CarBuddy: Ride-Sharing Platform

1.Sharayu Mahendra Banait BE-A-08.
2.Priyanka Vijaysing Pardeshi BE-A-75
3.Chetan Jayram Mahajan. BE-A-52
4.Mahendra Rajendra Bagul BE-A-07

Department of Computer Engineering
Under the guidance of
Dr Manoj Patil Sir

31 Mar 2023

Overview

Introduction

- Carpooling is an environment-friendly method where sharing of rides can reduce the number of vehicles on the road which in turn reduces the problems like,
  - Environmental Pollution,
  - Traffic Congestion
  - Lack of space for parking area.
- By having more people in a single vehicle, reduces the various costs of the journey.
  For example, combining three or more people who set off on the same direction in different vehicles, into one, reduces the costs of fuel needed for separate vehicles
- It offers two different types of services,
  - Share Ride
  - Search Ride

Motivation

- The constant population and economical growth caused an increase in the number of private cars in cities. This led to,
  - Traffic congestion
  - Parking problems
  - Inordinate fuel consumption
  - Excessive pollution
- The capacity of a car is 4 passengers, but often cars are observed with one rider only.

Problem Statement

- There is serious problem of traffic on roads these days and the increasing fuel prices making the condition worst.
- Also use of vehicles causes pollution which has its adverse effects on our environment.
- Carpooling is a solution to this problem but issues like security and trust can arise.
- Solution to this problem is CarBuddy : Ride- Sharing Platform.
- The carbuddy would enable its user a safe and secure way to share cars. This could include both short daily journeys such as going to the workplace within the city as well as long inter-city trips.

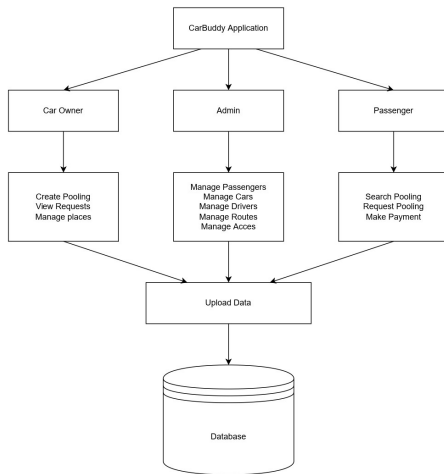# Literature Survey

-

System Architecture

Figure: System Architecture
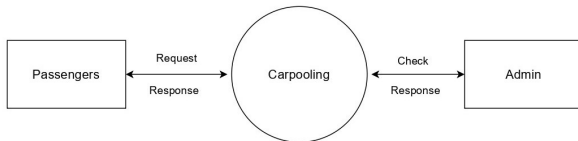
Data Flow Diagram Level 0

Figure: Data Flow Diagram
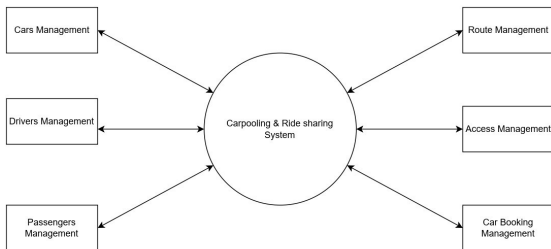
Data Flow Diagram Level 1

Figure: Data Flow Diagram Level 1
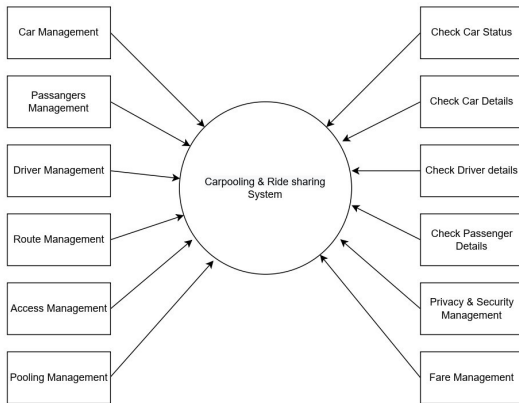
Data Flow Diagram Level 2

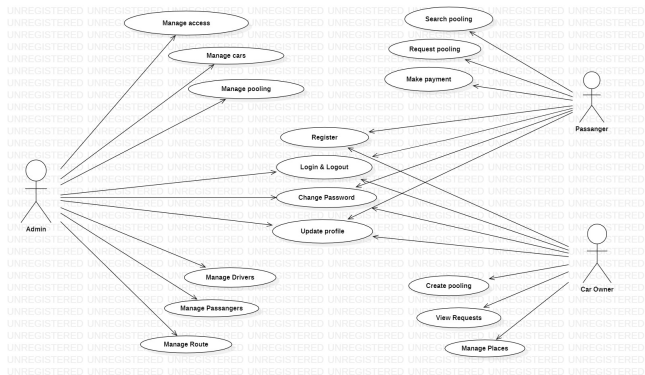Figure: Data Flow Diagram Level 2

Use Case Diagram

Figure: Use Case Diagram
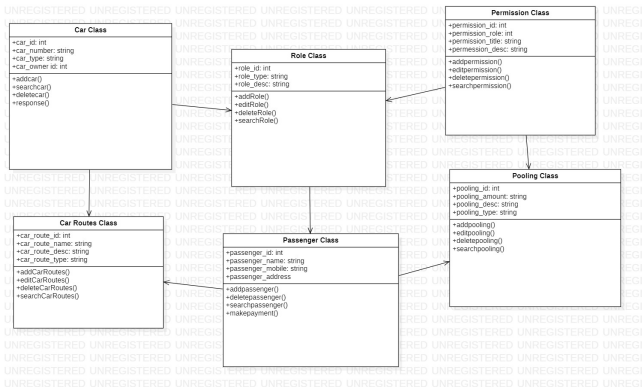
Class Diagram

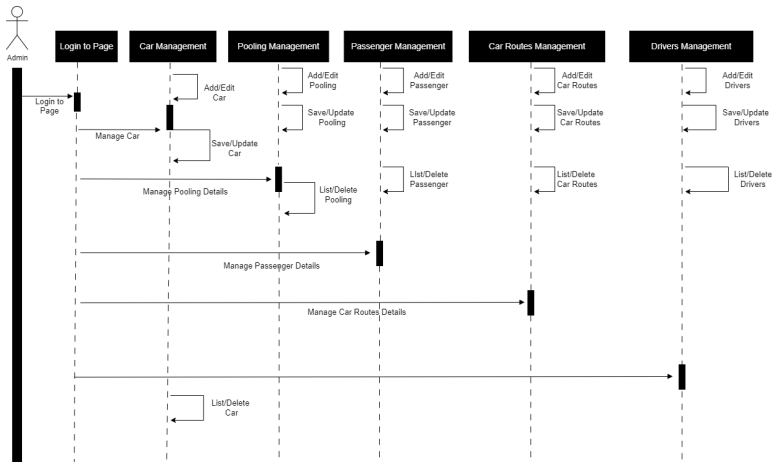Figure: Class Diagram

Sequence Diagram

Figure: Sequence Diagram
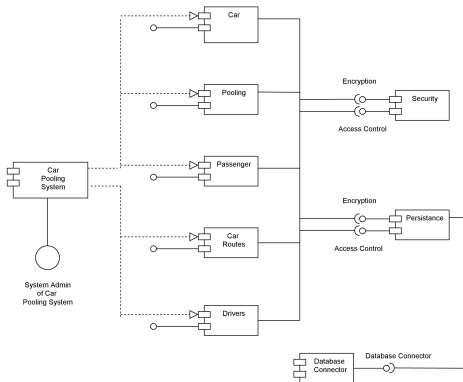
Component Diagram

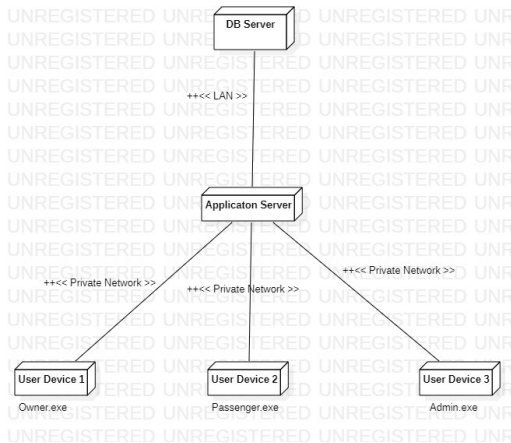

Figure: Component Diagram

Deployment Diagram

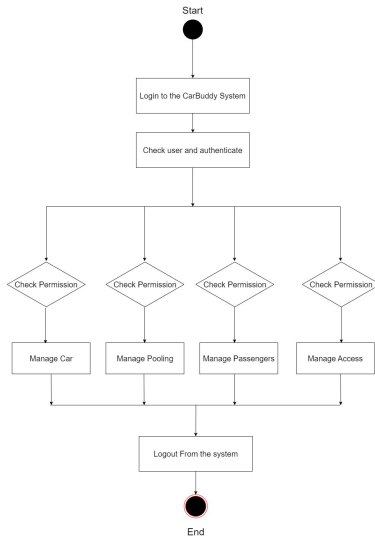Figure: Deployment Diagram

Activity Diagram

Figure: Activity Diagram

Project Scheduling

Scheduling in project management is the listing of activities, deliverables, and milestones within a project. A schedule also usually includes the planned start and finish date, duration, and resources assigned to each activity. Effective project scheduling is a critical component of successful time management.

Task	Start	Days to Complete
Selection of project title	06 sep 22	5
Gathering the information	11 sep 22	6
Analyse the information	17 sep 22	5
Discuss with guide	22 sep 22	3
Made the problem statement	26 sep 22	2
Checked the Scope	28 sep 22	2
Checked Feasibility	30 sep 22	2
Design UI	02 oct 22	4
Design UML Diagram	9 oct	4

Figure: Project Scheduling

Software and Hardware Requirements

- WINDOWS 7 or higher.
- Python 3.7.0 or higher.
- Visual Studio Code.
- 2GB RAM (minimum).
- Postgresql Database
- 100GB HDD (minimum).
- Intel 1.66 GHz Processor Pentium 4 (minimum).
- Internet Connectivity.

Implementation Steps

- Collection of requirement analysis
- Creation of UI in Figma Software
- Designing of API endpoints
- Start developing UI/Frontend of website
- Creation of database
- Start developing backend apis
- Integrate UI with Backend(APIs)
- Testing
- Project Complete

Modules in Project

- In project many modules are included which are as follows:
- Flask (website backend python framework).
- Passlib(for hashing passwords).
- Flask-wtf(for handling html forms at ease).
- psycopg2(database for data handling).

Results and Discussion

After doing the design and implementation of the above system it is founded that after following the software development life cycle thoroughly it can help us to create project with ease. Also with the help of testing, the software can be bugs/errors free.
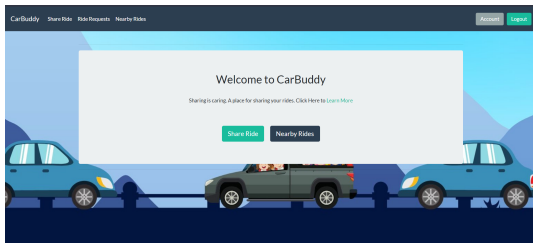

Figure: Interface of the Project

Conclusion

- Carpooling helps in reducing environmental pollution, traffic congestion and lack of space for parking areas as well. So, it is an environment-friendly social web application and also helps people to reduce their journey time.

- It save thousands of amount spend on,
  - Fuel expense
  - Vechicle wear
  - Parking Tools,etc.

- It helps to meet new people.

- It also helps in reducing stress from driving.

- The more you carpool, the more your environment will thank you. So drive less and make a positive contribution to your environment.

Future Work

- Inclusion of GPS system.
- Tracking and monitoring methods for driver.
- Calculation of journey time and distance for fare.
- Integrating Carbuddy with cargo pooling.

Bibliography

- Ozanne, L., Mollenkopf, D. (1999). "Understanding consumer intentions to carpool: a test of alternative models." In Proceedings of the 1999 annual meeting of the Australian New Zealand Marketing Academy. smib.vuw.ac.nz (Vol. 8081).
- Fraichard, T. (2005). "Cybercar: l'alternative à la voiture particulière." Navigation (Paris), 53(1), 53-74.
- Dargay, J., Hanly, M. (2007). "Volatility of car ownership, commuting mode and time in the UK." Transportation Research Part A: Policy and Practice, 41(10), 934-948.

THANK YOU!