

# **CAR RENTAL SYSTEM AND ROUTE SUGGESTION USING DIJKSTRA'S ALGORITHM**

**Minor Project - I**

In  
Third year – Fifth Semester of

**Bachelor of Technology**

specialization  
In

**Artificial Intelligence and Machine Learning**

Under the guidance of

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# Synopsis

## **1. Introduction :**

Why to buy a car when you can rent one ? With this approach we have created our project on car rental system.

During this hard times of covid when you can not risk your life by going in a public transport such as bus, taxi or auto rickshaws you rely only on personal transport but the people who don't have a personal vehicle really suffer a lot so for them this system will be very useful.

Car Rental System is based on the concept to rent cars, to select a car from the given list of cars along with the money you have to pay to rent a car from the company. System will you with the shortest path to your destination. This mini project contains features, but the essential one. We will be using simple libraries, functions, algorithms and structures to execute the problem.

This car rental system will change the people thinking about renting a car , as earlier you have to go to the rental company then they will give you a long form to fill after this long procedure they will give you a car which is sometimes not even of your choice . So to replace this long procedure of going and renting a car we will be making a software that will help you rent a car of your choice and know the easiest way to you destination just by few clicks on your computer . Once you have confirmed your booking the system will give you the pickup location of the car.

The starting point of Car renting is really unknown as said by Thomas Pretty; he also mentioned that many beliefs that Joe Saunders was the first man to start a Car renting company. According to Thomas Pretty, charges were calculated with the help of mileage tracking device. Many people became interested in the Car rental business and hence got involved. Car renting became more popular as years pass by. Today Car renting services is found all over the world, especially in the developed and developing countries.

We have put a lot of work in this project to make common man's life simple and easy with our car rental system. This project helps in promoting tourism as most of the tourists prefer rental vehicles to explore the place rather than making use of public transport.

## **2. Motivation :**

During this covid-19 pandemic it was need of the hour to follow social distancing and avoid as much contact as possible. This has motivated us to make a Simple car rental system along with route suggestion that will help the common masses to go places. This project will act as an application and would help small rental companies and shops to grow their business. This project provides:

- Better Efficiency than tradition car rental methodology
- Computer based invoice
- Contact-free system(beneficial for corona period)
- Transparent car renting approach
- Better route for travelling in short time

With this approach of helping common people we have been motivated to build this project and obviously our skills in c++ has made our work easy to fulfill our dreams by helping others.

## **3. Related work :**

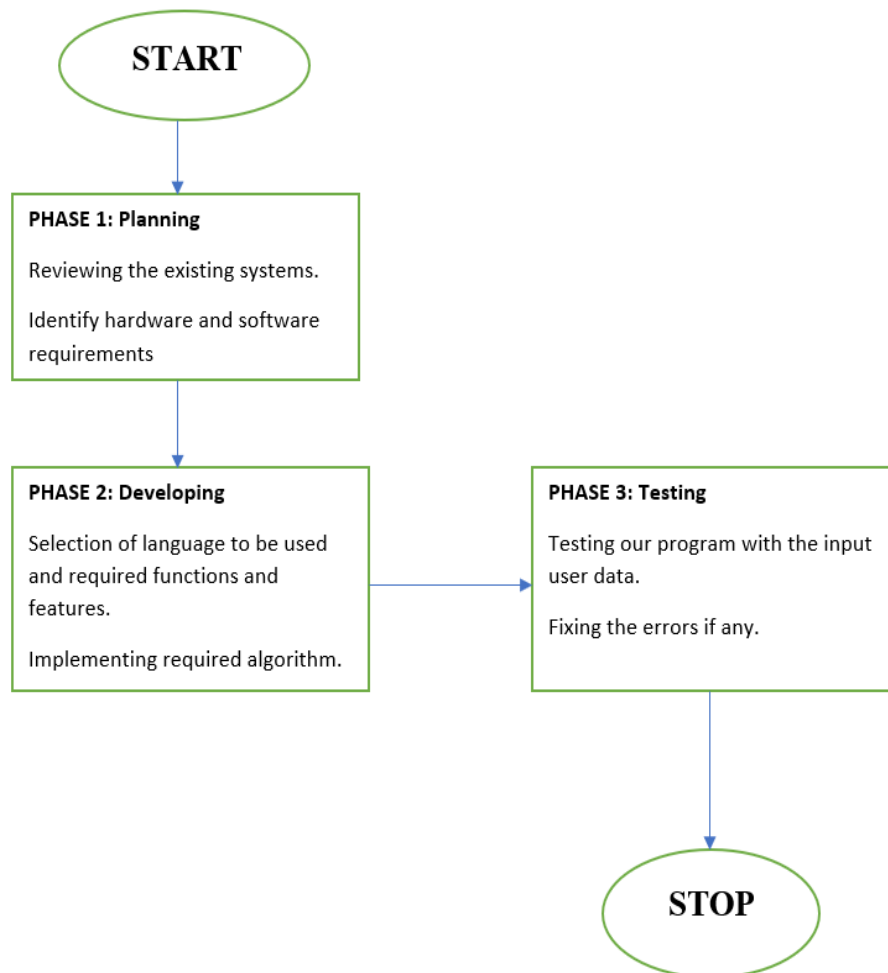
Management systems are booming in the current time, this include the use of car rental system as well. The related work that has been made in this domain consists of projects using languages such as C,C++,PHP ,java ,python.

The work published and research made related to car rental system includes algorithm where we select cars from the options provided by the system and corresponding amount is developed along with the best shortest path to users destination.

The related work done in this domain is similar to our problem statement where we want to find a system which follows a transparent car renting system due to the problem of covid era and because the traditional car renting process was inconvenient and it's efficiency was not up to the mark.

Our system will follow an algorithm where the user will be able to choose from a vast set of car options, mentioning everything about the car and with different set of variables which would define the amount and user will also choose a quantitatively duration of time accordingly an invoice would be created which will mention everything about the user and the car by the system which would be stored as well.

#### 4. Proposed Method :



#### 5. Methodology :

In this section we describe a way to make the transportation system easy and efficient in all aspects (efficiency in terms of fair price, time).

Here, we are developing a Car Rental System in C++ programming language by the use of different libraries, functions, loops, Dijkstra algo. For this we are making use of Dev-C++ IDE with gcc compiler. The system would provide us with a main screen where we have to fill our login details to get access. The user has to provide the system with all the necessary details to make a successful login. Now, the system would provide the customer with the list of cars according to the availability including details like model, color, maximum fare details and destination where user wants to go.

Then user will input number of days to rent the car then the system will calculate rent for certain days and shortest path to the destination. Finally the customer will get a invoice with billing amount and route suggested.

## 6. Plan of work

In this section, we shall show the month wise plan to complete our project.

Activity	Dates	Duration
Project study	17 <sup>th</sup> -31 <sup>st</sup> August	2 weeks
Project Approval	1 <sup>st</sup> -7 <sup>th</sup> September	1 week
Analysis	8 <sup>th</sup> -28 <sup>th</sup> September	3 weeks
Design and Development	29 <sup>th</sup> September – 19 <sup>th</sup> October	3 weeks
Implementation	20 <sup>th</sup> October – 9 <sup>th</sup> November	3 weeks
Testing	10 <sup>th</sup> -23 <sup>rd</sup> November	2 weeks
Report Writing	24 <sup>th</sup> -30 <sup>th</sup> November	1 week

## References

[1] <https://www.projecttopics.org/design-and-implementation-of-a-car-rental-system.html>

[2]Let Us C++ a book by Yashavant Kanetkar..

[3] Wikipedia.org.