Contents

Introduction

This project is designed so as to be used by Car Rental Company specializing in renting cars to customers. It is an online system through which customers can view available cars, register, view profile and book car.

Reason for the Project

The advancement in Information Technology and internet penetration has greatly enhanced various business processes and communication between companies (services provider) and their customers of which car rental industry is not left out. This E-Car Rental System is developed to provide the following services:

- ➢ **Enhance Business Processes:** To be able to use internet technology to project the rental company to the global world instead of limiting their services to their local domain alone, thus increase their return on investment (ROI).
- ➢ **Online Vehicle Reservation:** A tools through which customers can reserve available cars online prior to their expected pick-up date or time.
- ➢ **Customer's registration:** A registration portal to hold customer's details, monitor their transaction and used same to offer better and improve services to them.
- ➢ **Group bookings:** Allows the customer to book space for a group in the case of weddings or corporate meetings (Event management)

Problem Statement

A car rental is a vehicle that can be used temporarily for a fee during a specified period. Getting a rental car helps people get around despite the fact they do not have access to their own personal vehicle or don't own a vehicle at all. The individual who needs a car must contact a rental car company and contract out for a vehicle. This system increases customer retention and simplify vehicle and staff management.

Aims & Objectives

- • To produce a web-based system that allow customer to register and reserve car online and for the company to effectively manage their car rental business.
- • To ease customer's task whenever they need to rent a car.

Functional Requirements

Requirement analysis is a software engineering technique that is composed of the various tasks that determine the needs or conditions that are to be met for a new or altered product, taking into consideration the possible conflicting requirements of the various users.

Functional requirements are those requirements that are used to illustrate the internal working nature of the system, the description of the system, and explanation of each subsystem. It consists of what task the system should perform, the processes involved, which data should the system holds and the interfaces with the user. The functional requirements identified are:

- **Customer's registration:** The system should allow new users to register online and generate membership card.
- **Online reservation of cars:** Customers should be able to use the system to make booking and online reservation.
- **Automatic update to database once reservation is made or new customer registered:** Whenever there's new reservation or new registration, the system should be able update the database without any additional efforts from the admin.
- **Feedbacks to customers:** It should provide means for customers to leave feedback

Activity Diagram

Activity diagrams graphically represent the sequential business and operational workflows of a system. It is a dynamic diagram that shows the activity and the event that causes the object to be in the particular state. The workflows from activity diagram will serve as guide for system navigation in the final design phase of the system.
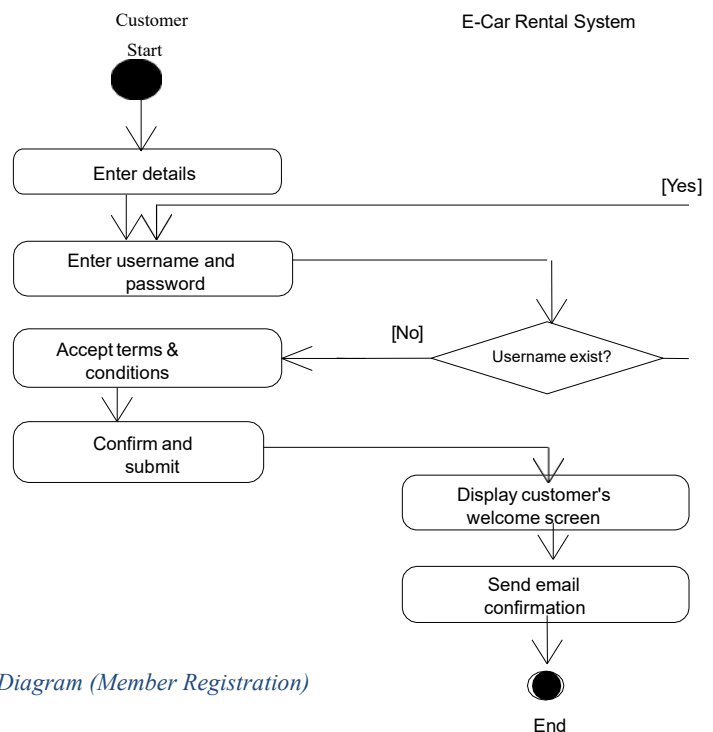
➢ **Member Registration**

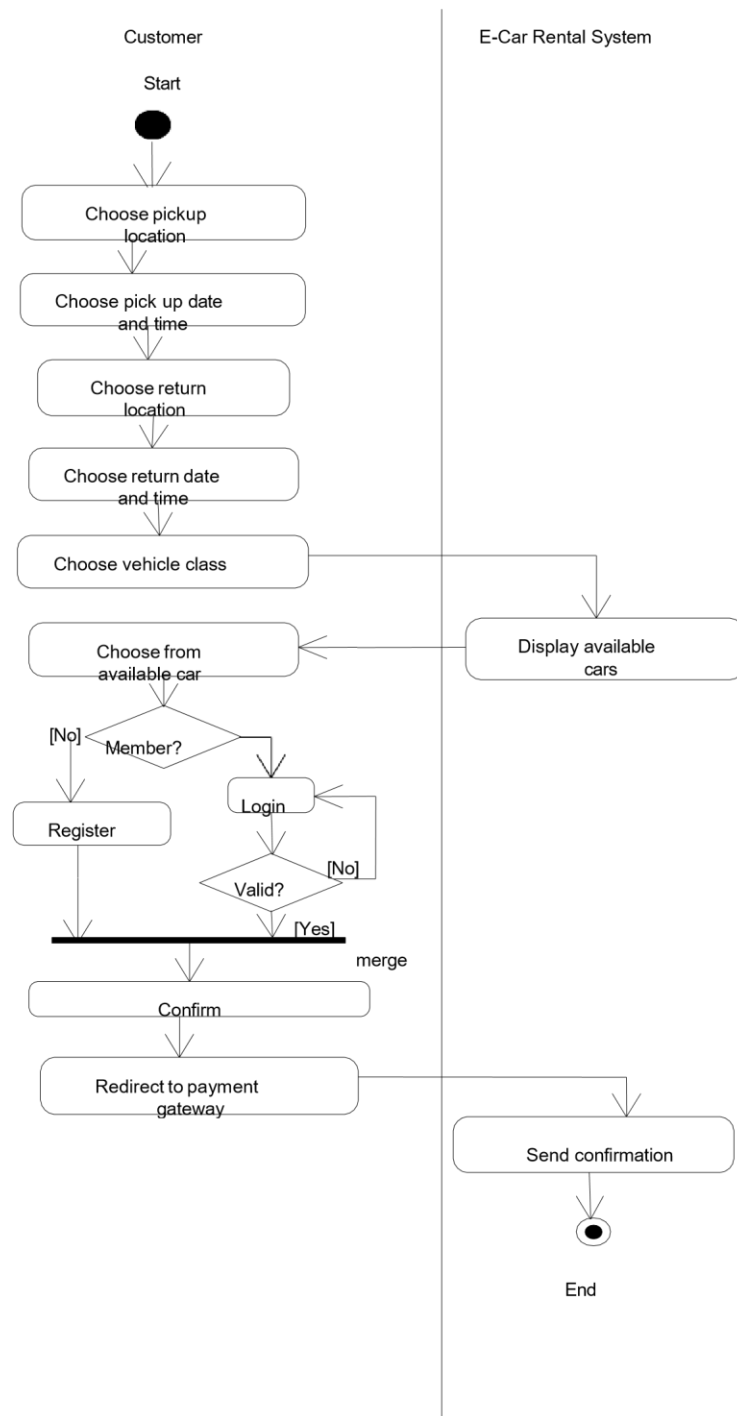*Figure 1: Activity Diagram (Member Registration)*

➢ Reservation of Car

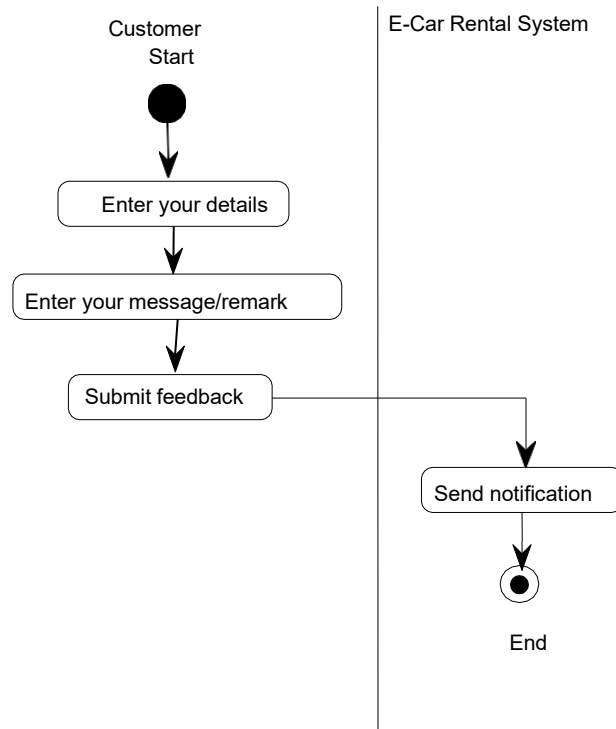*Figure 2: Activity Diagram (Car Reservation)*

➤ Customer Feedback

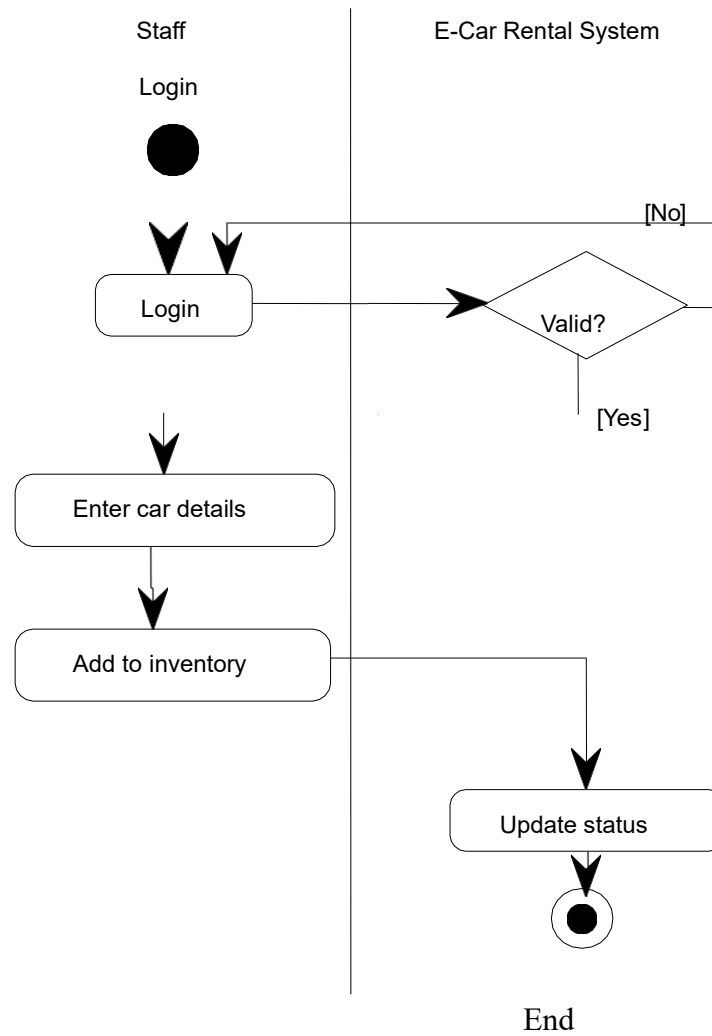**Figure 3:** *Activity Diagram (User Feedback)*

➢ Adding a New Car

Staff | E-Car Rental System

Login

[No]

Login → Valid?

[Yes]

Enter car details

Add to inventory

Update status

End

Figure 4: Activity Diagram (Add New Car)

ER Diagram:

cars
- car_id INT
- car_name VARCHAR(50)
- car_nameplate VARCHAR(50)
- car_img VARCHAR(50)
- ac_price FLOAT
- non_ac_price FLOAT
- ac_price_per_day FLOAT
- non_ac_price_per_day FLOAT
- car_availability VARCHAR(10)
- Indexes

customers
- customer_username VARCHAR(50)
- customer_name VARCHAR(50)
- customer_phone VARCHAR(15)
- customer_email VARCHAR(25)
- customer_address VARCHAR(50)
- customer_password VARCHAR(20)
- Indexes

clients
- client_username VARCHAR(50)
- client_name VARCHAR(50)
- client_phone VARCHAR(15)
- client_email VARCHAR(25)
- client_address VARCHAR(50)
- client_password VARCHAR(20)
- Indexes

feedback
- name VARCHAR(20)
- e_mail VARCHAR(30)
- message VARCHAR(150)

rentedcars
- id INT
- customer_username VARCHAR(50)
- car_id INT
- driver_id INT
- booking_date DATE
- rent_start_date DATE
- rent_end_date DATE
- car_return_date DATE
- fare DOUBLE
- charge_type VARCHAR(25)
- distance DOUBLE
- no_of_days INT
- total_amount DOUBLE
- return_status VARCHAR(10)
- Indexes

driver
- driver_id INT
- driver_name VARCHAR(50)
- dl_number VARCHAR(50)
- driver_phone VARCHAR(15)
- driver_address VARCHAR(50)
- driver_gender VARCHAR(10)
- client_username VARCHAR(50)
- driver_availability VARCHAR(10)
- Indexes

clientcars
- car_id INT
- client_username VARCHAR(50)
- Indexes

Figure 5: ER Diagram

Technologies

➢ **About PHP**

PHP: Hypertext Pre-processor is a widely used, general-purpose scripting language that was originally designed for web development to produce dynamic web pages. For this purpose, PHP code is embedded into the HTML source document and interpreted by a web server with a PHP processor module, which generates the web page document.

➢ **PHP Syntax**

HTML and PHP code is written on the same page, and to distinguish PHP code from HTML, the PHP code is enclosed within **<? php ?>** Tags.

For example:

```
<html>
      <head><title>php basics</title></head>
      <body>
            <h2>HELLO</h1>
      <?php
      echo "hello";
      ?>
      </body>
</html>
```

In the above example PHP code is embedded within HTML. In this way PHP and HTML coding is combined on the same page.

Since PHP is a server side scripting language, the PHP coding cannot be seen by the end user through view source option, due to this feature PHP is very secure.

PHP is a parsed language; therefore PHP environment is necessary at the server for running PHP scripts

➢ **Connecting PHP Application to MySQL Database**

Make a connection variable to the database:

$con = mysql_connect ("localhost","servername","password");

Select a database over that connection variable:

$db = mysql_select_db("databasename",$con);

Prepare a sql query to execute:

$qry= Select * from abc;

Run the sql query:

$result=mysql_query($qry);

Iterate over the result:

```
while($row = mysql_fetch_array($result))
{
//some logic
}
```

Snapshot Frontend

Home Page:
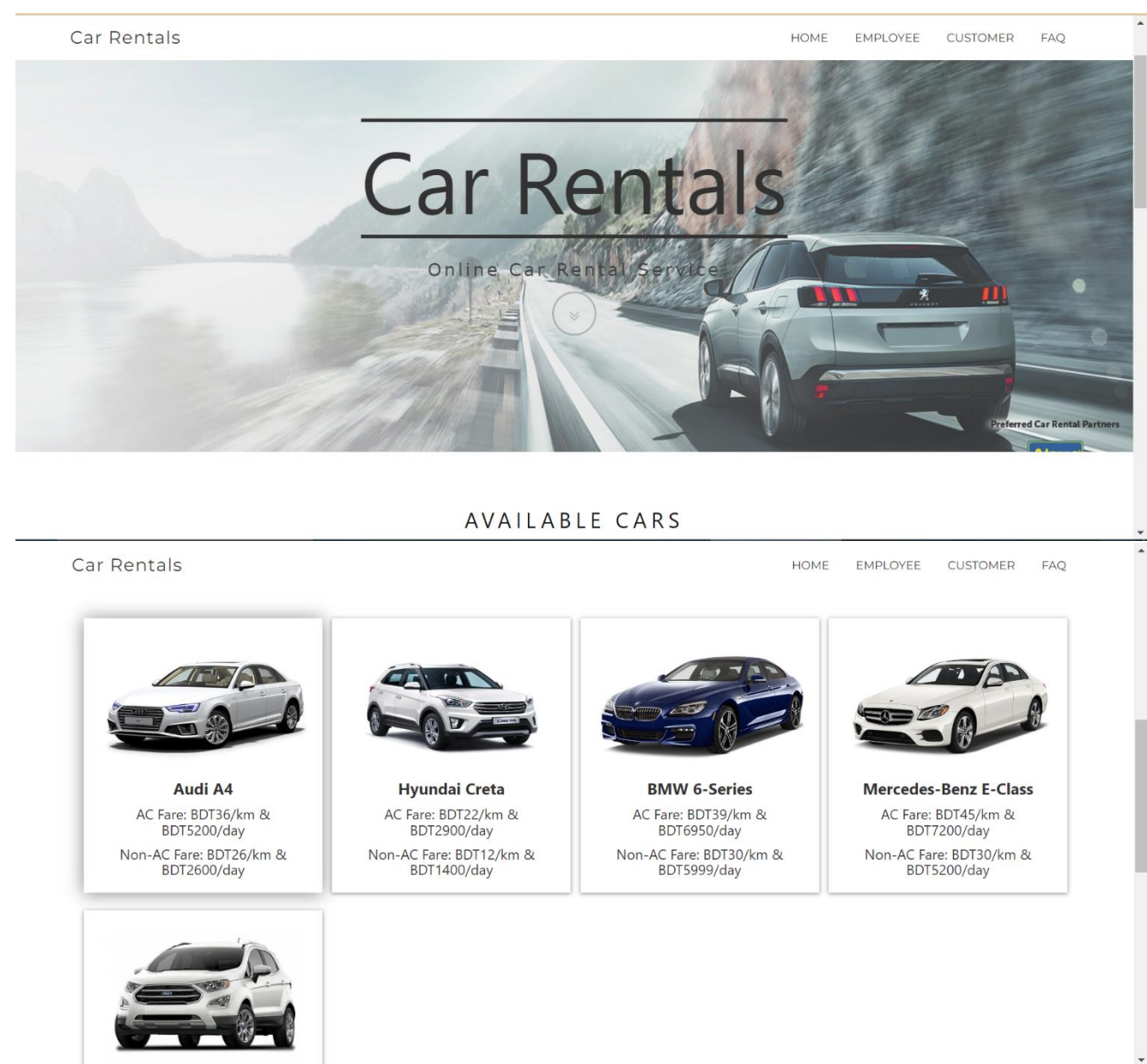
Figure 6: Home Page

Login/Registration Page

Figure 7: Registration Form

Figure 8: Login Form

Booking Page:

Figure 9: *Booking Form*

Figure 10: *Booking - Confirmation Message*

Figure 11: *Your Booking List*

Garage/Return Page:

Return your cars here

Hope you enjoyed our service

Car	Rent Start Date	Rent End Date	Fare	Action
Hyundai Creta	2023-12-12	2023-12-13	Rs. 22/km	Return

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Journey Details

Allow your driver to fill the below form

Car: Hyundai Creta
Vehicle Number: BA2CH2020
Rent date: 2023-12-13
End Date: 2023-12-14
Fare: Rs. 22/km
Driver Name: Mamlot Ali
Driver Contact: 01795100243

500

SUBMIT

Figure 12: Journey Details

bKash Payment

TestCheckoutDemoMerchant1
Invoice: 124VTrQzpdG
৳11000

Your bKash Account number

e.g 01XXXXXXXX

By clicking on **Confirm**, you are agreeing to the **terms & conditions**

CLOSE | CONFIRM

16247

Figure 13: Payment

Admin Page:

Add Driver:

Figure 14: *Add Driver*

Figure 15: *Driver List*

Add Car:

Figure 16: *Add Car Form*

Figure 17: *Car List(Admin)*

Conclusion

Car rental business has emerged with a new goodies compared to the past experience where every activity concerning car rental business is limited to a physical location only. Even though the physical location has not been totally eradicated; the nature of functions and how these functions are achieved has been reshaped by the power of internet. Nowadays, customers can reserve cars online, rent car online, and have the car brought to their door step once the customer is a registered member or go to the office to pick the car.

The web based car rental system has offered an advantage to both customers as well as Car Rental Company to efficiently and effectively manage the business and satisfies customers' need at the click of a button

References Used

http://www.carrentingsolutions.com/
http://www.imscart.com/car_rental_software.html
http://www.Wikipedia.org