

DUBLIN BUSINESS SCHOOL

**Web Development for Information Systems
(B9IS109)**

**A REPORT ON
CarPooling-Management-System**

**BY
VIRENDER KUMAR (10594417)**

Introduction:

The Car-Pooling Management System is carefully designed to assist users in sharing car rides with others who are traveling the same route. The user may wish to share his vehicle or ride with another user who is also willing to share. The carpooling App is created using the Django framework and the GoogleMaps API. It is aimed at frequent travelers who are seeking a cost-effective and comfortable means of transportation. It will be useful for office commuters who are using the same route and are prepared to split the expense of transportation. Anyone who has a car can volunteer to be a driver, which will get them some extra money and other riders will also save money and will get a comfortable ride to their respective destination.

Requirements Implemented

- Web APP for the user(driver) who is going to its destination and wants to share the Ride.
- Web APP for the user(Rider) who wants to go from pickup to destination.

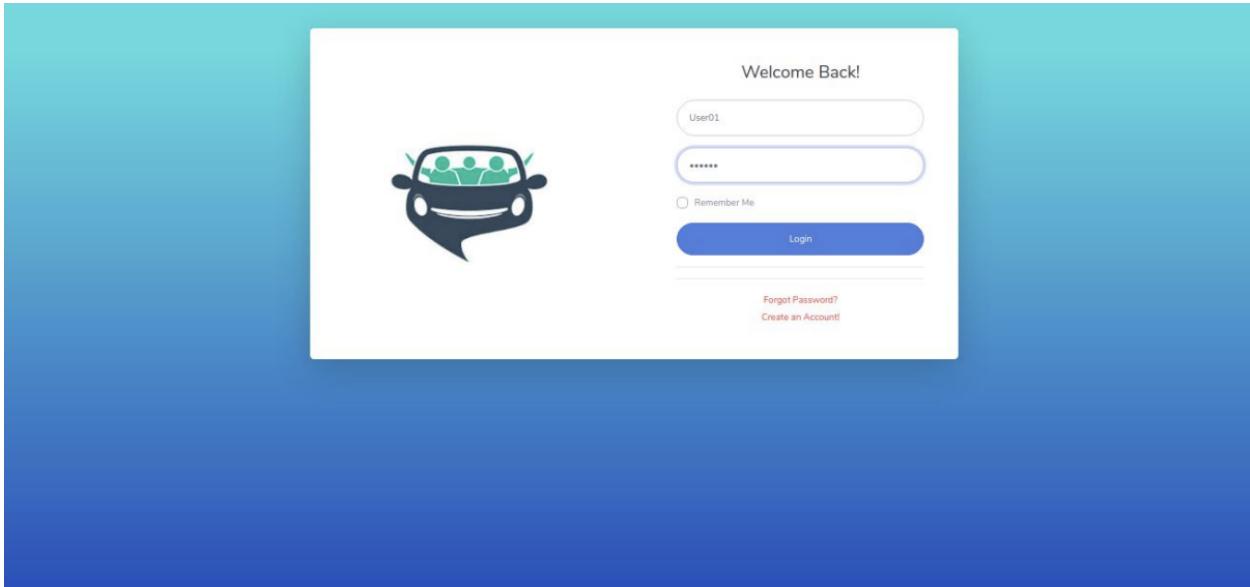
There are two categories of users:

1. **Driver** - A user who wants to share his ride with other people along the same route or is a full-time driver.
2. **Rider** - A user(other than driver) sharing a ride. He can book in realtime and will be assigned a driver from the pool of drivers available.

Working & Screenshots

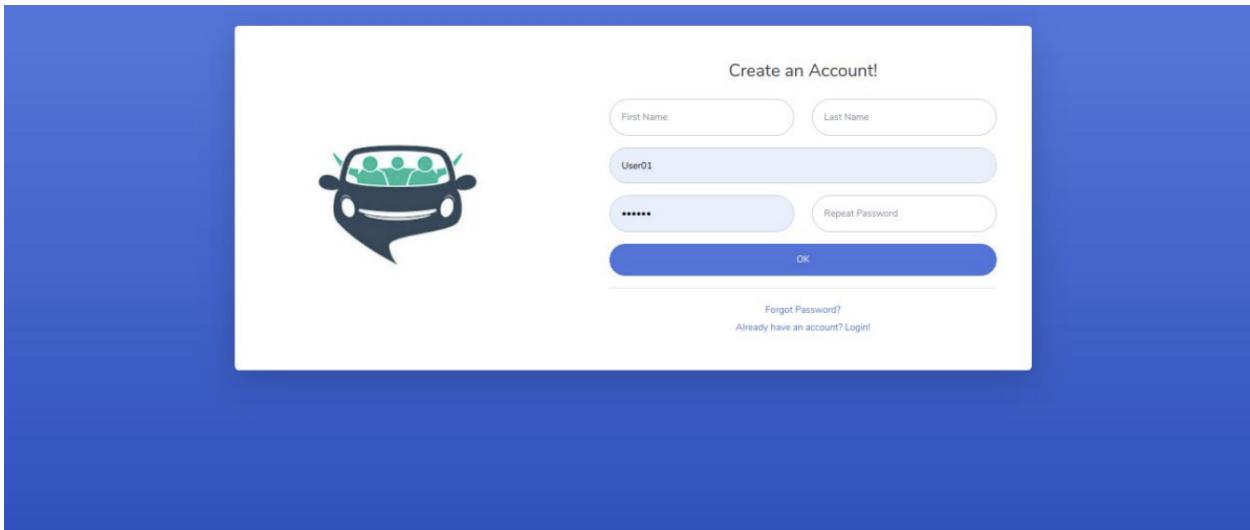
Login Page

- Authenticate the user with userId and password.



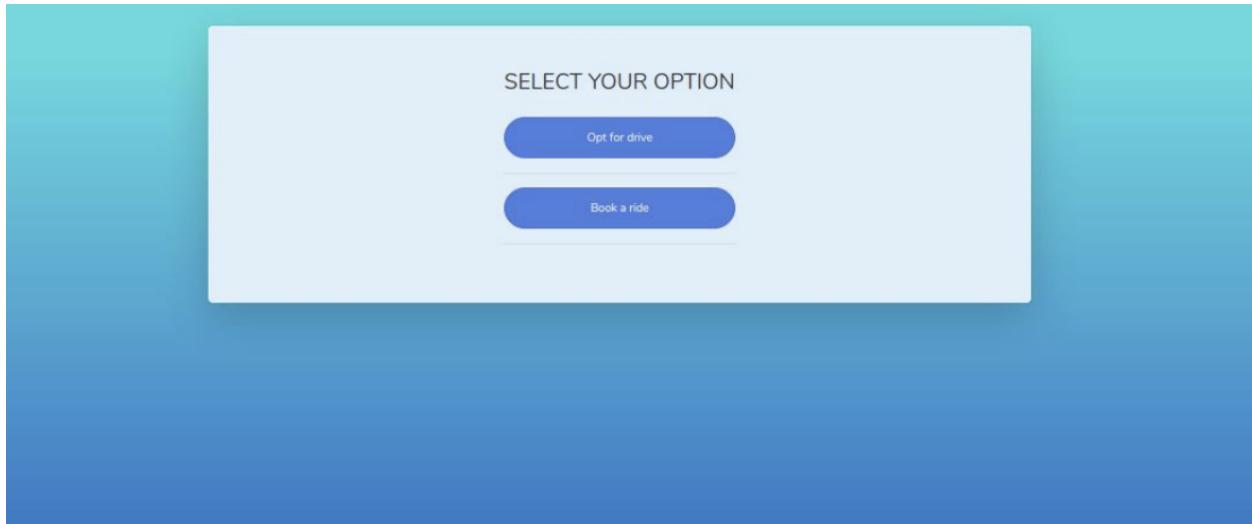
Registration Page

- Allow users to create new accounts with preferred user IDs and passwords (Min 6 char).



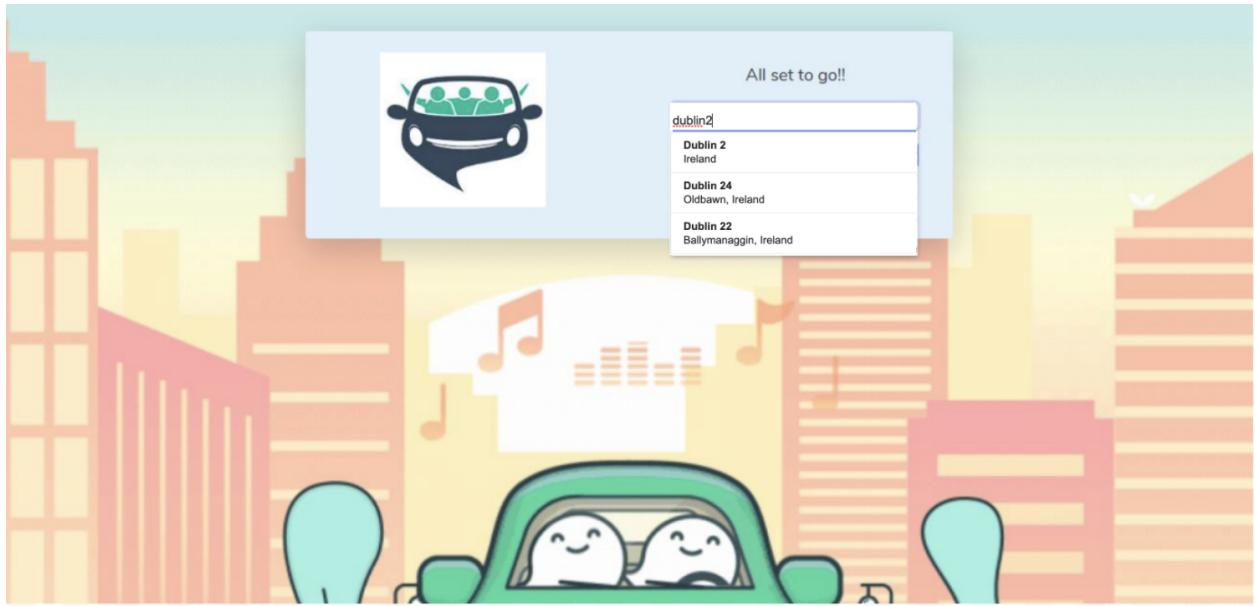
Drive or Ride Selection! (Page)

- After login comes to this page which gives the user the option of selection to drive or ride!



Driver Flow

When the user selects the Driver option, the website will ask for the destination. As demonstrated in the screenshot below, we used the Google Places API. It will suggest a route to the driver. It collects the driver's current location in the background using the Google GeoLocation API.



Driver Dashboard

When a driver inputs a destination point, he is sent to the driver dashboard, where he may see all of the available riders. We can see one available rider in his dashboard in the screenshot below. Each rider has an accept button that allows him to pick who he wants to travel with based on his location (PickUP and Destination). We also offer features like Available Seats, Current Ride Requests, and Displaying Fare, as you can see (once the ride ends).

DRIVER

Search for...

User02

Driver Dashboard

SEATS AVAILABLE
4

RIDE REQUESTS
1

FARE

Rider Name : User 2
Pickup Location : Dublin 2, Ireland
Destination : Dublin 1, Ireland

Accept

Navigation option:

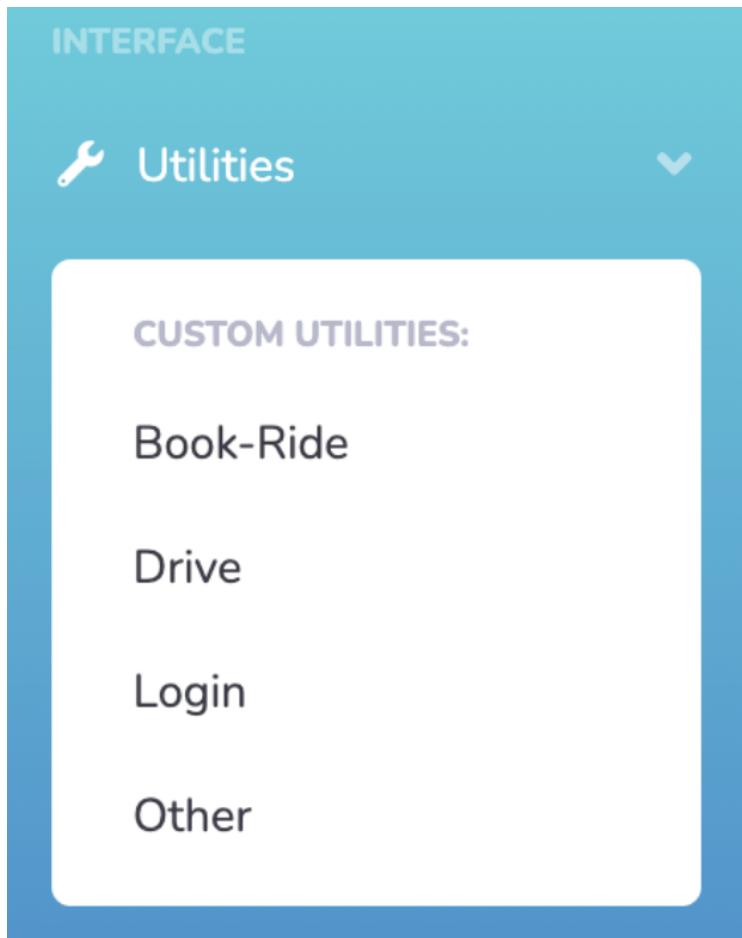
As per the design of the application I have configured some of the shortcut navigations for both rider and driver. Also we ride history option for every profile so they can track their past activities.

On the left side under the driver dashboard we have following options:

- Interface
- Addon

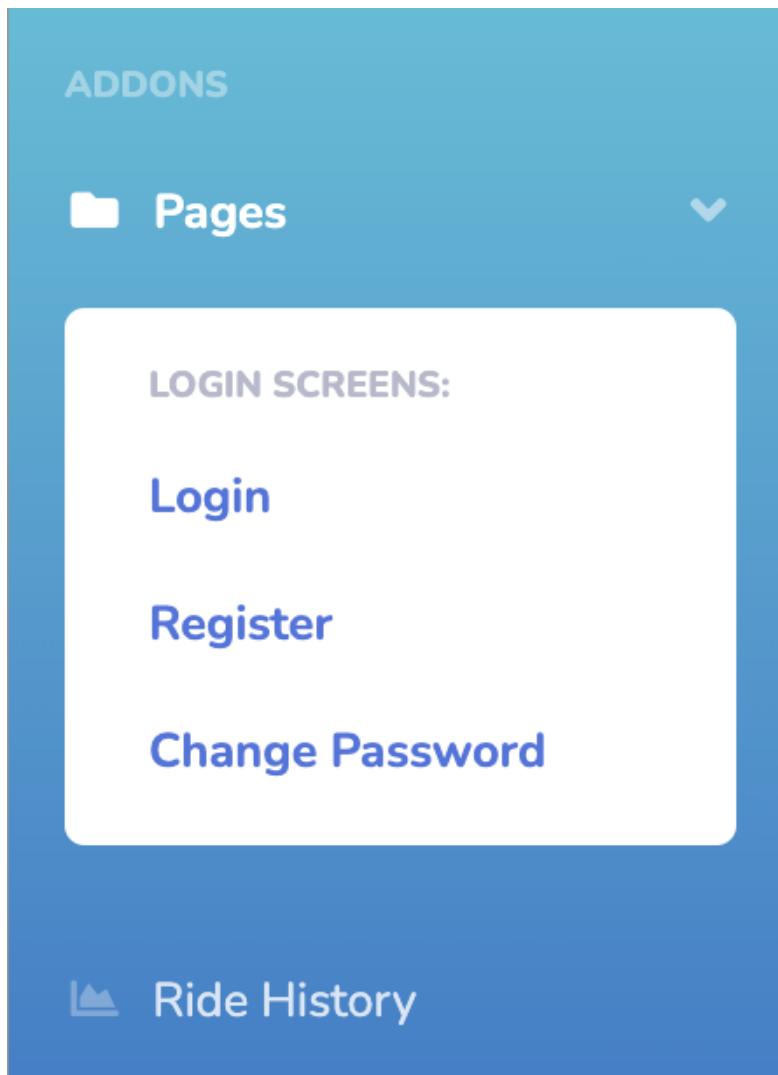
Under interface we have utilities once you click on dropdown arrow you can access following options

- Book-ride
- Drive
- Login
- Other



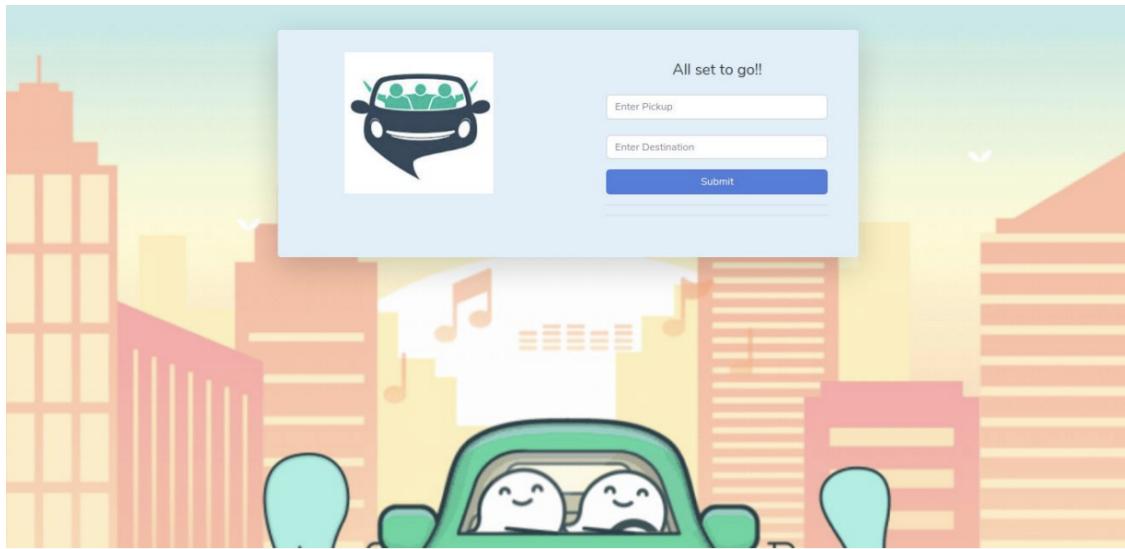
Under the Addon we have pages as an option. Once you click on the dropdown arrow you can access pages like

- Login
- Register
- Change Password

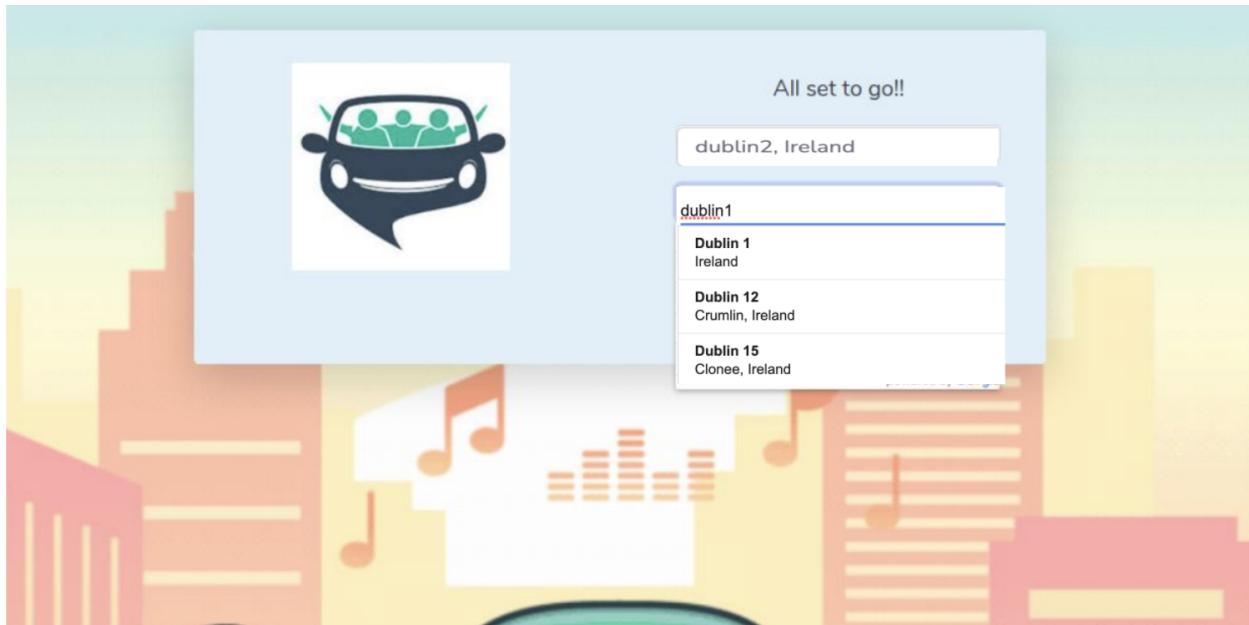


Rider Flow

If the user selects the “Book a Ride” option, the following page appears for him, where he is asked for Pickup and Destination Location using Google’s Places API .



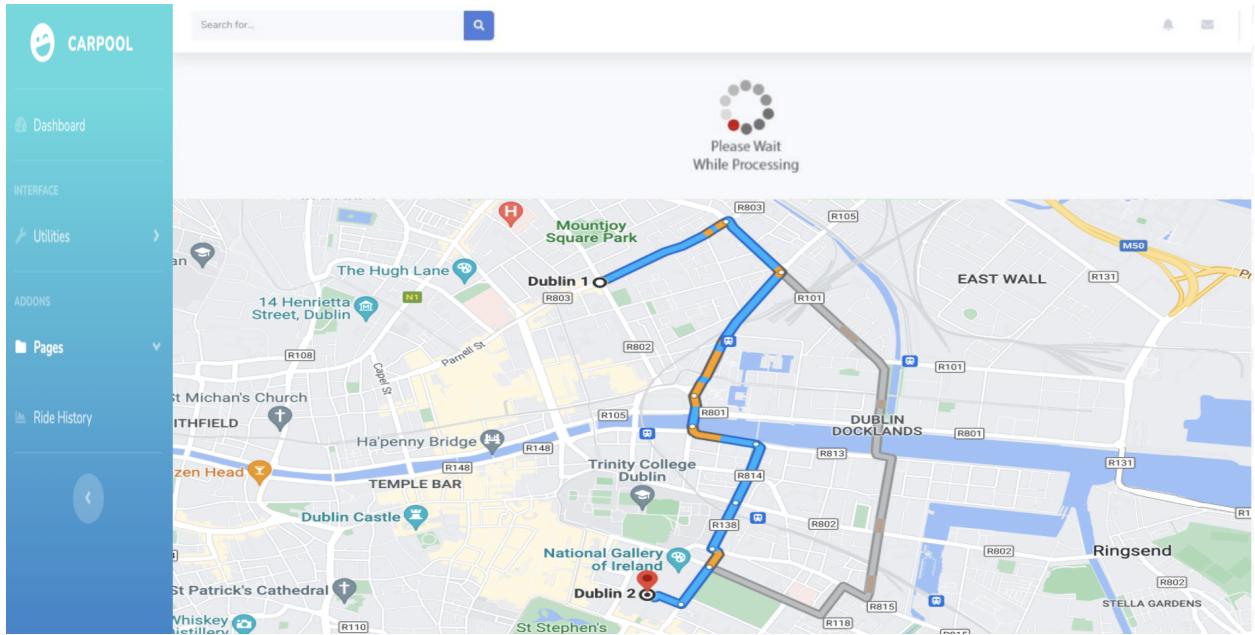
Here the rider is auto suggested places using the Google Places API



Rider Dashboard

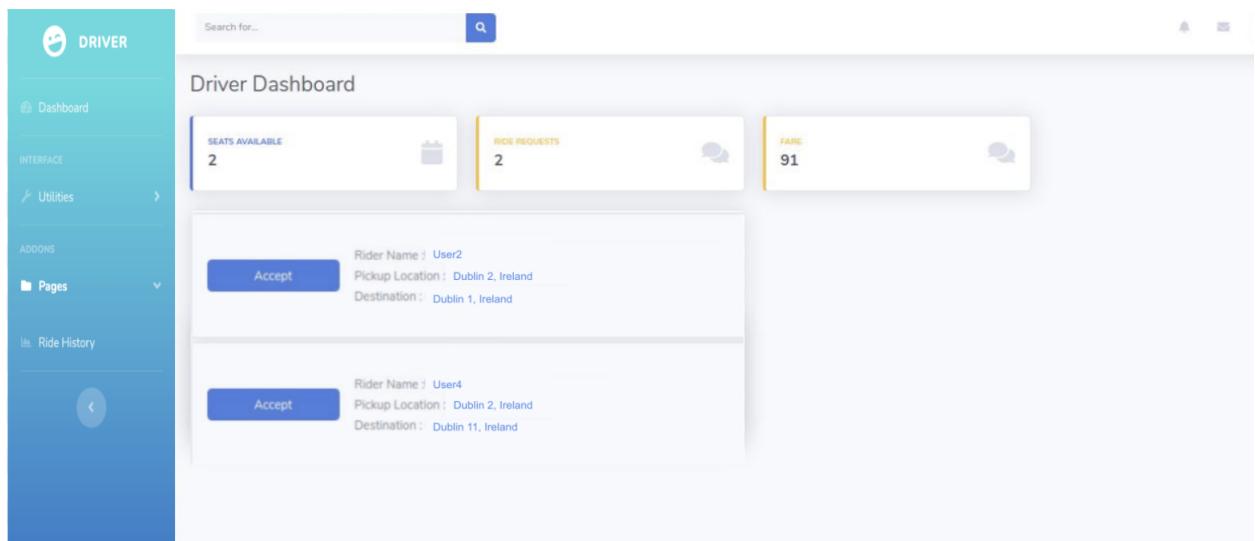
Once rider enters pickup and destination, in the background our app:-

- Collects the rider's current location using Geo-Location API , and
- While the ride request is being processed, shows user Directions to Pick Up point using Google Maps Direction API.



Driver Dashboard And Accept rider Request

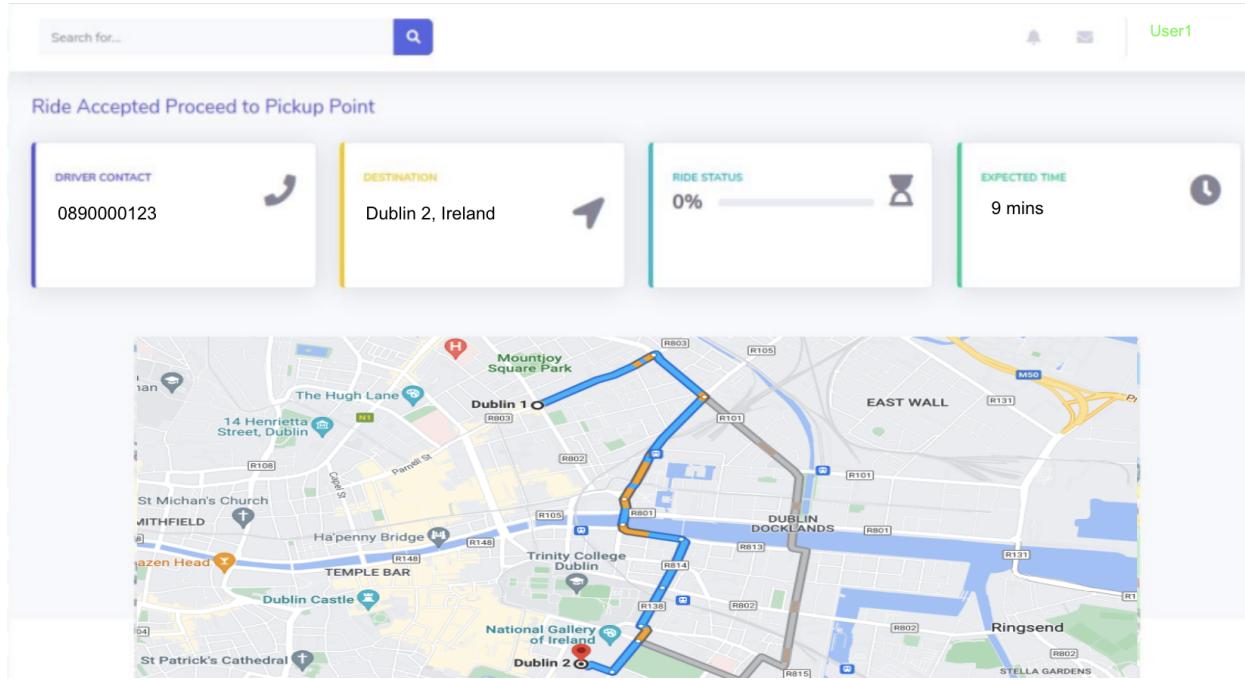
1. In the Previous driver dashboard only one ride was visible but when the above rider requested a ride it's dashboard was updated and now it's showing two riders.
2. Once the driver accepts the rider request the accepted ride is now added to the right side of the screen which shows all the accepted rides.



Rider dashboard after accepting the ride

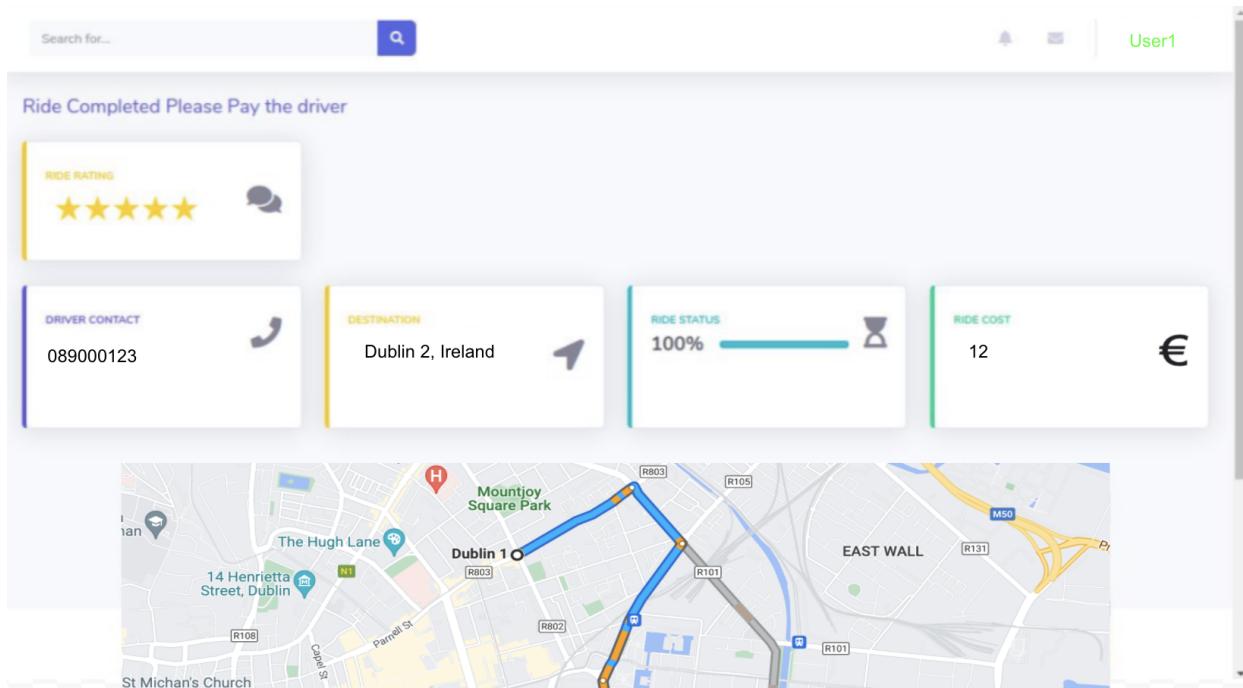
Once the ride of user "user1" has been accepted, the rider dashboard changes and now has 4 floating cards which:-

1. Shows the Driver's contact and Destination details.
2. Shows the ride completeness Status.
3. Estimated time to reach.



Driver Dashboard and End Ride

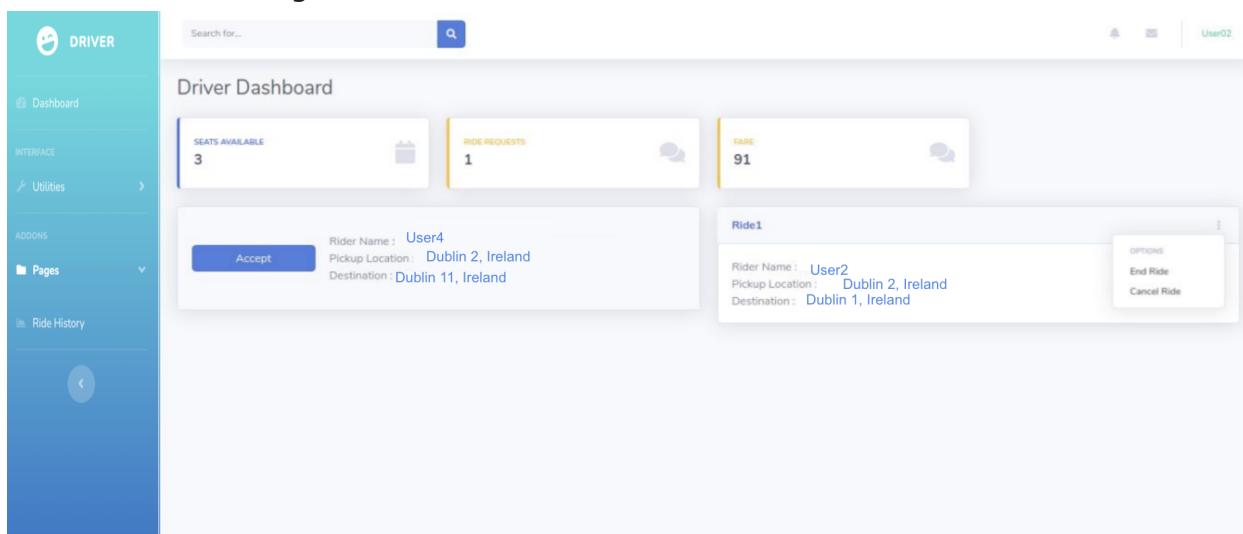
- For each selected ride the driver gets an option to end the ride.
- If the driver ends the ride then the Fare and capacity of the driver car gets updated.



Rider Dashboard After End Ride

Once the driver ends the ride from his dashboard the following is reflected on the rider dashboard:-

1. Actual Fare gets updated in place of expected fare.
2. Ride Status also gets 100%.



Technologies Used

Django Framework

Django is a Python-based free and open-source web framework, which follows the model-template-view architectural pattern.

Google APIs Used

- Directions API - It is used to display routes between two points. Route similarity is inferred based on this to broadcast ride requests to specific drivers.
- Distance Matrix API - It is used to get distance between two points. This is used to decide the fare of the ride.
- Geocoding API - It is used to convert a place name(For eg: Central Park, New York) to its corresponding coordinates(latitude and longitude).
- Maps JavaScript API - The API is used to make calls to different APIs using JavaScript.
- Places API - The API is used to get suggestions of places when a user types a string.

Jquery

jQuery is a JavaScript library designed to simplify HTML DOM tree traversal and manipulation, as well as event handling, CSS animation, and Ajax.

Javascript

JavaScript, often abbreviated as JS, is a programming language that conforms to the ECMAScript specification. JavaScript is high-level, often just-in-time compiled, and multi-paradigm. It has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first-class functions.

Bootstrap

Bootstrap is a free and open-source CSS framework directed at responsive, mobile-first front-end web development. It contains CSS- and JavaScript-based design templates for typography, forms, buttons, navigation, and other interface components.

Python

Python is an interpreted, high-level, general-purpose programming language.

Python Google Maps API

The API is used to make calls to different APIs using Python.

Functionality

There are two categories of users:

- Driver - A user who wants to share his ride with other people along the same route or is a full-time driver.
- Rider - A user(other than driver) sharing a ride. He can book in realtime and will be assigned a driver from the pool of drivers available.

GITHUB: <https://github.com/virenderid/Car-Pool.git>

Reference:

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Introduction

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