TRANSPORT OPTIMIZATION PROGRAM(TOP)

A PROJECT REPORT

Submitted by

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SOHAIL IQRAR
ANKUL AGNIHOTRI
ASHUTOSH KUMAR

in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE

Chandigarh University

MAY 2022

TRANSPORT OPTIMIZATION PROGRAM

(A WEB DEVELOPMENT PROJECT)

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BONAFIDE CERTIFICATE

Certified that this project report **"TRANSPORT OPTIMIZATION PROGRAM"** is the bonafide work of "**Harshit Gupta, Kinshuk Chauhan, Sohail Iqrar, Ankul Agnihotri, Ashutosh Kumar"** who carried out the project work under my/our supervision.

SIGNATURE	**SIGNATURE**
Mr. Mukesh Bhardwaj **SUPERVISOR**	Mrs. Gursimran Kaur **Co Supervisor**
BE-CSE	BE-CSE

Submitted for the project viva-voce examination held on **19 May, 2022**

INTERNAL EXAMINER	**EXTERNAL EXAMINER**

CHAPTER 1: INTRODUCTION

ABSTRACT

TOP [Transport optimization program]'s main purpose is to optimize the transportation system. Optimization includes the method to use resources efficiently like transportation system so that it saves time and even makes it available on time for passengers and also to reduce pollution, and conserve energy. Sharing of the vehicle is Vehicle pooling so that multiple numbers of people can travel in a single-vehicle. the use of vehicle pooling reduces single individuals Travelling costs, reduces the fuel cost, and reduces the number of vehicles. Due to the growth in the population, there is inadequate transportation through their vehicle. Rather than using a different mode of Transportation. It results in an increasing amount of traffic on roads also increases pollution and increases the time to travel to their destination. So, by Smart transportation using a vehicle pooling system the individual can travel and share their rides with different people of the same destination. In this paper, we have carried out a survey. Reviewing various Literature papers on carpooling it aims to reduce the number of vehicles by sharing the rides. Electric taxis have the potential to improve urban air quality and save drivers' energy expenditure. Consequently, the running cost of EVs comes to Rs 1 per km, Rs 9 for petrol, Rs 6 for diesel, and about Rs 2.5 per km for vehicles being run on CNG. Although 3 battery electric vehicles (BEVs) have drawbacks such as the limited range and charging inconvenience, 4 technological

progresses has been presenting the promising potential for electric taxis Its website and mobile apps connect drivers and passengers willing to travel together between cities and share the cost of the journey[1]. The company does not own any vehicles; it is a broker and receives a commission (between 18% and 21%) from every booking. In this era of technology, everything is getting combined with technology to perform or transform for the better so we will be using technology to make an effort to solve this problem.[2] We will be building a website that will be a platform that will connect the passengers with the traveling mode.

TABLE OF CONTENT

INTRODUCTION

Due to the increasing number of peoples, every single people travel to their Destination alone in their own car. Traveling alone leads to increases individual fuel costs. The carpooling system merges multiple new people in a car which leads to meeting new people in a car, reducing air pollution and noise pollution. The carpooling system saves the economy of every people as they share their rides and also share the cost with the other member in the car. It will stop endless Spending money on travel. Rather than using public transportation such as local trains, buses, and metros. People can conveniently travel to their destination comfortably by giving the same cost. Carpooling is the best idea to reduce traffic jams as it reduces the car on road. Safety is an important aspect in every means, so traveling with different people is also a prior thing not all people are comfortable traveling with unknown people. For example, women are not feeling safe traveling with unknown people. So the carpooling system also provides rides for only women.

The economic development of cities depends on the development of primary, secondary, and tertiary sectors, and these sectors depend on the city's transportation infrastructure in order to cater to the demand for goods and services and to provide access to the required activities. Moreover, an inefficient transportation system may lead to a decrease in the expected output of the country. Cities with a lack of efficient public transport infrastructure result in users depending on alternative modes of transport. This includes an increase in the use of private vehicles, which could lead to reduced traffic safety, further deterioration of air quality, and an increase in road congestion. In addition, dial-a-cab services, which involve short-term advance booking of cabs through call or application, have been on rising in India since 2007. From the consumers' side too, there has been a tremendous increase in cab bookings through mobile

applications. These Application Based Cab Aggregators (ABCA), based on the broader concepts of sharing economy have quickly acquired a high share in the market in the past few years (Jaiswal, 2018). India witnessed entries of many private companies in tier-1 cities of the country and Mumbai was the first city where players like Meru Cabs and Ola Cabs were established in 2007 and 2010 respectively (Jaiswal, 2018). Uber, another Transportation Network Company (TNC) headquartered in San Francisco, started operating in India in 2013. These TNCs cater to real-time demand by aggregating cabs for customers.

Trade growth of goods and services and the upsurge in activities are generally high in cities of developing countries. Every city needs to enhance its transport infrastructure to cope with the increase in transportation demand. In addition, these transportation infrastructures need to be efficiently used in order to minimize costs and maximize output. Adopting sharing-based business models can help in increasing the trade of goods and services and can increase the number of activities.

CHAPTER 2: LITERATURE SURVEY:

LITERATURE REVIEW

Creativity is a nature which is loved by everyone. Copying something won`t be that attractive what a new creative project can be. So, we opted for a very different and unique project.

Security is something everyone desires for. Database locks and limitations in information access makes this project very safe and secure.

Our website deals with the advertisement of project as in today's world everything needs an advertisement so that it can be known by everybody.

Our website will be like an helping hand which will help people because this project is not going to be same as other cab services which charges 30 -35% of earning from ride and even hike price for customers so we are trying to build connection between driver and customer without charging any money also helping in pollution control and even reducing the travel cost for people.

PROBLEM DEFINITION

When we plan to go on a long trip, if we book a full car on rental it costs us too much. Also, if we book a car individually there would not be any significant difference in the cost, also normal cabs services focus mainly on small vehicles like cars not on buses

Booking cars individually increase the road traffic and accident day by day and there is a gradual increase in the accidental graph per year.

Some major environmental problems such as air pollution and degradation of life in our ecosystem are a major concern nowadays due to the excessive increase in the number of vehicles. Some tourist places have their own natural beauty and the quality of air present there is rich in oxygen. But as per the reports per year number of tourists increases there and so the number of vehicles and these vehicles polluted the pure air and reduce the beauty of these places.

Normal cab system takes a lot of time while pick up the customers and sometimes the customers have to reach these cabs just because the exact location of the user is not accurate.

OBJECTIVES

The main objective of this project is to create a platform to solve major environmental issues and to provide customers with optimized facilities. This is going to prove a good approach to resolving the issues related to costly cab booking and also save the time of the customers.

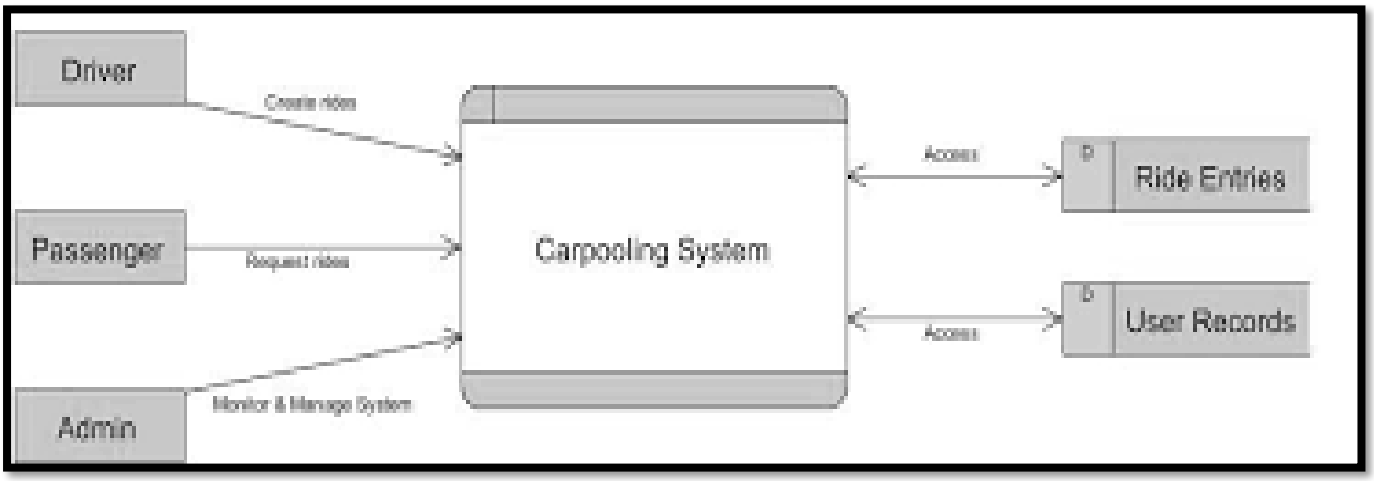
This will also have several good effects like a better use of resources and a reduction in time incompatibility.

CHAPTER 3: DESIGN FLOW/PROCESS

In present time there are many cab services which are acting great in means of providing best service and time consuming to customers but now they are charging high percentage of driver's earning and even prices are hiking for customers that's why carpooling system is introduced by help of this system anyone can become a service provider if they are eligible , this will help him in money aspect and customer will also get cheap rides and even can share with other people. This system will eventually help in reducing number of excess vehicles on road that will lead to less traffic and better use of resources which can even help in controlling environmental pollution and other issues, that's why we focused on creating a good and interacting website by help of which customers and register themselves and that data will be stored in database and if there are any driver on way or going for the same destination then data will be fetched and details of driver will be displayed to the customer so that they can communicate to each other and reach the destination as they want and when they want.

FIGURES AND CHARTS

DATA FLOW DIAGRAM:



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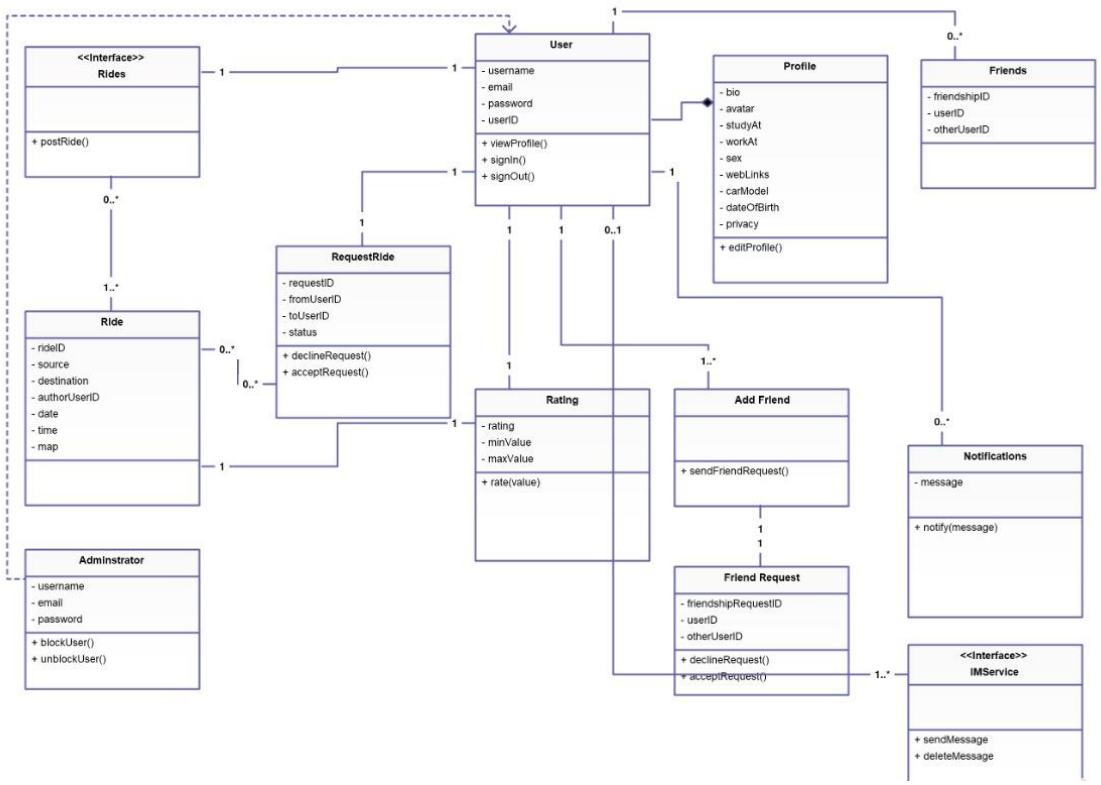

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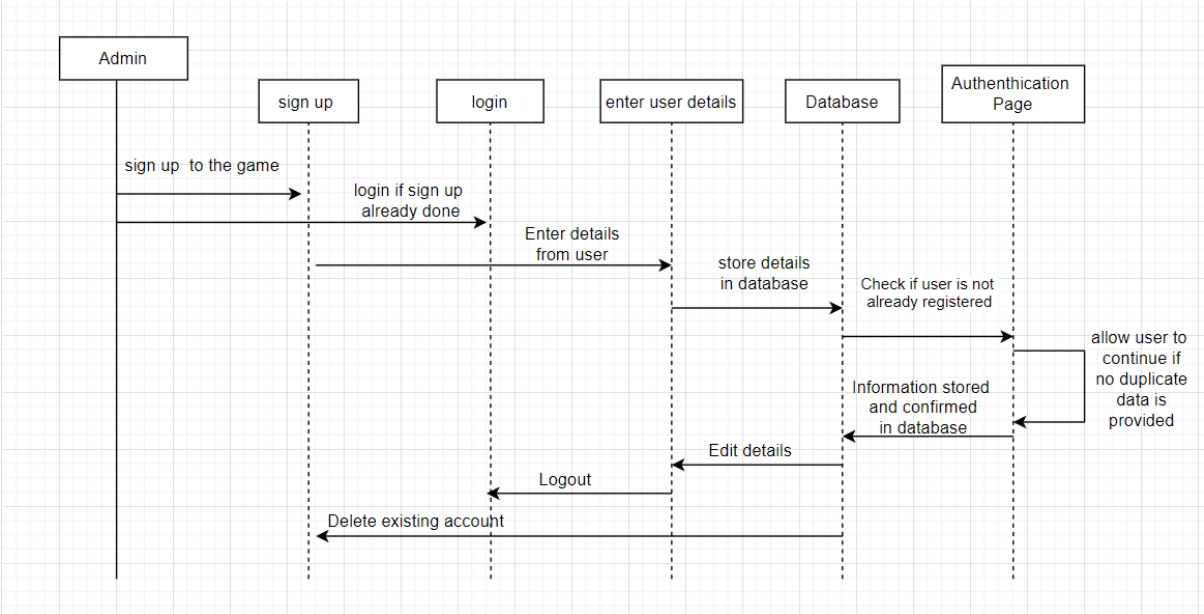

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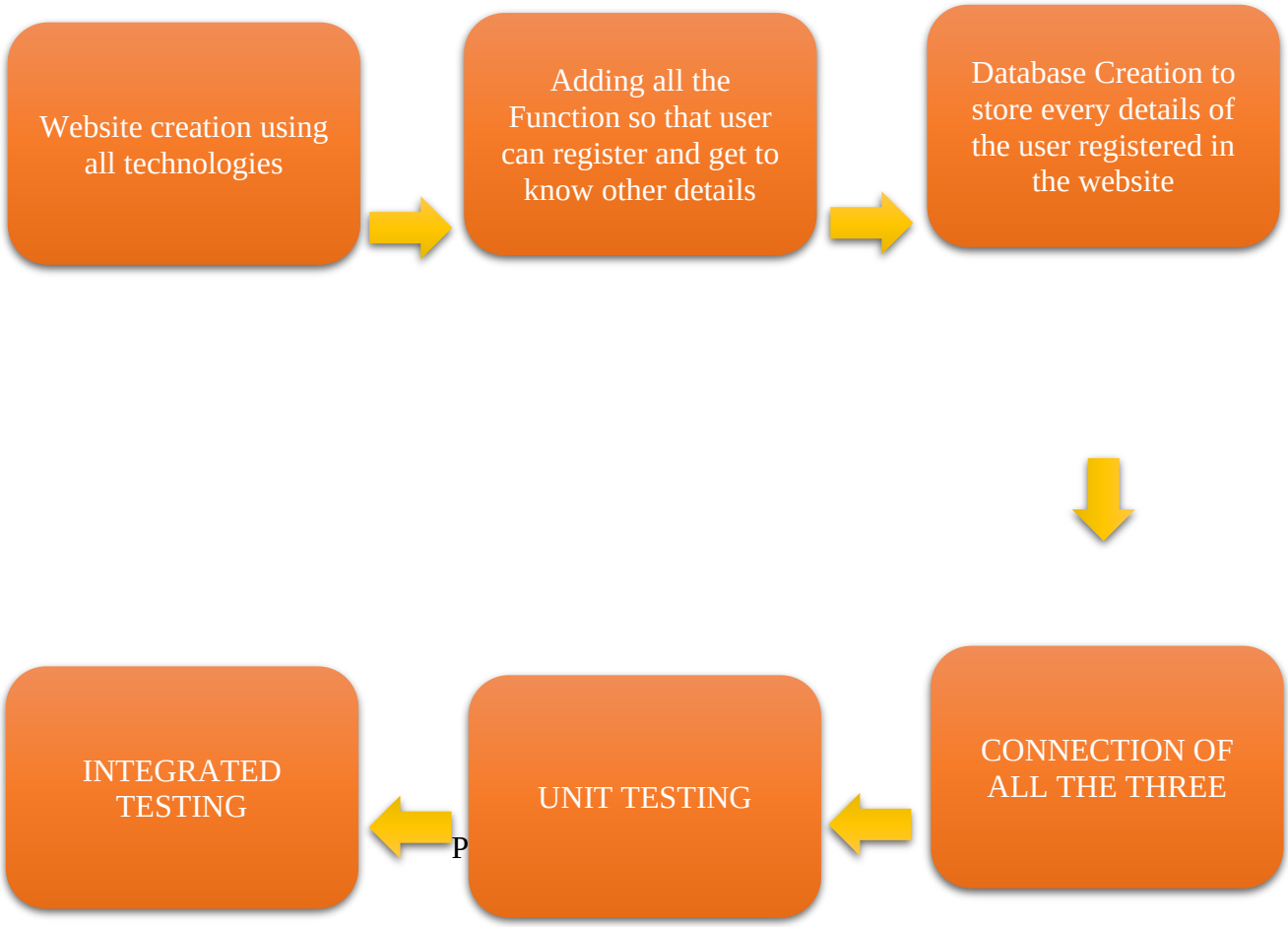

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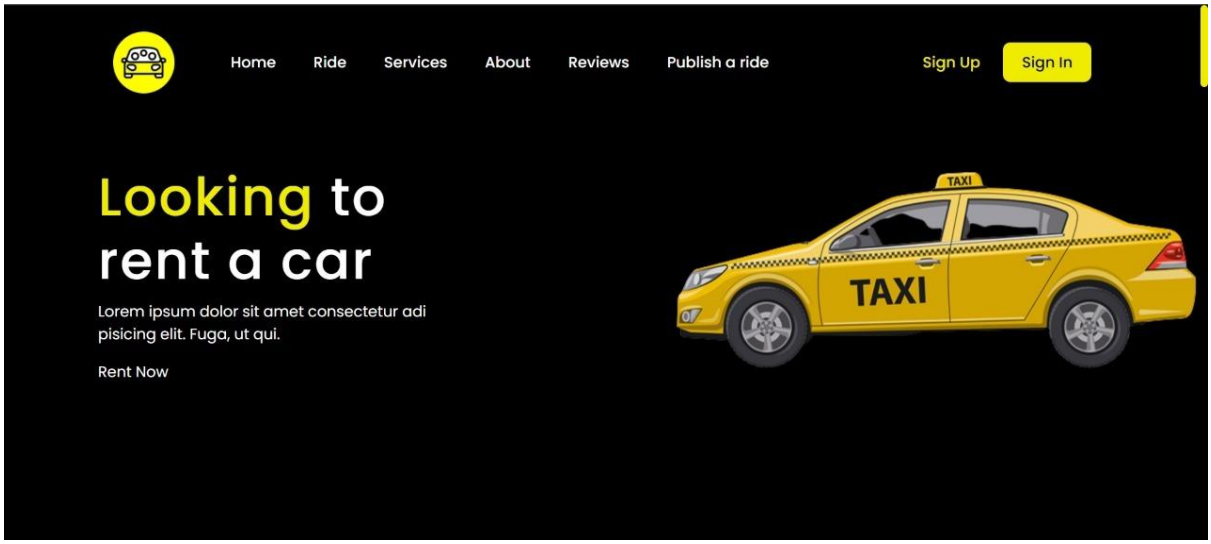
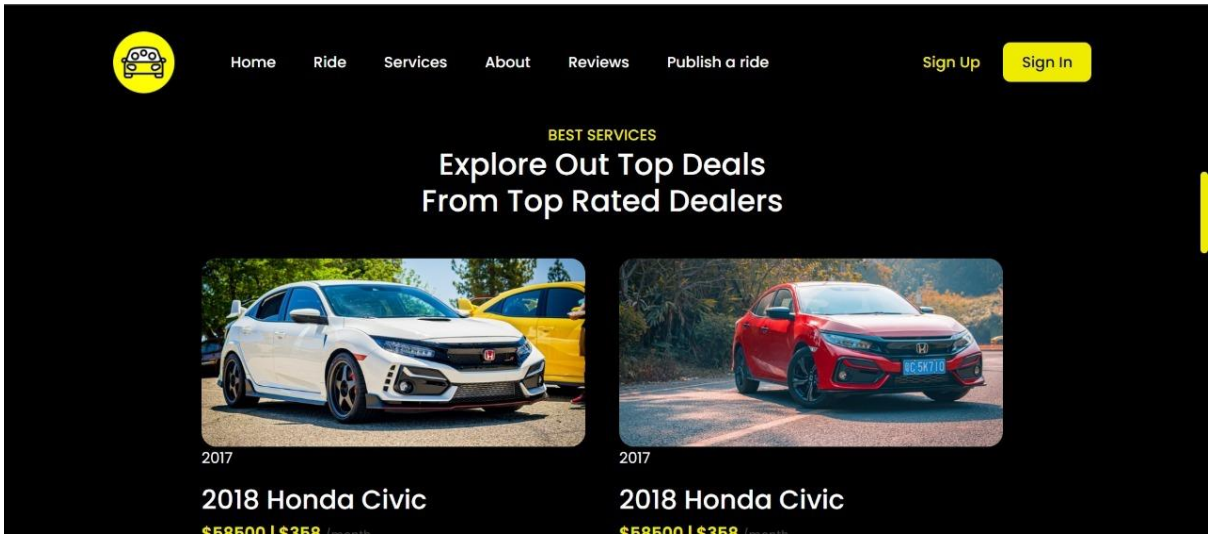
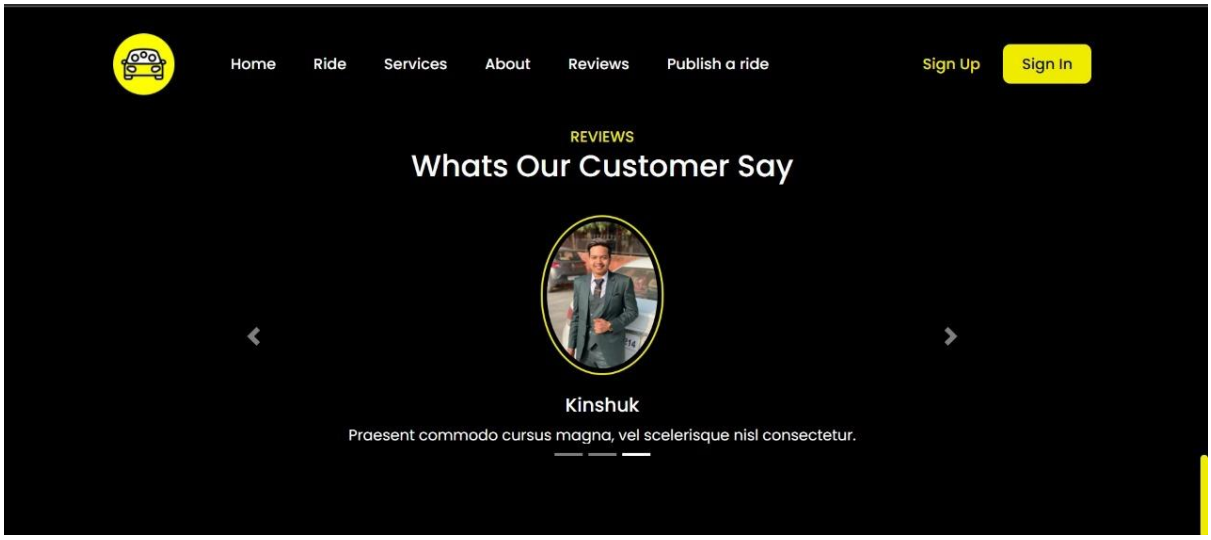
SCREENSHOTS OF WEBSITE:






Home
Ride
Services
About
Reviews
Publish a ride
Sign Up
Sign In
REVIEWS
Whats Our Customer Say
Kinshuk
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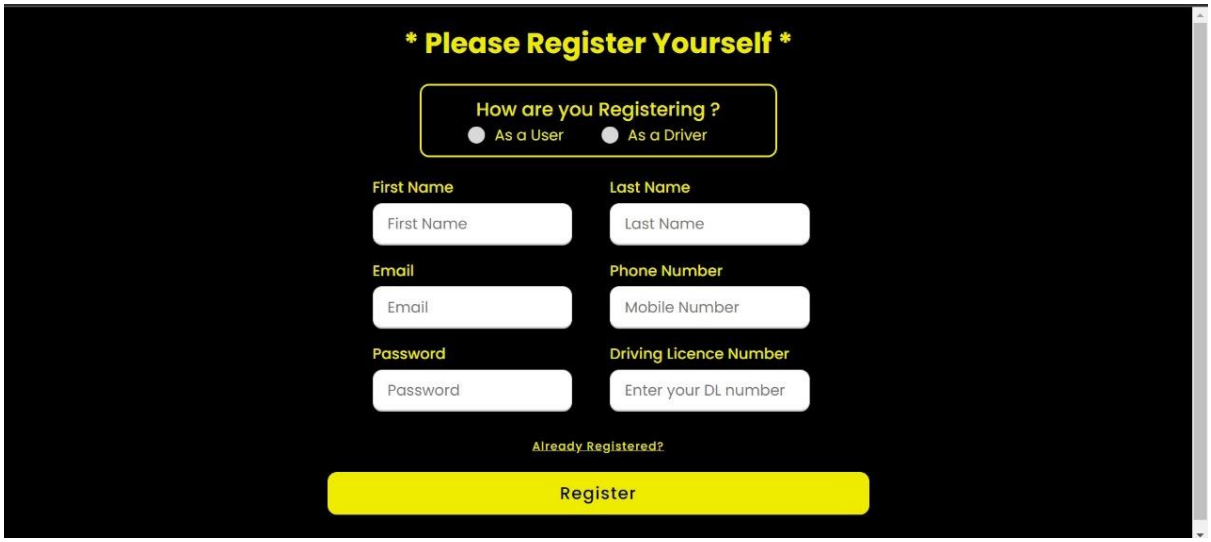
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How are you Registering ?
As a User
As a Driver
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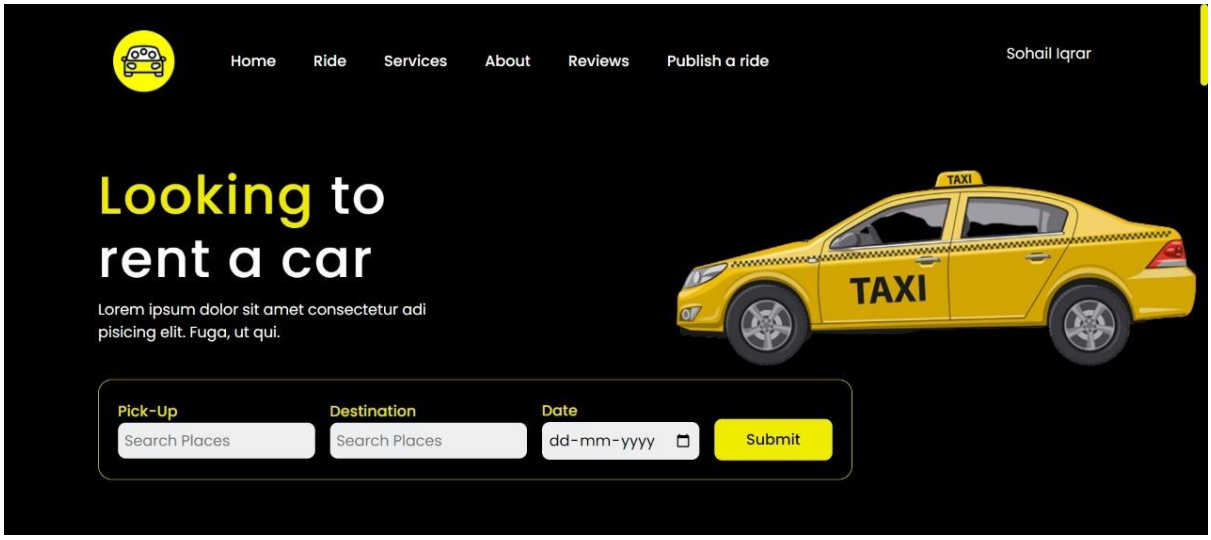
First Name
Last Name
Last Name
Email
Email
Phone Number
Mobile Number
Password
Password
Driving Licence Number
Enter your DL number
Already Registered?
Register


Home
Ride
Services
About
Reviews
Publish a ride
Sohail Iqrar
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Search Places
Destination
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Date
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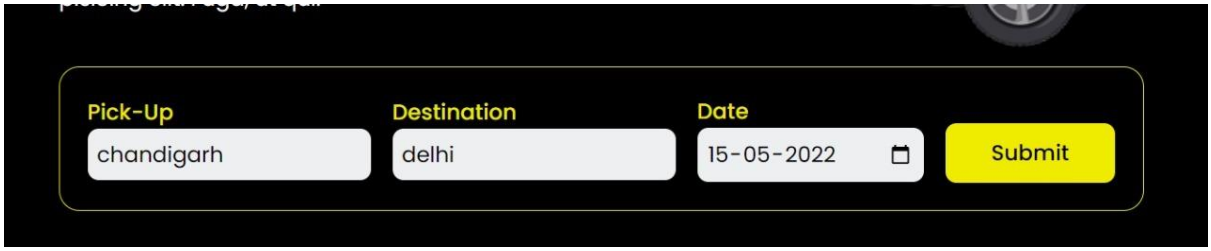
Submit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Date
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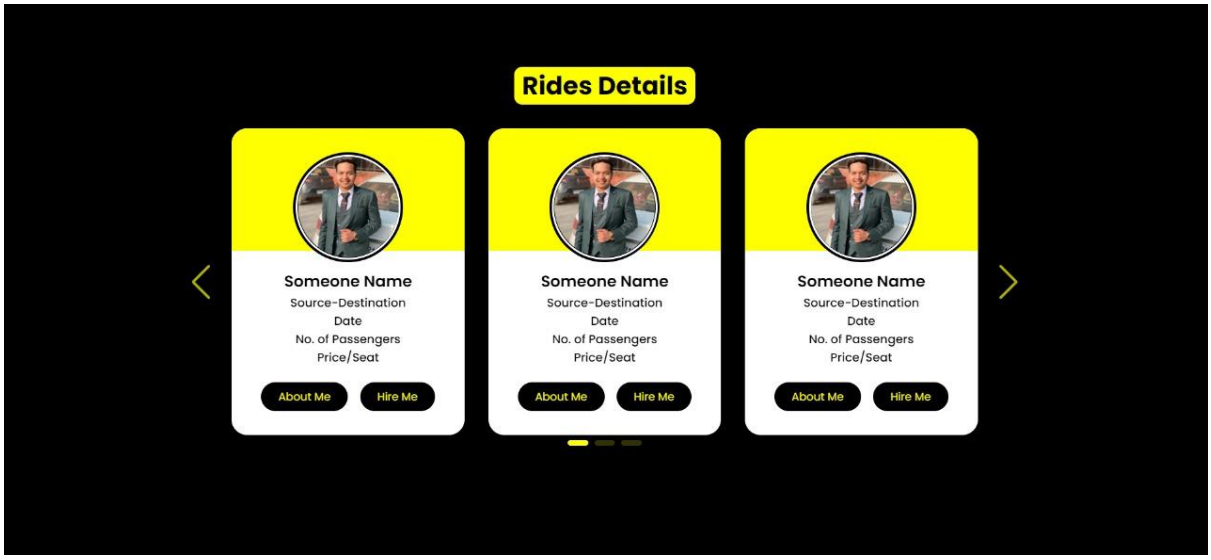
Rides Details
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Source-Destination
Date
No. of Passengers
Price/Seat
About Me
Hire Me
Someone Name
Source-Destination
Date
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About Me
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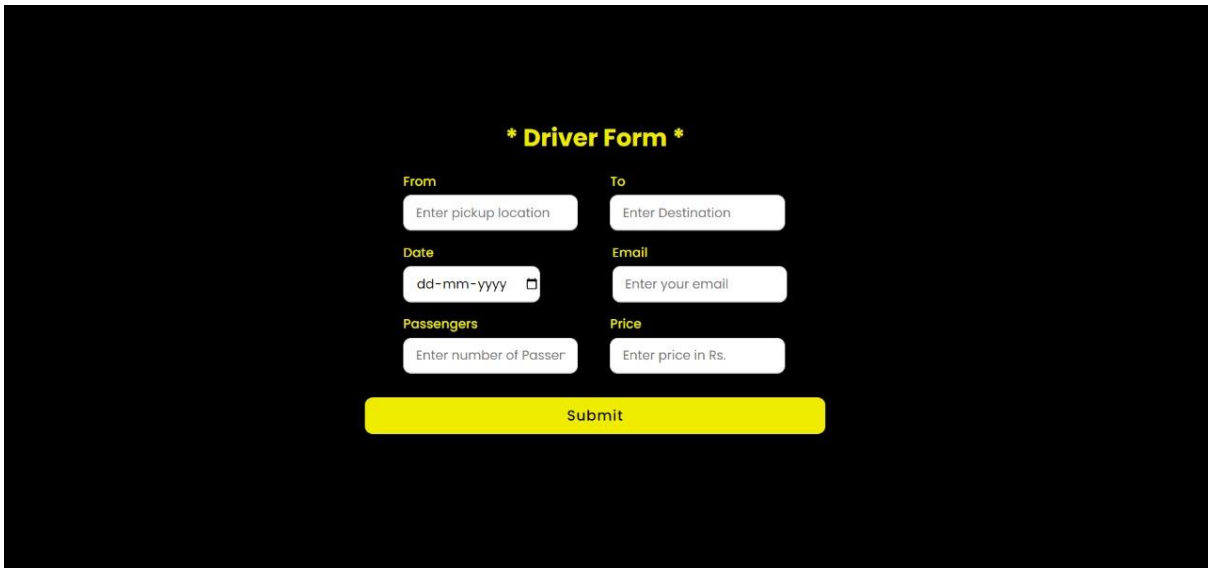
About Me
Hire Me


* Driver Form *
From
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To
Enter Destination
Date
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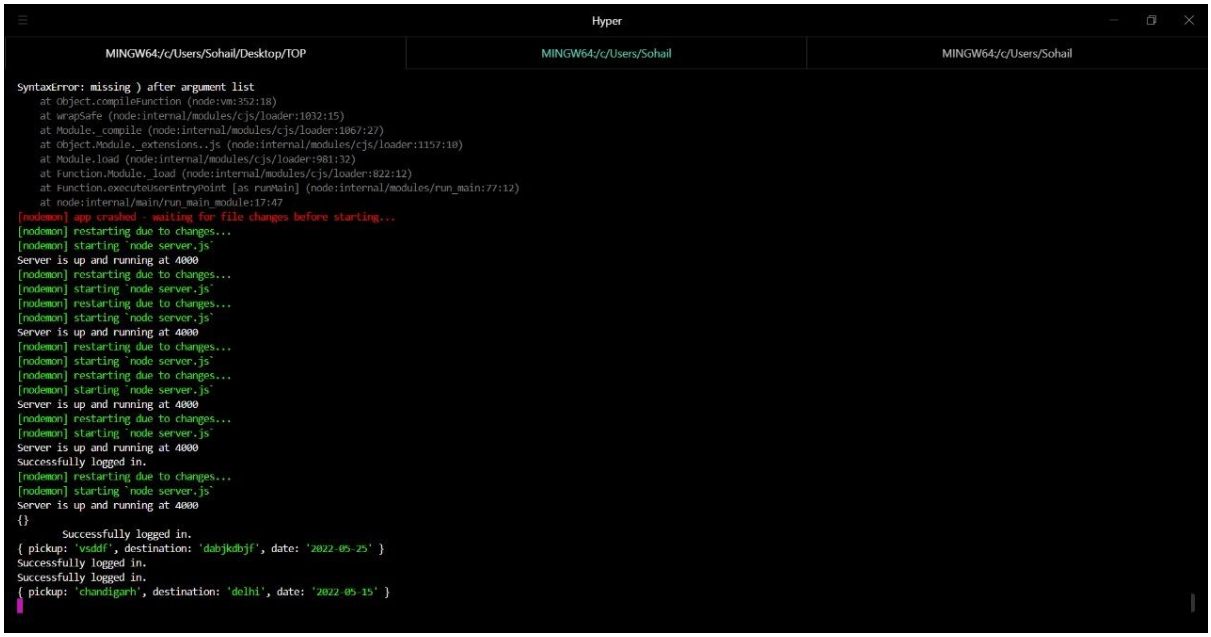
Email
Enter your email
Passengers
Enter number of Passer
Price
Enter price in Rs.
Submit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MINGW64:/c/Users/Sohail/Desktop/TOP
MINGW64:/c/Users/Sohail
MINGW64:/c/Users/Sohail
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at Object.compileFunction (node:vm:352:18)
at wrapSafe (node:internal/modules/cjs/loader:1032:15)
at Module._compile (node:internal/modules/cjs/loader:1067:27)
at Object.Module._extensions..js (node:internal/modules/cjs/loader:1157:10)
at Module.load (node:internal/modules/cjs/loader:981:32)
at Function.Module._load (node:internal/modules/cjs/loader:822:12)
at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:77:12)
at node:internal/main/run_main_module:17:47
[nodemon] app crashed - waiting for file changes before starting...
[nodemon] restarting due to changes...
[nodemon] starting `node server.js`
Server is up and running at 4000
[nodemon] restarting due to changes...
[nodemon] starting `node server.js`
[nodemon] restarting due to changes...
[nodemon] starting `node server.js`
Server is up and running at 4000
[nodemon] restarting due to changes...
[nodemon] starting `node server.js`
[nodemon] restarting due to changes...
[nodemon] starting `node server.js`
Server is up and running at 4000
[nodemon] restarting due to changes...
[nodemon] starting `node server.js`
Server is up and running at 4000
Successfully logged in.
[nodemon] restarting due to changes...
[nodemon] starting `node server.js`
Server is up and running at 4000
{}
Successfully logged in.
{ pickup: 'vsddf', destination: 'dabjkdbjf', date: '2022-05-25' }
Successfully logged in.
Successfully logged in.
{ pickup: 'chandigarh', destination: 'delhi', date: '2022-05-15' }


Hyper
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MINGW64:/c/Users/Sohail
MINGW64:/c/Users/Sohail
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Hyper
MINGW64:/c/Users/Sohail/Desktop/TOP
MINGW64:/c/Users/Sohail
MINGW64:/c/Users/Sohail
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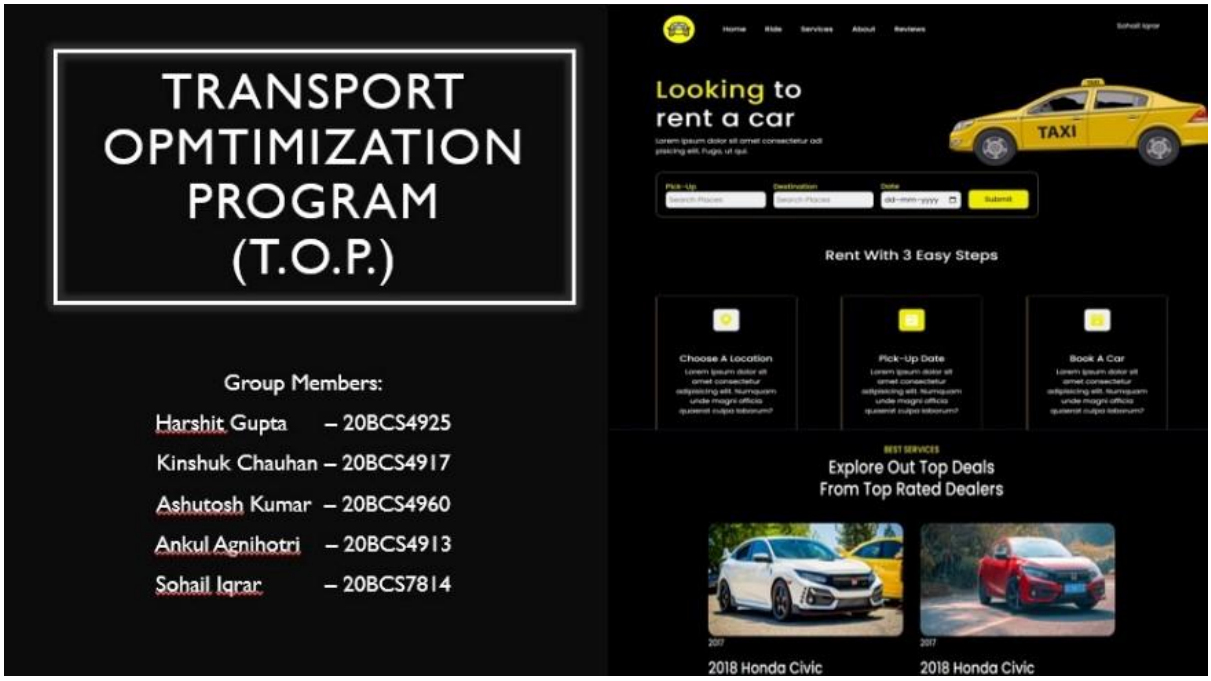
PPT:


TRANSPORT OPMTIMIZATION PROGRAM (T.O.P.)
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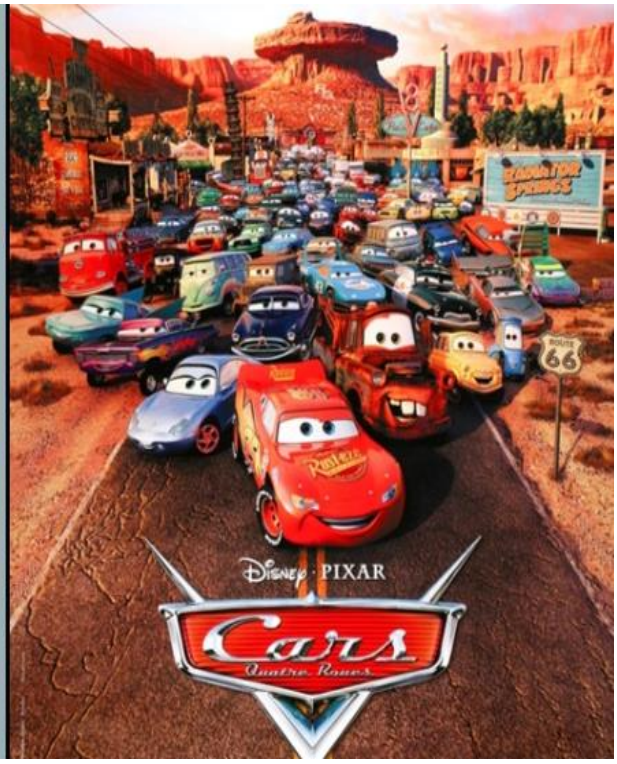
INTRODUCTION

Due to the increasing amount of peoples, every single people travel to their Destination alone in their own car. Traveling alone leads to increases individual fuel costs. The carpooling system merges multiple new people in a car which leads to meeting new people in a car, reducing air pollution and noise pollution. The carpooling system saves the economy of every people as they share their rides and also share the cost with the other member in the car. It will stop endless Spending money on travel. Rather than using public transportation such as local trains, buses, and metros.



OBJECTIVE

The main objective of this project is to create a platform to solve major environmental issues and to provide customers with optimized facilities. This is going to prove a good approach to resolving the issues related to costly cab booking and also save the time of the customers.

This will also have several good effects like a better use of resources and a reduction in time incompatibility.

WHAT IS CAR POOLING ?

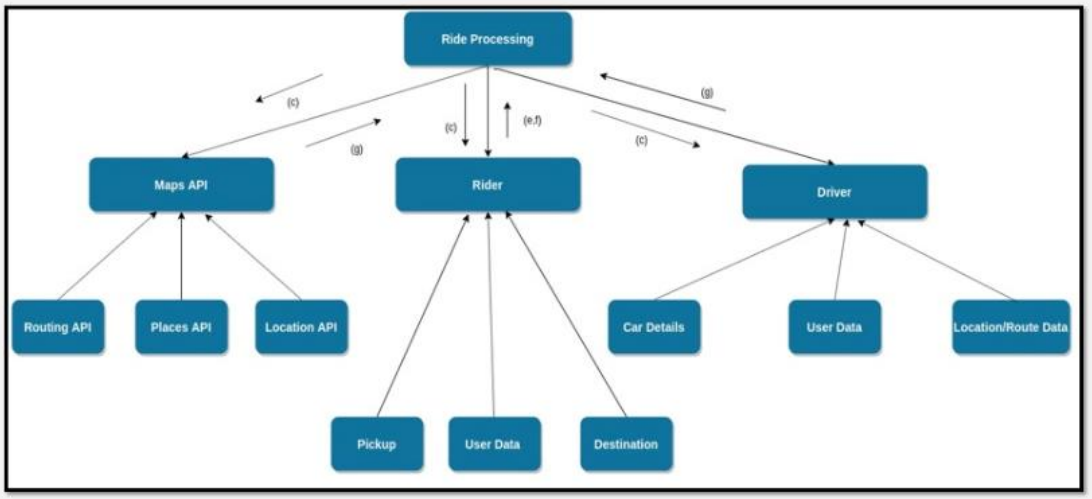
Carpooling is a mode of transportation in which a non-profit driver can share a common route and time in their personal car with passengers. Researchers believe that the characteristics of participants in carpool trips influence carpool formation.

WHAT WE HAVE USE IN OUR PROJECT ?

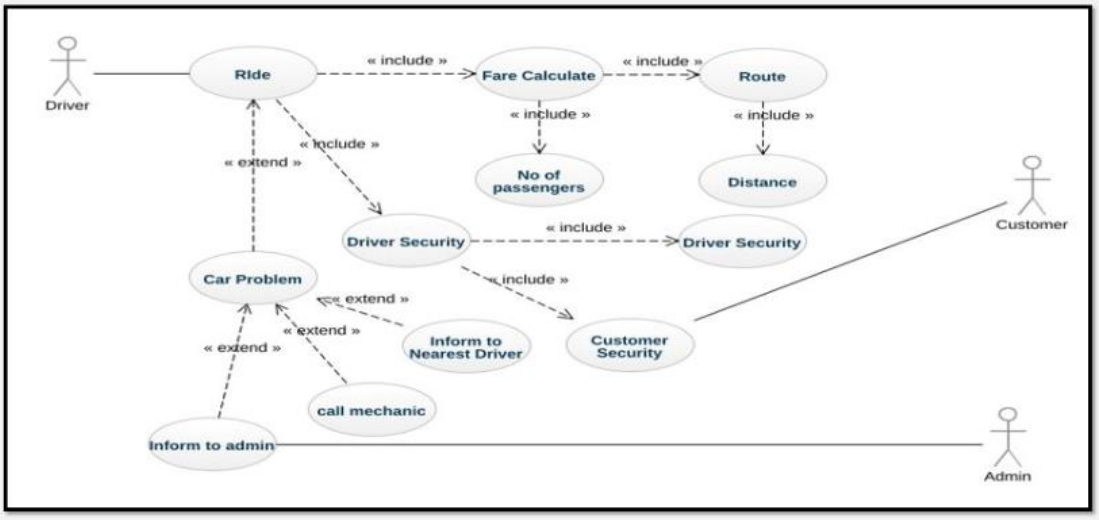
FRONT-END

BACK-END

DATA FLOW DIAGRAM



USE CASE DIAGRAM



OUTCOMES

The very motive and aim of our efforts through this project is to make people spend less money as they share the amount on every ride with others who also do the same. Our little efforts of carpooling helps people to use lesser number of vehicles as compared to what they would have done if travelled alone causing a drastic effect on pollution and also lessens the traffic overall.

CHAPTER 4: ANALYSIS AND VALIDATION

Task Definition:

1. Requirement Analysis:

Some requirement for this project is:

- HTML,CSS,JAVASCRIPT
- Node.js
- Express.JS, EJS
- MongoDB
- Mongoose

HTML- As human are lifeless without bone, Web has no meaning without HTML. It provides the basic structure for Login & Registration system.

CSS - User will use your site if your site is interactive as well as, well designed, this can be achieved by Cascading style sheet.

JAVASCRIPT-JS, is a programming language that is one of the core technologies of the World Wide Web, alongside HTML and CSS. Over 97% of websites use JavaScript on the client side for web page behavior, often incorporating third-party libraries.

Node.js:

Node.js is a cross-platform, open-source back-end JavaScript runtime environment that uses the V8 engine to execute JavaScript code outside of a web browser.

Express.JS:

Express.Js is one of the best backend development JavaScript Framework.

MongoDB:

MongoDB is an open-source document database built on a horizontal scale-out architecture that uses a flexible schema for storing data.

2. Common Flaws Detection:

While producing a product, the developer major concern is to remove all kind of bugs/error from his/her product. So, for this project also I have first learnt about the common errors made by the developer like HTML injection, POST-Refresh-Redirect pattern etc.

3. Basic Layout/ Schema Creation:

First of all, to protect our database schema from unauthorized use we should grant access only to specific person or individual. So, that user can only interact with login system not to the database even if know the password and username. The access to the database must be in the hands of only the administrator and only the individual and administrator should be able to control or see one's information.

Moreover,
The registration page would include many fields such as the mail-id or phone number, the username, new password and a remember me checkbox.

The user can sign up with their mail-id or phone number and set a password according to the guidelines.

4. Unit testing:

In this I will test each section of the project separately.
This includes the input data validation for the project and other testing like

- Checking the fields are empty or not.
- Proper mail validation
- Proper Redirects
- Controlling the Data Redundancy.
- Checking if website is working properly or not.
- Checking that the data which is provided from user is updated in database or not.

5. Integrated testing:

Checking that, whether the project work flow is proper or not. whether the end project is fully functional or not.

Lastly, checking whether any evolutionary step required or not.

CHAPTER 5: CONCLUSION AND FUTURE WORK:

CONCLUSION:

This paper presented a detailed explanation on the various methods used in the website for proper function of website. Also, we discussed the implementation of latest technologies like node.js, express,js, ejs, mognoDB . We tried our level best to make our project unique, time saving, less complex and interesting one for the user. We will be continuously updating our website timely to add various new features to increase the user's interaction with our webpage.

References

[1]Hanif and Sagar (2016). The cab services are proving security through a global positioning system (GPS) and women taxi drivers for women passengers, especially during night times.

[2]Horsu and Yeboah (2015), have argued that driver behavior has a negative impact on cab services at Ghana