, 2017)

2.3 Table of Comarison

From Table 2.1, advantage and disadvantage of the technique had been compared. TOPSIS is the most suitable technique to be implement in this system for ranking base on criteria. The system will display the car that user desire by rank the car in order.

Table 2.1 Table of Comparison for Each Technique

Author	Title	Method	Description	Advantage	Disadvantage
Deny Jollyta, (2018)	TOPSIS Technique for Selecting of Property Developme nt Location	TOPSIS	This is study to maintain a customer satisfaction to conduct a survey to find a strategic location before building a project. Six criteria were chosen such as land data, alternatives, weighting criteria, survey results and criteria values.	-TOPSIS is one of the decision support that can solve multi criteria problems and can produce decision quickly and precisely. -Easy to use	- TOPSIS never considered the risk assessment for a decision maker.
Marler, R. & Arora, Jasbir. (2010).	The weighted sum method for multi-objective optimization : new insights	WSM	This application is used to oprovide a single solution point that reflects preferences presumably incorporated in the selection of a single set of weights	-one of the simple and scalable method and easy to implement.	- not suitable to use for ranking.
Chinonye Ugboma,	An Analytic Hierarchy	AHP	This study presents the findings of a	-The hierarchy of	- used pairwise

Ogochukwu Ugboma and Innocent C Ogwude, (2006)	Process (AHP) Approach to Port Selection Decisions – Empirical Evidence from Nigerian Ports		survey to determine the service characteristics that shippers consider important when selecting a port and the way these characteristics are prioritised according to their importance. Seven criteria for the port selection decision and four ports were identified, and the decision problem was structured into a three-level hierarchy using the Analytic Hierarchy Process.	problem could help to formulate the decision in a logical way. -Able to rank criteria according to the needs of the buyer.	comparison between criteria and pairwise comparison between alternatives for each criteria.

2.4 Implementation of Car Rental System using TOPSIS method

From the research above, the best algorithm for this application is TOPSIS method. The application will be more efficient if Car Rental System are implement with TOPSIS method. Let's discuss how TOPSIS work to search for car in this application.

Consider there are three cars available for rent with three criteria as Table 2.2

Table 2.2 Car with criteria

Atrribute/ Criteria	Price	Rating	Number of seats
Car 1	250	5	5
Car 2	200	3	4
Car 3	300	4	7
Performance Value	438.75	7.07	9.49

Table 2.2 shows that each car have their criteria. To get the performance value all the data in the criteria must be calculate using this formula $\sqrt{E}\, Xn^2$ for each criteria.

Next, the data for each criteria will be normalise. Divide the data with their own criteria performance values as shown in Table 2.3 to get result.

Table 2.3 Normalised data

Atrribute/ Criteria	Price	Rating	Number of seats
Car 1	0.57	0.71	0.53
Car 2	0.46	0.42	0.42
Car 3	0.68	0.57	0.74
Performance Value	438.75	7.07	9.49

Third, using weight age to get weighted decision matrix. Let weight be price = 0.5, number of seat = 0.2 and rating = 0.3. The normalised data will be multiply with the weight age to get weighted decision matrix as shown in Table 2.4. Total of weight age must be 1.0

Table 2.4 Weighted Decision Matrix

Atrribute/ Criteria	Price	Rating	Number of seats
Car 1	0.28	0.213	0.106
Car 2	0.23	0.126	0.084
Car 3	0.34	0.171	0.148
Vj+	0.23	0.213	0.148
Vj-	0.34	0.126	0.084

From table 2.4 Vj+ is the best ideal solution while Vj- is the worst ideal solution. Vj+ must be taken from the highest matrix while Vj- taken from the lowest matrix. Contrary for price criteria which is the lowest one will be the Vj+ while the highest one is Vj- because the lower the price the better.

Then, calculate Euclidean Distance (Sj) from ideal best (Vj+) and ideal worst (Vj-) as Table 2.5.

$$S+ = \left[\Sigma_{J=1}^{\eta}\left(V_{ij} - V^{+j}\right)2\right]^{0.5}$$

$$S- = \left[\Sigma_{J=1}^{\eta}\left(V_{ij} - V^{-j}\right)2\right]^{0.5}$$

Table 2.5 Calculated Euclidean Distance

Attribute/ Criteria	Price	Rating	Number of seats	Sj+	Sj-
Car 1	0.28	0.213	0.106	0.07	0.11
Car 2	0.23	0.126	0.084	0.11	0.1
Car 3	0.34	0.171	0.148	0.12	0.08
Vj+	0.23	0.213	0.148		
Vj-	0.34	0.126	0.084		

Then, calculate the performance score (Pi). Pi = Sj-/(Sj+ (+) Sj-) as shown in Table 2.6.

Table 2.6 Calculated Performance Score

Attribute/ Criteria	Sj+	Sj-	Sj+ (+) Sj-	Pi	Rank
Car 1	0.07	0.11	0.18	0.61	1
Car 2	0.11	0.1	0.21	0.48	2
Car 3	0.12	0.08	0.2	0.4	3

Based on the example above, car 1 are the most ideal solution for the chosen criteria. This is how the application will print out the result to user by order with car 1 in the top, followed by car 2 and at the bottom id car 3. So, user will know which one is the best for their desire.

2.5 Existing System

2.5.1 Rentalcars.com

This application is used to ensure the customers have access to worldwide car hire services at the lowest possible prices. There are several characteristics for this application. User can find car and pick-up point based on customer selected location. Customer can easily select car, enter the details and pay the booking. Provide the service that car can be sent to customer according to designated area. Figured 2.1 shows the interface of RentalCars system.

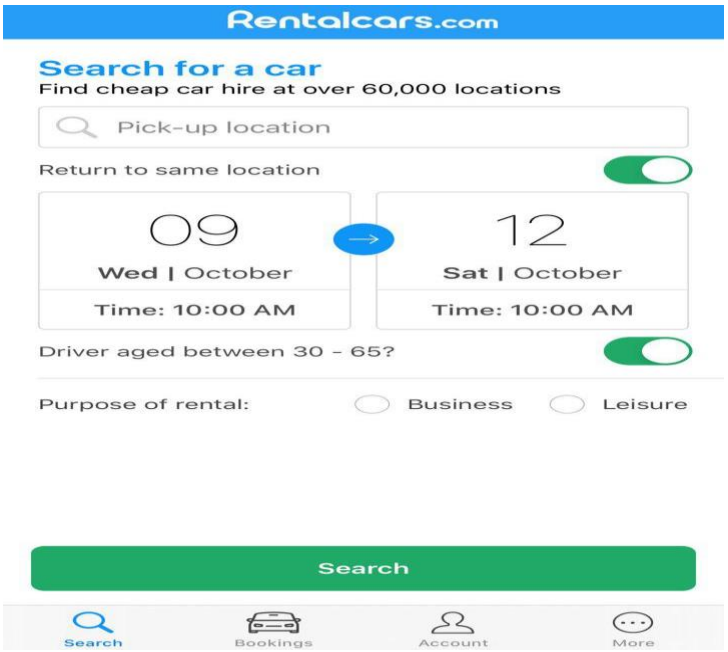


Figure 2.1 Interface Of RentalCars system

2.5.2 Speedhome.com

This system is provide an accessible and secure home rental platforms for landlord and tenants. It is combine protection and technological innovation in the house rental and property market. This system provide a rental payment reminder to tenants through phone cells, emails, whatsApp's and SMs. Speedhome assists to their customer to manage with legal requirements for a fast eviction process and it is completely free-to-use for searching or posting properties. Figure 2.2 shows interface of Speedhome system.

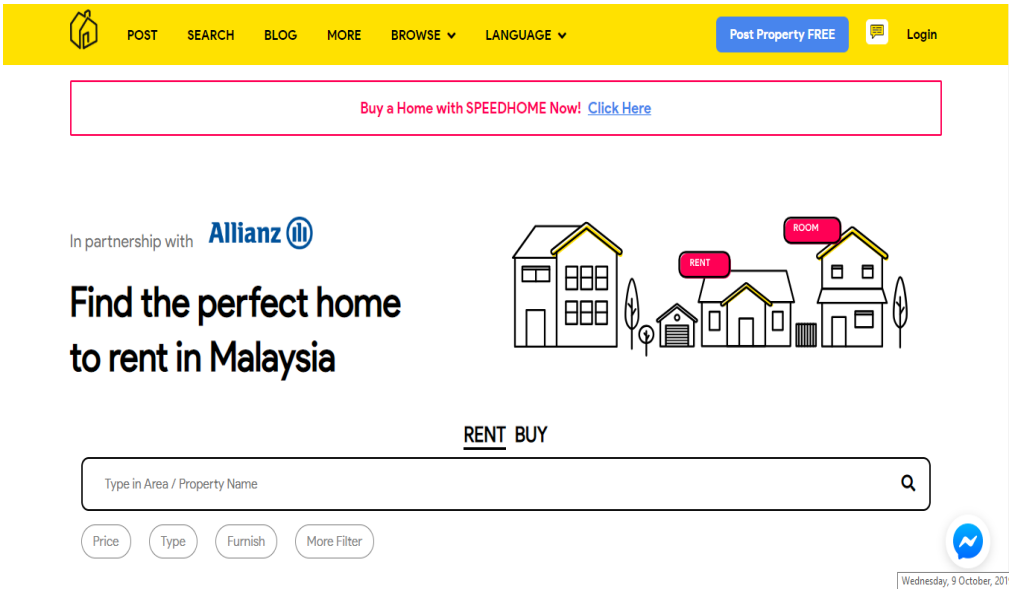


Figure 2.2 Interface Of Speedhome system

2.5.3 EasyRentCars

This application is dedicated to making car hire online as easy as possible and providing online services at location worldwide. This application provide a free cancellation of car rental reservation and can get all the money back and assure every customer of the lowest price and 100% refund of the difference. It also provide a free online GPS that allow you to explore new places. Figure 2.3 shows interface of EasyRentCars system.

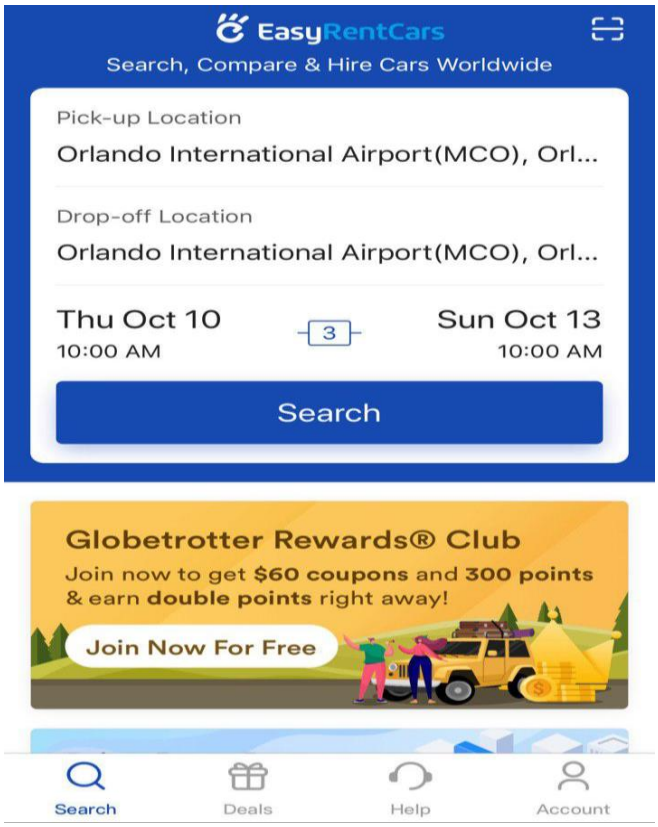


Figure 2.3 Interface Of EasyRentCars system

2.6 Summary

This chapter discuss literature reviews that have been collected and reviewed along the studies. Literature review can help developer to discover any problems of any existed system or research that can be improve in future.

As a summary, the integration of Car Rental System with TOPSIS method is the most suitable to use in this developing system. TOPSIS technique will help user to find car based on criteria and the system will rank the result with the most ideal one on top while the worst one on the bottom.

CHAPTER 3

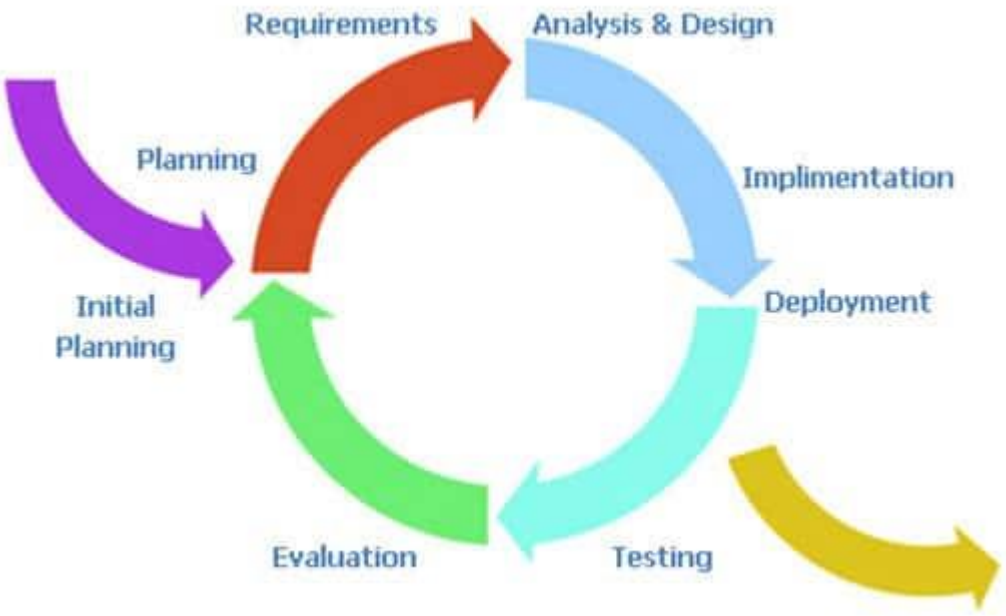
METHODOLOGY

3.1 Introduction

Software development process are involving lots of steps towards implementation and a standard life cycle steps are followed across this process. There are various type of software development life cycle (SDLC) model. The SDLC that will be used on this project is Iterative model.

3.2 Iterative Model

The iterative model is repetition incarnate. Instead of starting with fully known requirements, you implement a set of software requirements, then test, evaluate and pinpoint further requirements. A new version of the software is produced with each phase, or iteration. Rinse and repeat until the complete system is ready.



3.2.1 Initial Planning Phase

The first phase of iterative model is planning. Brainstorming and gathering all problem that can be found and any request of system for the car rental problem. Current system or the manual system are not to reliable and lack of customer friendly. Usually it's hard especially for student to find a car for rent while the car owner hard to advertise their car. The manual method consumes more time and money. Discussing with supervisor to choose a project that can be proposed. A specific title for this project are proposed which is Car Rental System.

3.2.2 Planning Phase

After decided the title and project to be work, discussion continue on the whole review of the system, goal of the system and expected outcomes. The objective of this project are gathered based on user behaviour on finding a car rental near them. Some research is made to find any existed system for literature review. The objective of this project are gathered by observing user activity in finding car for rent. The milestone and Gantt chart are created to ensure that the proposed system is successfully complete within the schedule by make research, observing and interview.

3.2.3 Requirement Phase

All the existed system for specific technique that has been gathered are been analyse, summarize and observe to identify any requirement are needed for the application. Different technique in multi-criteria decision method has been observe. Previous research and articles that related to specific technique were observe on their advantage and disadvantage for implementation the suitable technique in the system. Technique for Order Preference by Similarity to an Ideal Solution (TOPSIS) were chosen for the technique that will be implement in the system because it is the most suitable for ranking base on criteria that will be feature in the system..

3.2.3.1 Project requirement

There are two requirements that needed to develop the system that is the software requirement and hardware requirement. This is important to ensure the development of the project went well and for future references.

1. Software Requirement

Table 2.1 shows the software requirements for the proposed system.

Table 2.1 Development software requirement

Software	Description / Purpose
XAMPP	Server to run localhost
Notepad++	Use to code the program of the project, especially connection application to the database
PhpMyAdmin	Programming language
Bootstrap	Framework to develop system
Microsoft Word 2016	Documentation of application
MySQL	For system database
Edraw Max 7.9	To design CD, DFD and ERD

2. Hardware Requirement

Table 2.2 shows the hardware requirement for the proposed system.

Table 2.2 Development hardware requirement

Hardware	Description / Purpose
Laptop	hp laptop
Processor	Intel ® Core ™ i3 – 5005U CPU @ 2.00 GHz 2.00 GHz
Random Access Memory (RAM)	4.00 GB
Operating system	Windows 10
System type	64-bit Operating System

3.2.4 Analysis and Design Phase

In this phase, the design of the system is created and the development of the prototype. Context diagram (CD). Data flow diagram (DFD) and entity relationship diagram (ERD) are created. All the diagrams are used as a guideline for the flow of the system. There are 5 main process in data flow diagram that consists manage profile, manage car, book, rating, and generate report. Next, data model are created. Database for this application are user table, car table, booking table, rating table, owner table and admin table. These database will be used in designing prototype. The prototype will have basic functionality such as add car, update car, delete car and register user.

3.2.5 Implementation Phase

From the design phase, all the dataflow and data model will be implemented in this phase. Programmer will be coded the model. User interfaces are also included in the phases as they are important in delivering information and message to the user.

3.2.6 Testing Phase

On this phase the prototype of Car Rental System will be tested before it will be implemented in a full version of the application. User interface and database connection also will be tested. Car Rental System will be tested by tester and any feedback will be recorded for evaluation phase.

3.2.7 Evaluation Phase

All the feedback that have been gathered from tester will be evaluate. Any bug and error in the Car Rental System will be fix before it is release to user.

3.2.8 Deployment Phase

Once the system has been tested and evaluated, the full functional system will be release to the end user. User will use it to make sure either the system are correctly functioning or not.

3.3 Framework Design

Figure 3.2 show the flow of the process of what the users can do with Car Rental System. User can manage profile, search car, book car, and view car that available in the system. User also can give rating to the car. Owner can manage profile, manage car and approve the booking. Admin can monitor system and view all the reports.

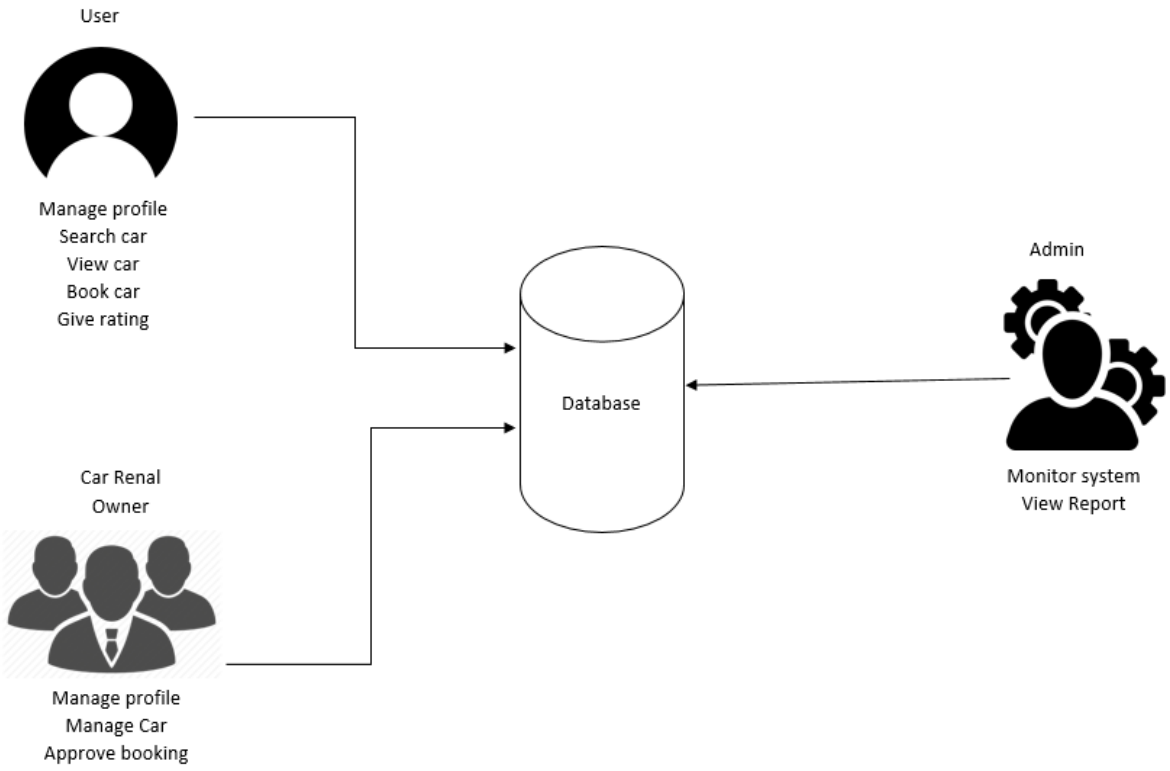


Figure 3.2 Framework Design

3.4 Context Diagram

Figure 3.3 shows the Context Diagram for this system. This system involves three main entities which is admin, user and owner. User can bring user detail, book detail, and rating detail to the system. While owner can register car details to be presented in the application and give the approve booking into the system. As admin can monitor the system and view the reports.

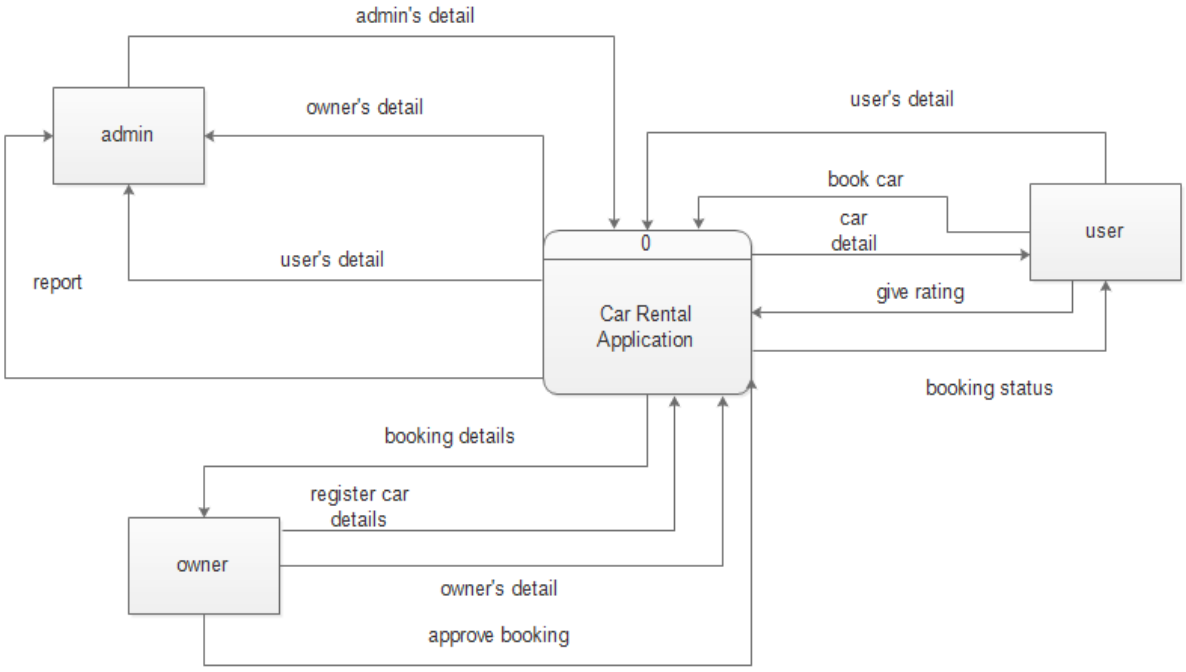


Figure 3.3 Context Diagram

3.5 Data Flow Diagram

3.5.1 Data Flow Diagram Level 0

Figure 3.4 shows that admin, owner and user must register to access the system. All the users which are owner and user can manage their detail and all the information will be stored in user and owner table respectively. Owner can manage their car and enter the details of the car into the system and the details will be stored in data store car. When user book the car, then every booking detail will be stored in booking data store and it will display to the owner about the booking. After user do a booking, user can rate a car and the rating details will stored in rating table. Then, admin can view report from every car detail, booking detail and detail of user and owner.

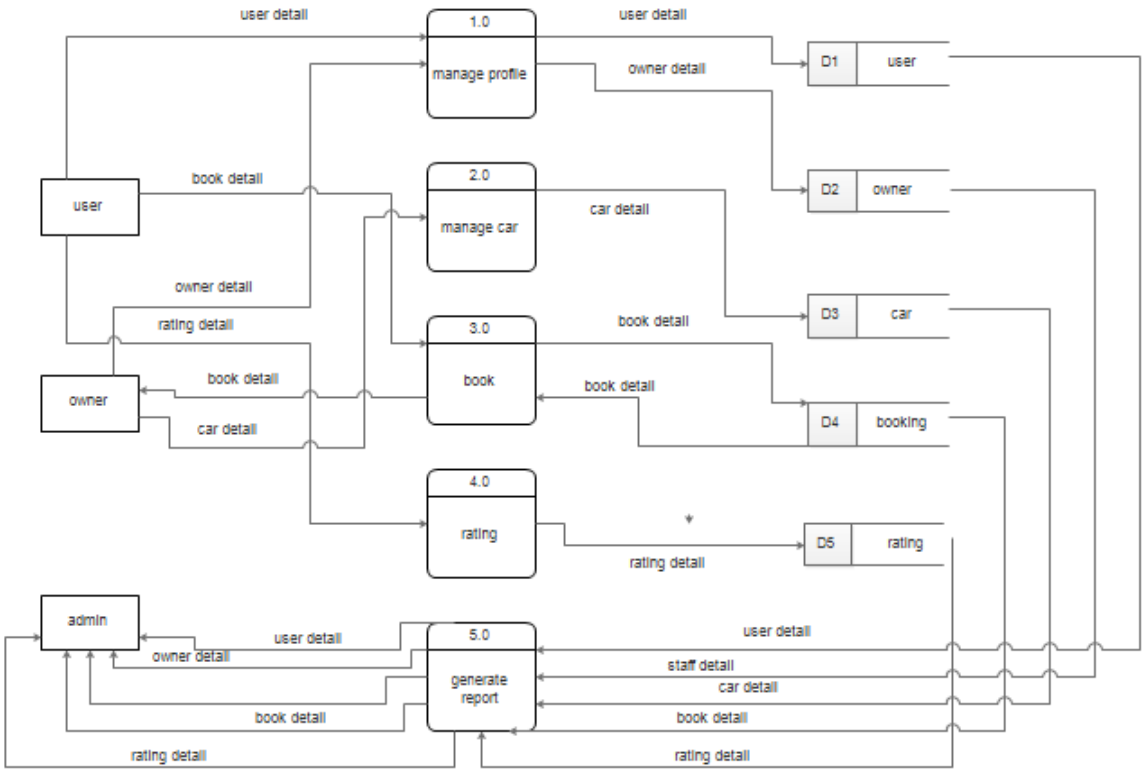


Figure 3.4 Data Flow Diagram

3.5.2 Data Flow Diagram Level 1 Process 2.0

Based on figure 3.5, owner can register car. The car detail will be stored in table car and it will display the details to owner after they register it. It also can be appear in the application for user to view. Owner also can add, update, and delete the car detail.

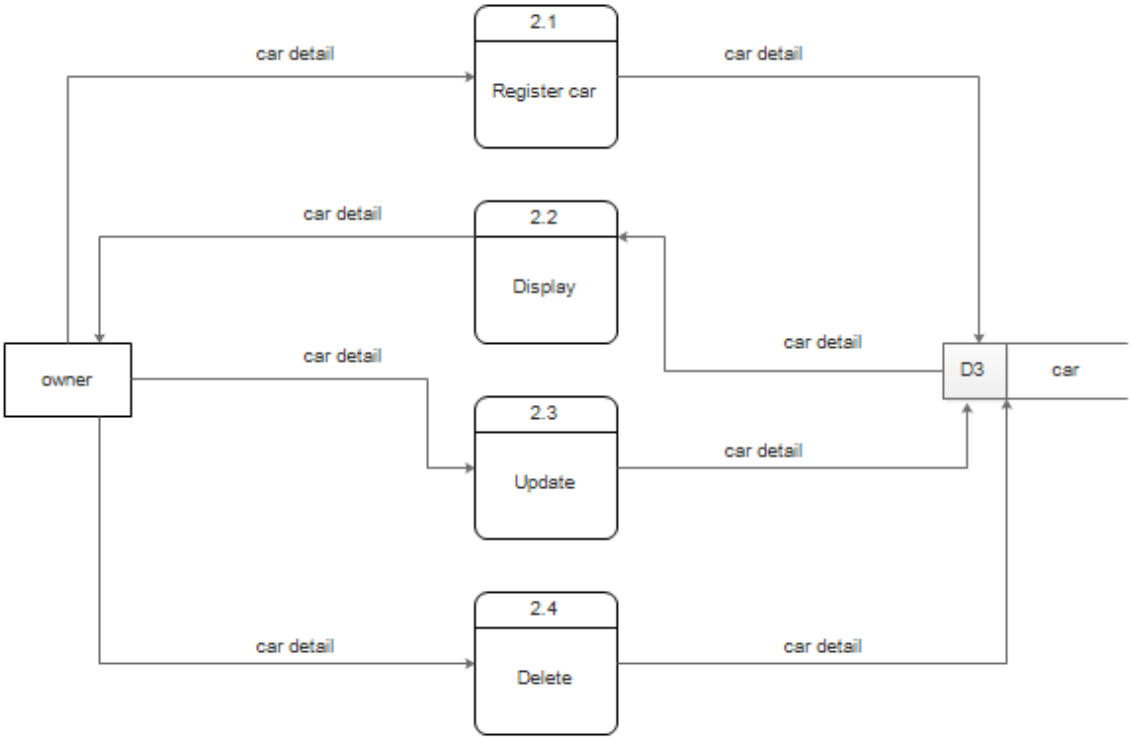


Figure 3.5 Data Flow Diagram level 1 Process 2.0

3.5.3 Data Flow Diagram Level 1 Process 3.0

Based on figure 3.6 user can search the car than user can make a booking for that car that has been search. The booking detail will be display to owner and owner will approve it. Then, status booking will be appear for the user and all the booking detail will be stored in the booking table. Admin can view all the report for the booking detail.

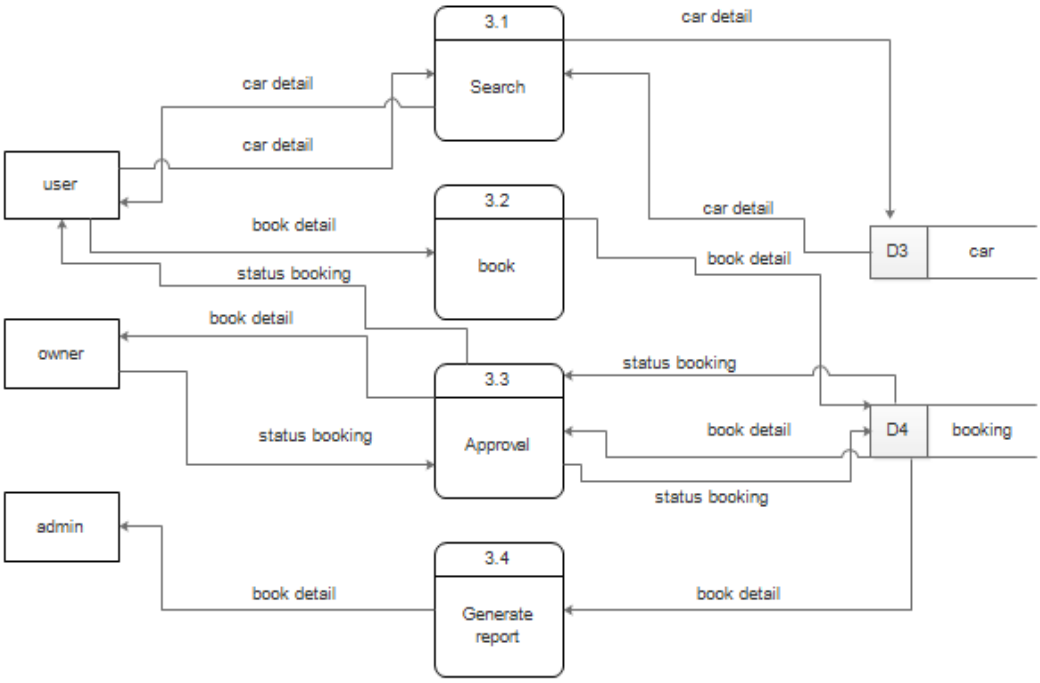


Figure 3.6 Data Flow Diagram Level 1 process 3.0

3.6 Entity Relationship Diagram (ERD)

Figure 3.7 shows the ERD which contains four entities which are USER, BOOKING, CAR, and OWNER. This ERD will shows the relationship between entities. Each entities have their own attributes. User can only make one booking on a car in a time. One car can have many booking. Owner can add more than one car. Then, one car can have many rating by user.

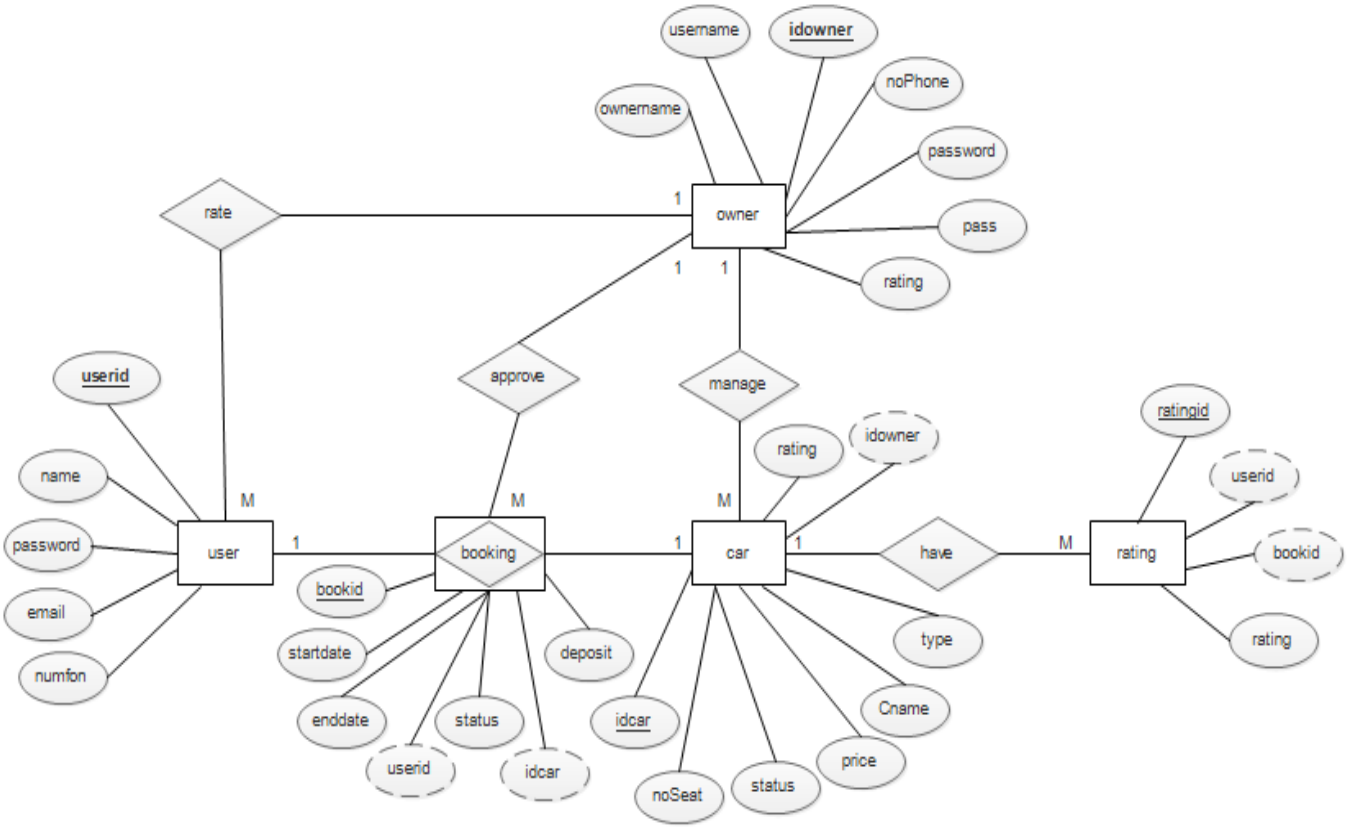


Figure 3.7 Entity Relationship Diagram

3.7 Data Model

Table 3.1 shows user table that have 6 attributes with userid as the primary key.

Table 3.1 User Table

Name	Type	Null	Comment
userid	Varchar (100)	No	Primary Key
name	Varchar (100)	No	
noic	Int(12)	No	
numfon	Int (15)	No	
Password	Varchar(100)	No	
email	Varchar(100)	No	

Table 3.2 show owner table data store that have 6 attributes with idowner as the primary key.

Table 3.2 Owner Table

Name	Type	Null	Comment
idowner	Varchar (100)	No	Primary Key
username	Varchar (100)	No	
ownername	Varchar (100)	No	
noPhone	Int (15)	No	
Password	Varchar(100)	No	
rating	Int (15)	No	

Table 3.3 shows that car table that have 7 attributes with idcar as primary key.

Table 3.3 Car Table

Name	Type	Null	Comment
idcar	Int(100)	No	Primary Key
cname	Varchar (100)	No	
price	Int(100)	No	
noSeat	Int (20)	No	
type	Varchar(100)	No	
status	Varchar (20)	No	
idowner	Varchar (100)	No	Foreign key reference owner

Table 3.4 shows that admin table that have 2 attributes with username as primary key.

Table 3.4 Admin Table

Name	Type	Null	Comment
username	Varchar(100)	No	Primary Key
password	Varchar(100)	No	

Table 3.5 shows that booking table is a composite table that have 8 attributes with bookid as primary key and contains 2 foreign key which is idcar from table car and userid from table user.

Table 3.5 Booking Table

Name	Type	Null	Comment
bookid	Int(100)	No	Primary Key
startdate	Varchar (100)	No	
enddate	Int(12)	No	
deposit	Int (15)	No	
status	Varchar(100)	No	
idcar	Int (100)	No	Foreign key reference car
userid	Varchar (100)	No	Foreign key reference user

Table 3.6 shows that rating table contains 4 attributes with ratingid as primary key and hold 2 foreign key bookid from table booking and userid from table user

Table 3.6 Rating table

Name	Type	Null	Comment
ratingid	Int(100)	No	Primary Key
rating	Int (5)	No	
bookid	int(100)	No	Foreign key reference booking
userid	Varchar (100)	No	Foreign key reference user

3.8 Interface Design

3.8.1 Home Interface

Figure 3.7 shows home interface for User, Admin and Owner.

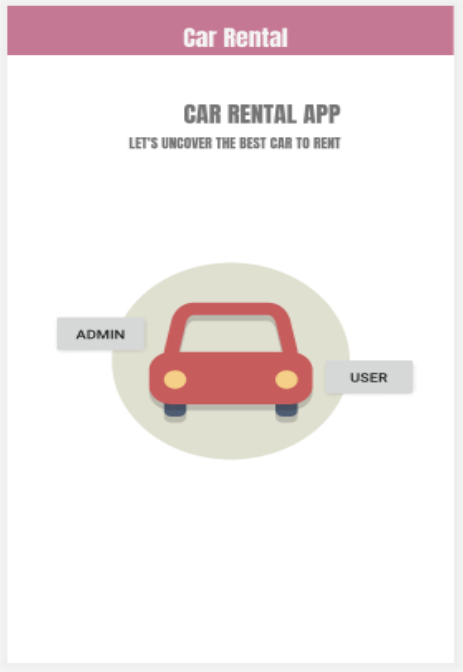


Figure 3.7 Home Interface

3.8.2 Login Interface

Figure 3.8 shows login interface for User. User must enter their email and password to use this system.

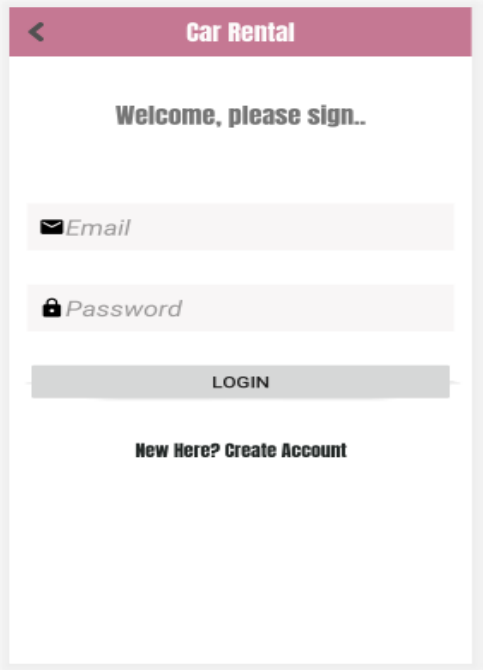


Figure 3.8 User Login Interface

Figure 3.9 shows login interface for Owner. Owner must enter their username and password to use this system.

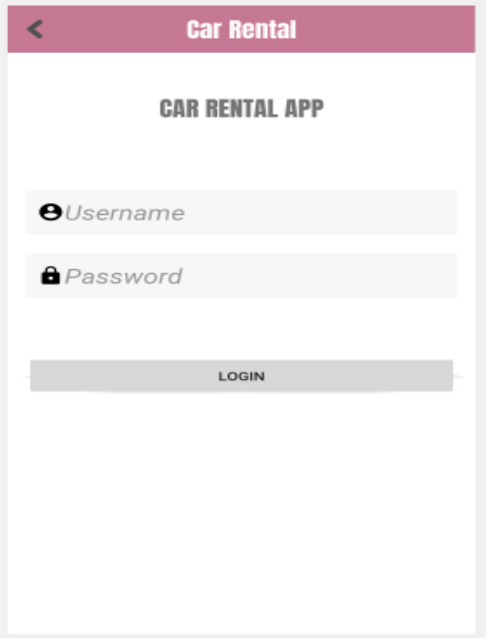


Figure 3.9 Owner Login Interface

3.8.3 Register Interface

Figure 3.10 shows register interface for user and owner. User and owner need to register their details to use this system.

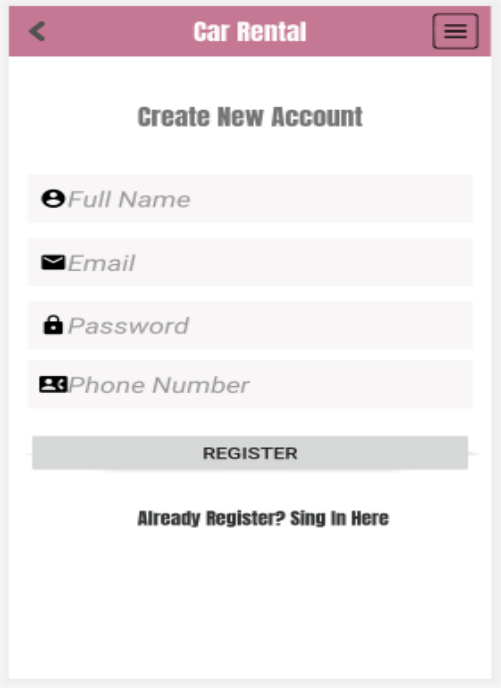


Figure 3.10 Register Interface

3.8.4 Manage Car Interface

3.8.4.1 Register New car

Figure 3.11 shows interface to register a new car. Owner must register the car detail into the system.

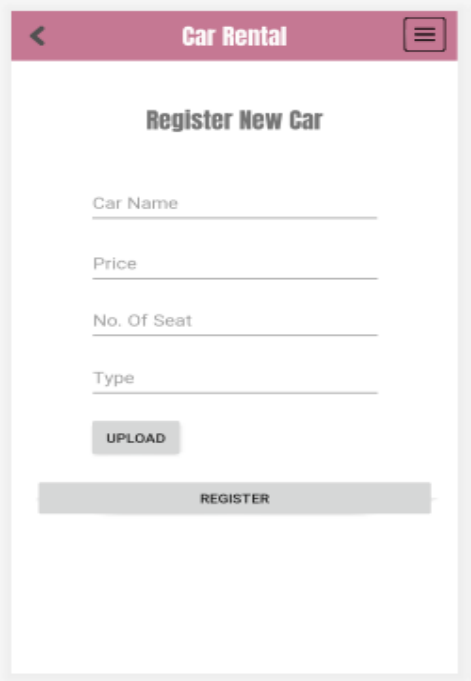


Figure 3.11 Register New Car Interface

3.8.4.2 Update Car interface

Figure 3.12 shows interface to update a car detail.

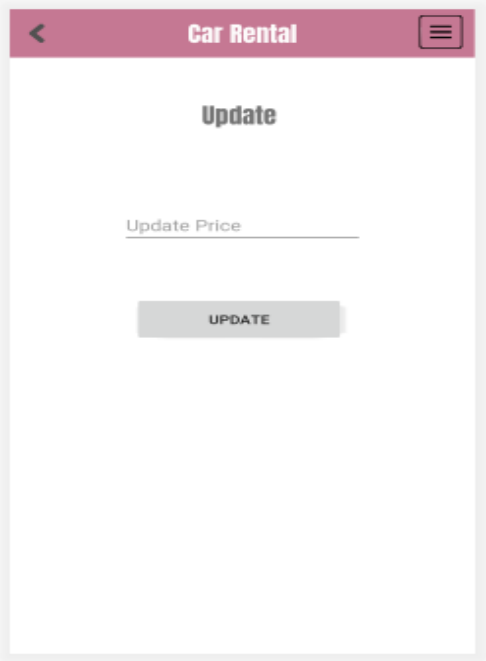


Figure 3.12 Update Interface

3.8.5 Display Car Interface

Figure 3.13 shows interface to display car for user.

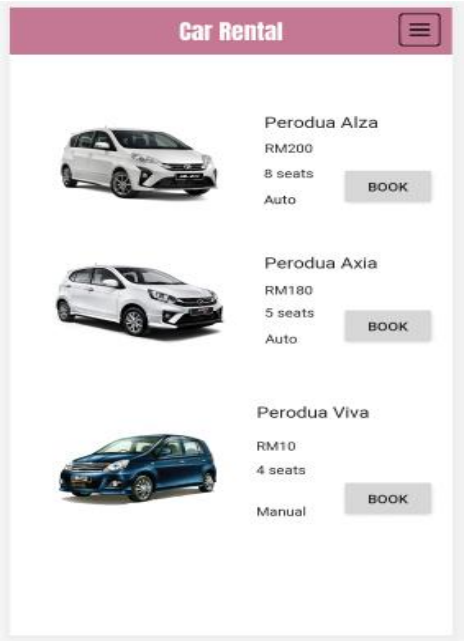


Figure 3.13 User Display Car

Figure 3.14 shows interface to display car for owner.

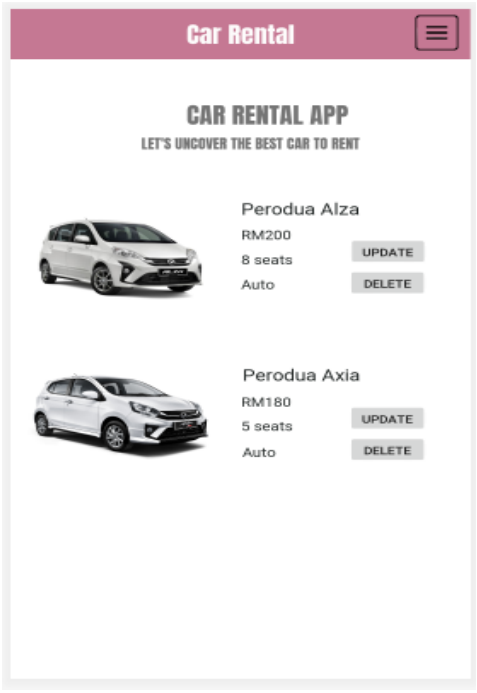


Figure 3.14 Owner Display Car

CHAPTER 4

ANALYSIS AND CONCLUSION

4.1 Design Summary

Car Rental System is improvising the existing system and purpose of creating the system is to enable user to register their details and rent a car for their use and it also for owner to register a car into the forms provided in the system. Then, all the details will collect and it store all the information in the database. After they entered all the information, it will be sent into the own data store respectively. For this system, it has three parts which are for user, admin, and owner. If they login into the system, they will go to their own main page. This system allow user to find a car and rent a car that presented in the system. While owner can register their details and register car details to be presented in the system and give the approve booking.

4.2 Expected Result for Development

Car Rental System is developed to be able to solve the problem for user to rent a car and also help owner car rental advertise and manage their car rental business without wasting time. User need to contact owner to ask the availability of car rental and need to inform and fill the form manually to rent a car and it will be time consuming and wasting time. It also consumes time to admin for generate the monthly report one by one. The development of this system is solely to avoid those problem. By using the Technique for Order Preference by Similarity to an Ideal Solution (TOPSIS), this system allow user to find the car that availability in the system based on their criteria preference and renting the car easier. Owner also have a benefit using this system and save time and money to advertise their car rental.

4.3 Conclusion

Car Rental System has offered an advantage to both car rental as well as car rental owner to efficiently and effectively manage the business and satisfies user's need.

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