A First Project Proposal Report on

Online Car Rental System

Submitted in Partial Fulfillment of Requirement for
the Degree of **Bachelor of Engineering in Information Technology**
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Abstract

In recent times cars have become the most convenient mode of freight. In making this an easier, hassle-free, and enjoyable experience to acquire and use a car as per one's needs, a car rental framework has been proposed by a scholar of ‘BEIT FORTH 'as a minor project.

The Car Rental framework is being developed for patrons so that they can book their cars from any part of Nepal. This system takes information from the client through filling in their details and having a user interface that will allow their customers to view the template, descriptions, and prices of different cars available. The patron will be allowed to register and log in to the web site and see their rental plan. The proposed framework is completely integrated with online systems. It automates manual procedures in an effective and efficient way.

To develop a platform well-judged in parameters like cost and time and which can serve for good freight experience, valid technology needs to be programmed together. Acknowledging all these VS Code with languages like HTML, CSS, JS, PHP, MySQL has been opted for the development of framework.

Keyword: framework, patrons, template, log in, automate, HTML, CSS, VS Code, PHP, MySQL.

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Introduction

An O***nline Car Rental*** System is an online platform liable to serve viewers/ customers with car viewing, registration and booking facilities. A couple of individuals cannot remain to have a vehicle, for those people this system ends up being outstandingly helpful. This framework incorporates different vehicles, according to the client request and solace it put in the request and got according to the pickup-sloping edge area inside the zone. Booking should be possible by means of network access as it were.

The project is designed to help people utilize transport effectively. In recent times cars have become the most convenient mode of transportation. Our Car rental system helps in making this an easier, hassle-free, and enjoyable experience to acquire and use a car as per ones needs. A person can book a car specifically for his travel time, co-travelers, and the nature of travel. The rental system traverses from designing a database to understanding business concepts and to making this an easy to adapt system for various traveling needs.

Here, User has to Login To book a car. The user can search for cars easily and book. For bookings, the user must provide information such as Booking Dates and Text Message. All car details are provided and it also includes Car's feature and Overview.

Problem Statement

A car rental mechanism is a vehicle that can be used temporarily for a cost 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 do not own a vehicle at all. Car rental helps them easily access vehicles in a hassle free manner. The individual who needs a car must contact a rental car company and contact out for a vehicle. This system increases customer retention and simplifies vehicle and staff management. Along with these , the car rental system also helps for systematic tracking of vehicles for future instances.

Aims & Objectives

- To produce a web-based system that allows customers to register and reserve cars online and for the company to effectively manage their car rental business.

- To ease customer’s tasks whenever they need to rent a car.

- To make systematic records of transportational entities like the vehicle used ,people involved in it in case of future reference .

- To promote systematic roadway communication.

Significance of Study

The advancement in Information Technology and internet penetration has enhanced various business processes and communication between companies (services providers) and their customers of which the car rental industry is not left out. This E-Car Rental System was 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 increasing their return on investment (ROI).

- Online Vehicle Reservation: A tool through which customers can reserve available cars online prior to their expected pick-up date or time.

- Customer registration: A registration portal to hold customer's details, monitor their transaction and use the same to offer better and improve services to them.

Scope and Limitations

This project traverses a lot of areas ranging from business concept to computing field, and required to perform several researches to be able to achieve the project objectives. The area covers include

- This includes a study on how the car rental business is being done, the process involved and the opportunity that exists for improvement.

- PHP Technology is used for the development of the application.

- General customers as well as the admin will be able to use the system effectively.

- Web-platform means that the system will be available for access 24/7 except when there is a temporary server issue which is expected to be minimal.

Literature Review

Transportation/Teleportation is a process of movement of an entity from one location to another. Transportation has been a primal attribute of human beings . In today's time proper transportation facilities are a must in our life in order to function properly.In this era of the internet , instead of a manual approach of finding the right medium of transportation where one needs to get down to the streets and stand there looking out for vehicles suitable for their purpose ,we would prefer an online approach. In order to help this approach to flourish more , our car rental system helps choose appropriate transport in a simplified manner . With clean and simple architecture, Our **online car rental system** helps users to make easy transportation possible .

Methodology

Incremental Model is a process of software development where requirements are divided into multiple standalone modules of the software development cycle. In this model, each module goes through the requirements, design, implementation, and testing phases. Every subsequent release of the module adds function to the previous release. The process continues until the complete system is achieved.

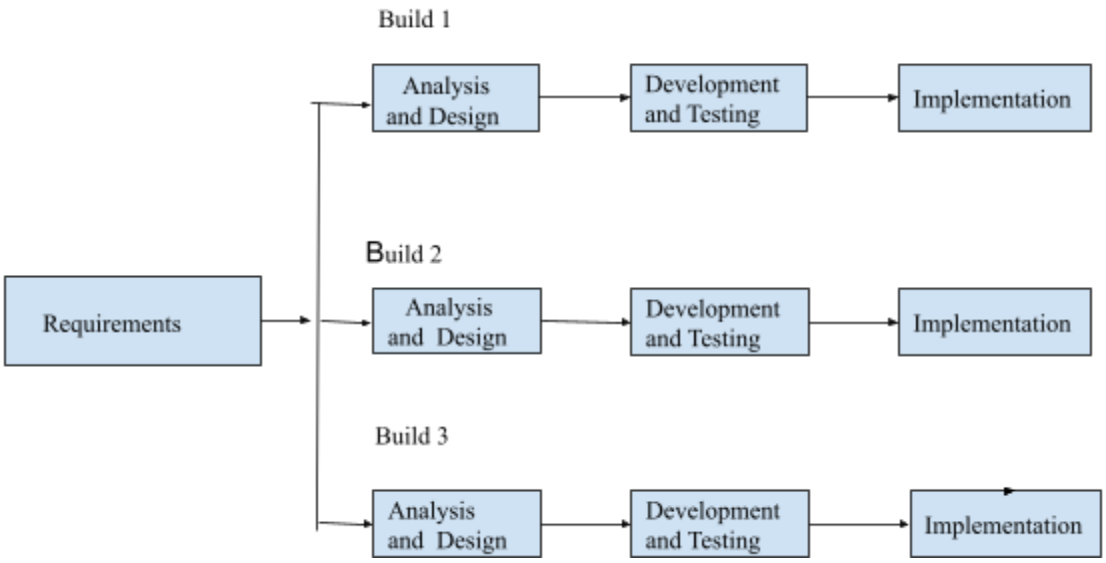

Figure 1: Incremental Model

Requirement Analysis & Design: All requirements of the system to be developed were noted in this phase. Requirements are the set of functionalities and constraints that the end-user expects from the system. The requirements were gathered and those requirements were analyzed for their validity and the possibility of incorporating the requirements in the system to be developed were also studied. Next, the requirement specifications from before were studied and system design was prepared.

Development and Testing : Development was done with the help of different tools and technology like VS Code, html, CSS, JavaScript and so on. Frontend implementation were done with the help of html (which is skeleton of website), CSS (styling the site), JavaScript (which is powerful language that provides the functional behavior to the website) and bootstrap (which is CSS framework that helps to build the frontend rapidly). For the backend development, we used PHP as a backend language and MySQL as a relational database for operations such as create, read, update, and delete.

All these were developed with the help of IDE (Integrated Development Environment) which is VS Code that is lightweight and programmer friendly.

After that each units were tested for its functionality which is known as Unit Testing

Implementation : When the development and testing were completed , implementation of the system was done for its actual purpose.

Data Flow Diagram (DFD)

A Data Flow Diagram (DFD) is a graphical representation that depicts the information flow and the transforms that are applied as data moves from input to output.

i. Zero Level DFD

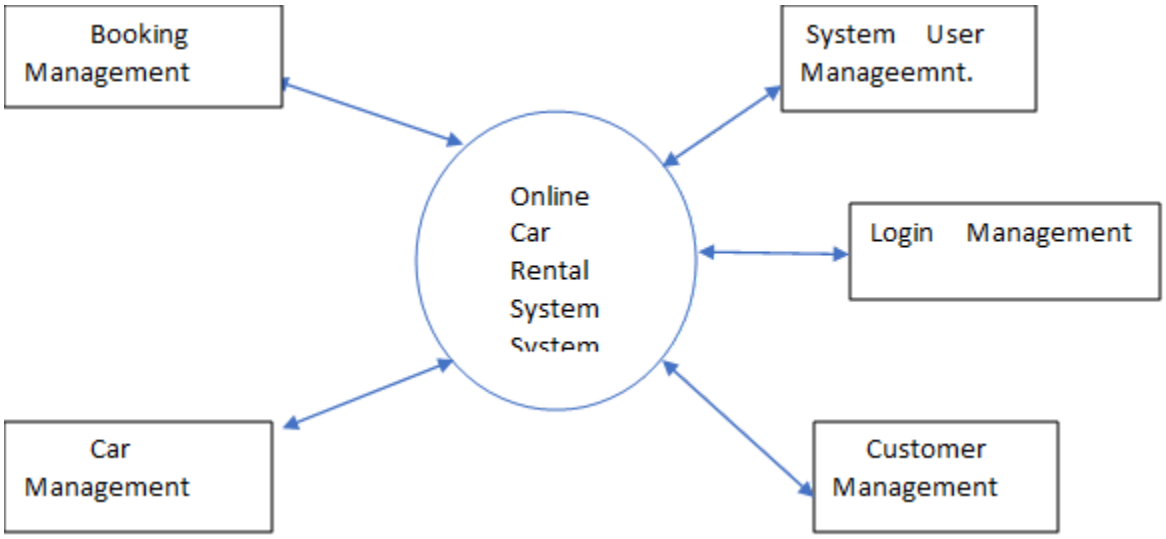

Figure 2: Zero Level Data Flow Diagram

ii. First Level DFD

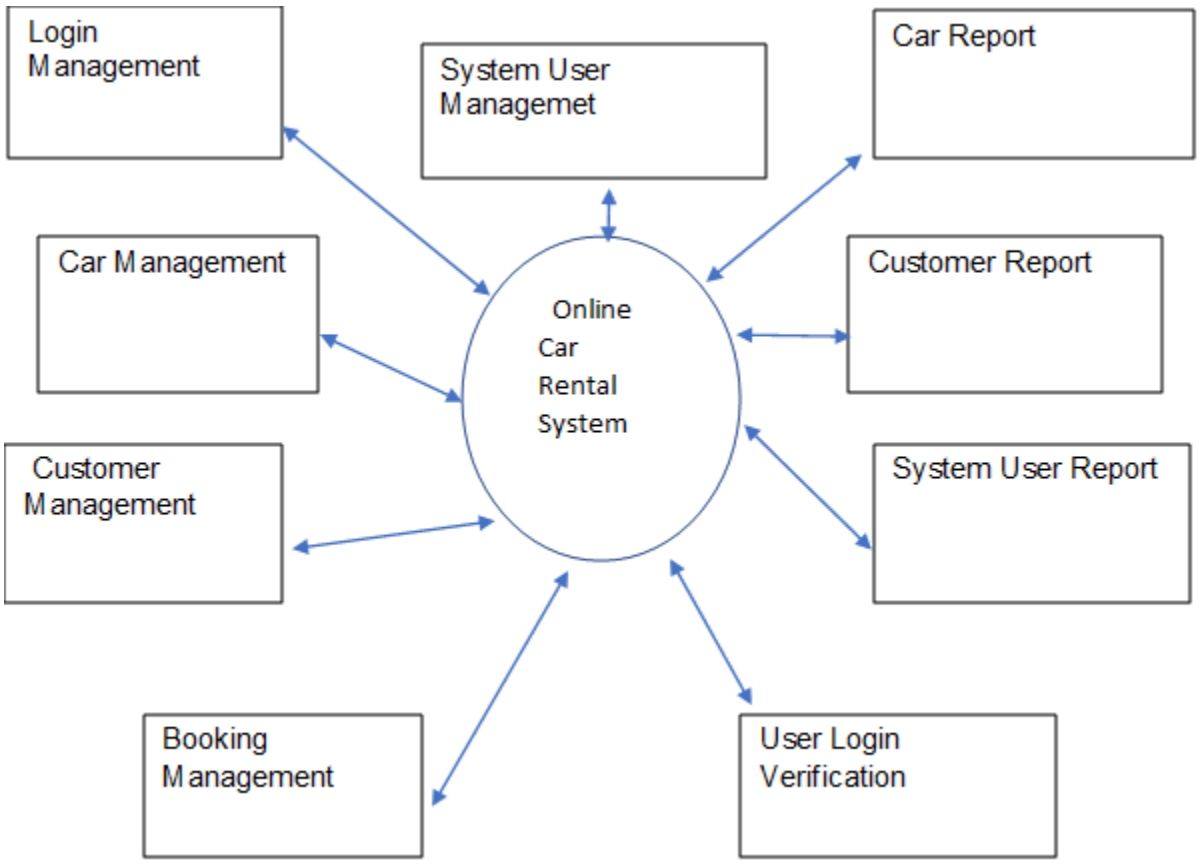

Figure 3: Level One DFD

Use case Description

Actor and use case description shows the detailed description of interaction between the actors and their use cases. The description enables one to have a proper understanding of how actors interact with the system through their use cases.

Actor	Use Case	Use Case Description
	Register as a user	This use case describes the activities of the customer to register online and become a member. User's details are required as part of the registration.
User	Make Reservation	This use case enables customers to search and make reservations.
	Return car	This use case describes the event of users returning the car borrowed.

Admin	Add new car	This use case is used by the admin to add a new car to the company's database. Admin will need to login to activate this use case.
	Update car info	This use case is used by the admin to edit and modify car details whenever there is new reservation. It allows the company to keep up-to-date records of their fleet.
	Process rental	This use case describes the event by which the admin updates the system when user pick up or when returning car.

Table 1: Actor and Use Case Description

i. Use –Case Login

Use-case Number	UC-01
Use-case Name	Login
Actor	User
Description	This use case describes how user login into this online car rental system
Precondition	None
Post Condition	If the use case was successful, the actor is now logged into the application.

Basic Course of Action	**User Action**	**System Response**
	1. The user is on the home page to login to the system 3. The user enters his/her login details and press the login button.	**2.** The system encourages users to enter login details. 4.The system verifies the validity of details provided. 5.If valid, the system is successfully logged in. 6. Use cases exist.

Table 2: Use Case-Login

ii. Use-Case Booking Car

Use-case Number	Uc-02
Use-case Name	Booking car
Customer Description	This use case permits customers to Booking car

Precondition	Customer wants to book a car and reservation details have to be entered prior.	
Post-condition	Customer booking is successful.	
Basic Course of Action	User Action.	System Response
	1.The customer wants to Book a car. 2. The customer clicks the booking option. 4.The customers fill the booking form with details like full name, password, pickup date and return date. 5. The customers then click the booking button.	3. The system prompts users to fill the booking form. 6. The system then validates all the details being filled. 7. The system then shows customers that the reservation has been completed. 8. Use case ends.

Table 3: Use case Booking Car

Use case Diagram

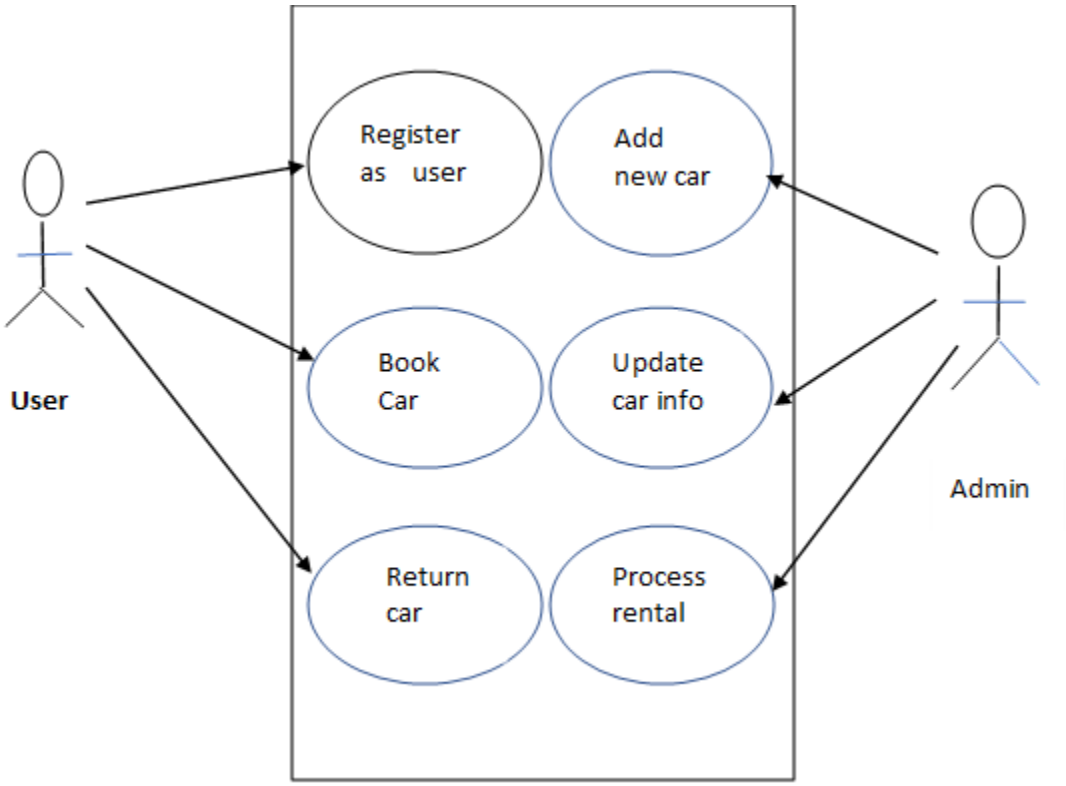

Figure 4: Online Car Rental System [Use Case]

Deliverable/Output

1. A fully functional web app shall be developed to fulfill the requirements.

2. The web app shall be able to promote innovative ideas by bridging the gap between product owners and potential investors.

3. Enlisting the products into the portal helps to promote their product with the huge audience base.

4. Online car rental systems help in back-office administration by streamlining and standardizing the procedure and reducing time, money, and labor.

5. The monitoring of vehicle activity and the overall business becomes easy and includes the least paperwork.

6. The software acts as an office that is open 24/7.

Project Task and Time Schedule

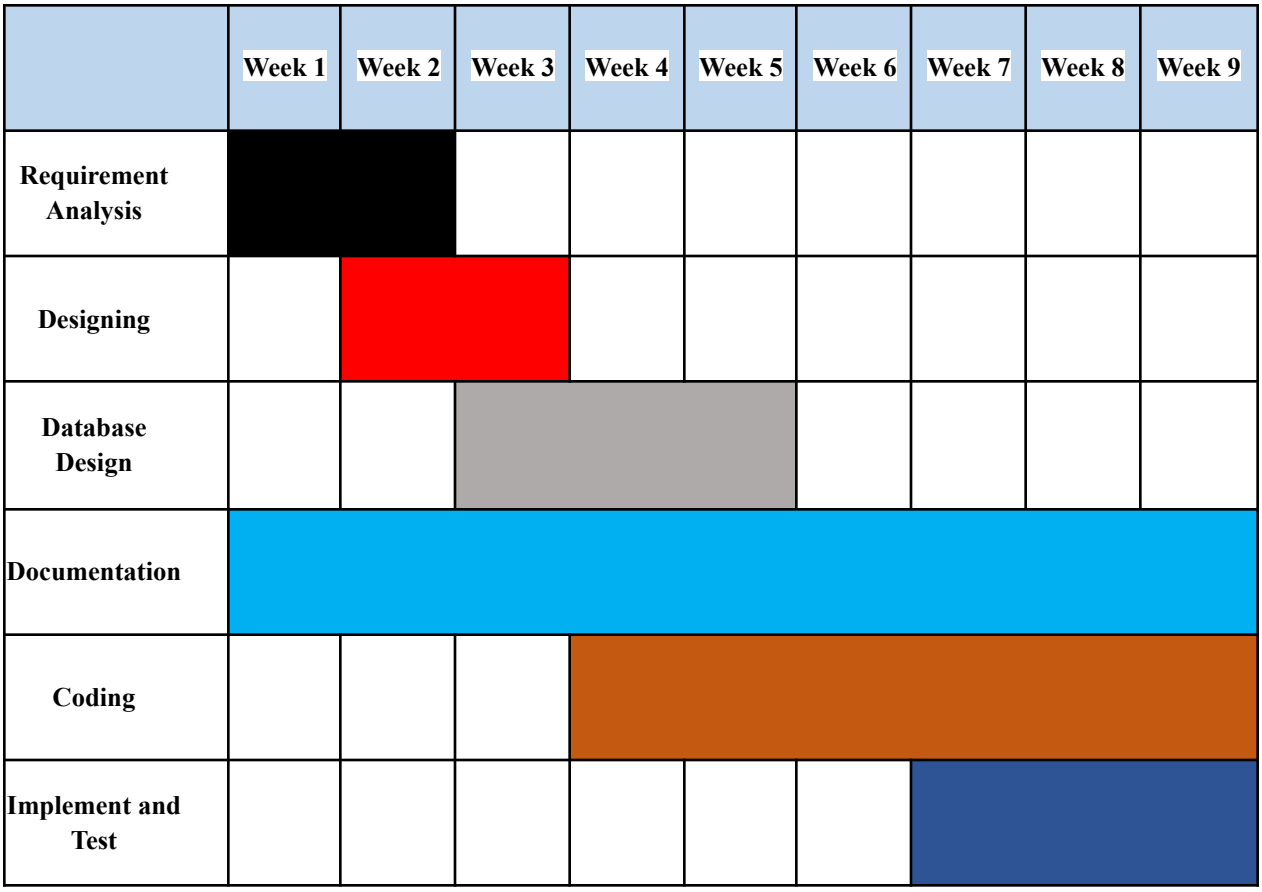

Figure 5 : Gantt Chart

Conclusion and Scope for Further Use

i. Conclusion

Car rental business (system)has emerged with several new entities compared to the 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 the internet. Nowadays, customers can Booking cars online, rent cars online, and have the car brought to their doorstep 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 manage the business and satisfies customers' need at the click of a button efficiently and effectively.

ii. Future Enhancement

Soon in the coming future, we as a team are planning to bring some additional changes in the system. Addition of a feature like pay after trip and tracking of vehicles for the customer are some of the advancement we wish to come up with in our future modules. We intend to bring some automation in the system for enhancement of good user experience.

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- **https://www.youtube.com/ (guidance purpose)**
- **https://github.com/ (communication/collaboration among team members)**
- **https://stackoverflow.com/ (reference of Html, Css , Javascript, Php, Sql)**
- **https://www.w3schools.com/ (reference of code snippets)**