Developer Student Clubs
Kalinga Institute of Industrial Technology

DEV HACK 2020

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THEME DOMAIN- TRANSPORT

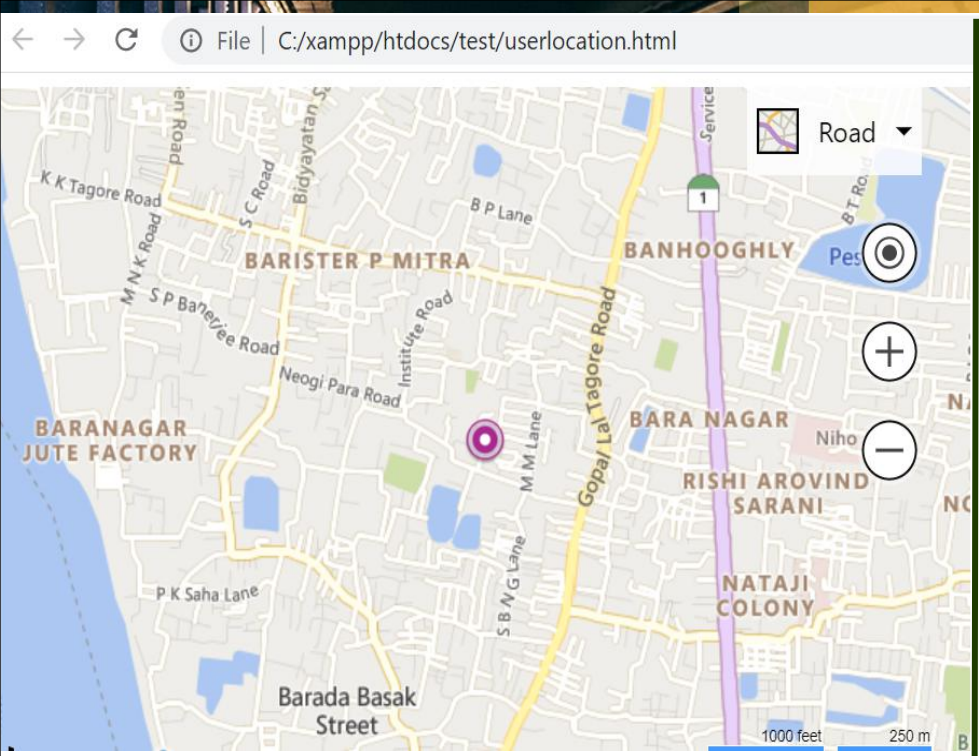
Problem Statement-How to make people use public transport more and also promote carpooling

SOLUTION
(a)PUBLIC TRANSPORT

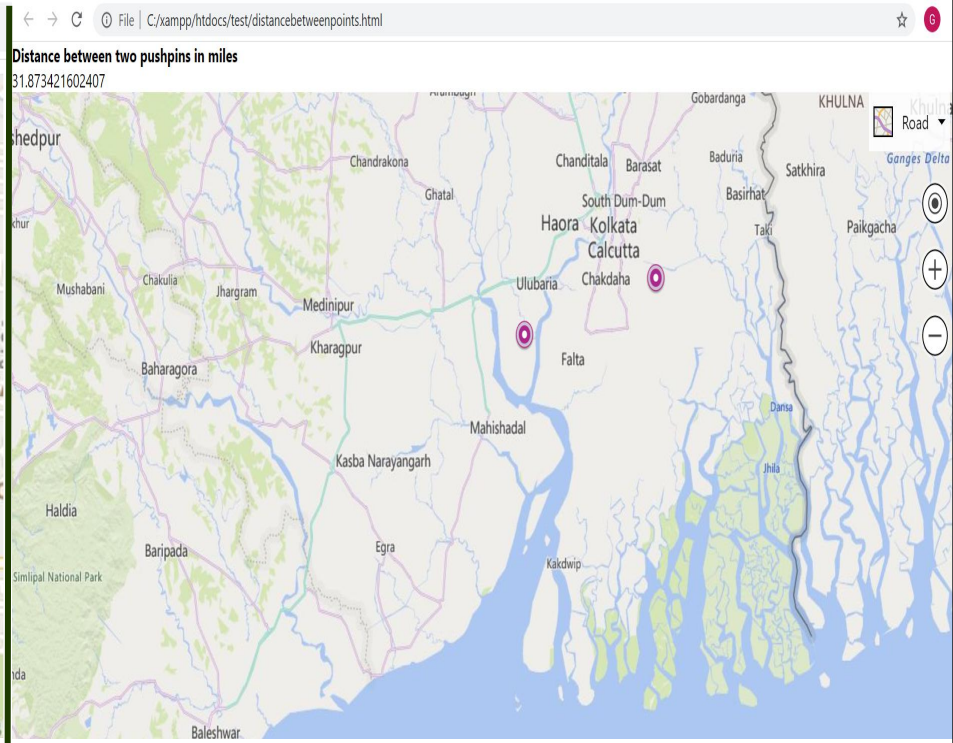
- This solution is intended for- middle class people
- Technology Used- **Website** that facilitates the submission and request of information to the database server.
- Usefulness-
  - People who rely on the public transport their major concern is to know the real time location of the bus for which they are waiting for and the time it will take to reach their bus stop. This information helps people in making better travelling decisions. So, a **real time monitoring system** of location of buses has been designed.
  - Also, we have developed a **central database** to hold bus record bus and driver details. This inturn has 2 implementations-
    - **User side**-Users can see the status of various buses arrived, travelling, cancelled or delayed on entering the terminal.
    - **Admin side**- Admin can regularly update the details and they will be shown the report.

REAL TIME MONITORING

As the numbers of vehicles are increasing day by day,which leads to a serious problem of traffic congestion which leads to low accessibility, loss of travel time and pollution. The solution to this is to improve and expand the use of public transportation system.
Hence, using GPS, passengers will be able to get information about the arrival time of the transit vehicle.
Thus, for providing real time information, we find average travel time that is derived from the historical data.
Our model uses Location based services to get the passenger's current GPS coordinates.
These coordinates are sent to the server side where it is coordinated with the nearest bus stop.
The passenger selects the Bus number from the drop down and request is sent to the server.
After processing, server sends the arrival time also passenger can locate the bus's current location on the map.



1. Showing location of user



2. Showing user location and location of bus

Our proposed model provides with user location navigation and also gives the distance between two destinations.

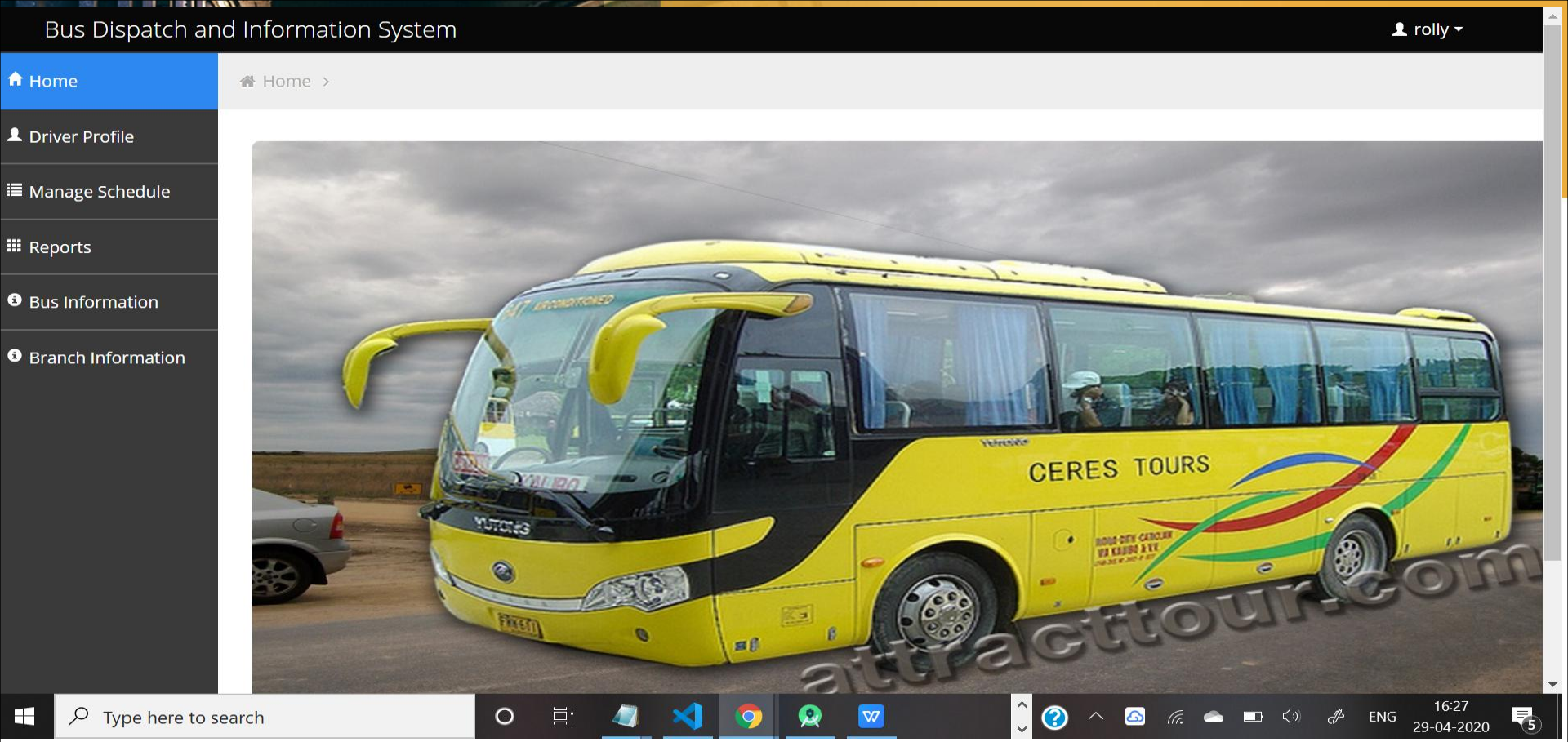
STATIC DATABASE

This module is the server side of the web application where most of the processing is done. Web service is used that facilitates the submission and request of information to the database server.

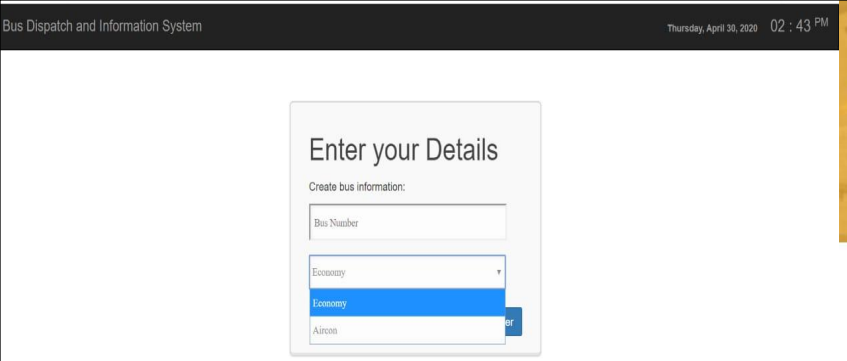
Here, users can see the status of the buses- it's arrival time, departure time and updates on delayed and cancelled buses.

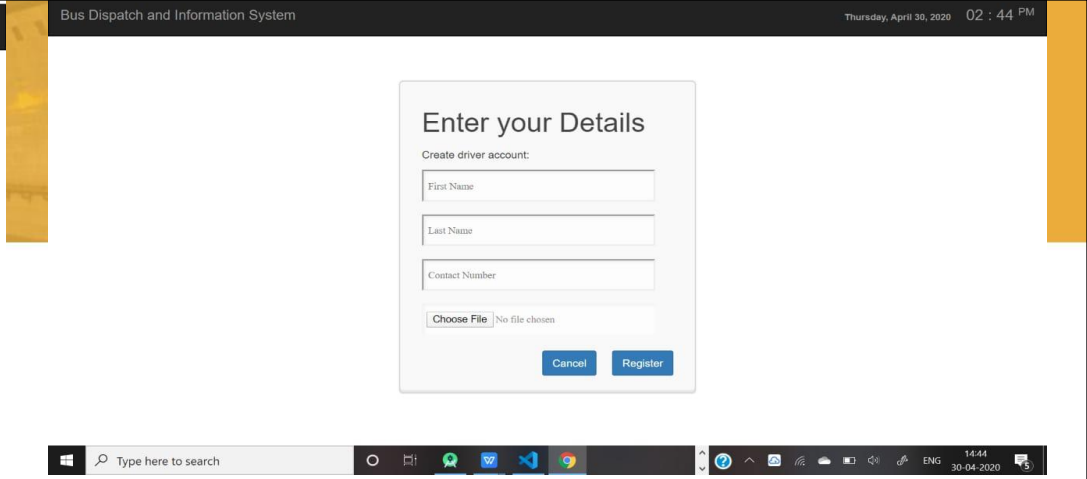
The admin can update the details of the buses, add or delete buses, and change drivers of the buses, if required.

Following snapshots will make it more clear-



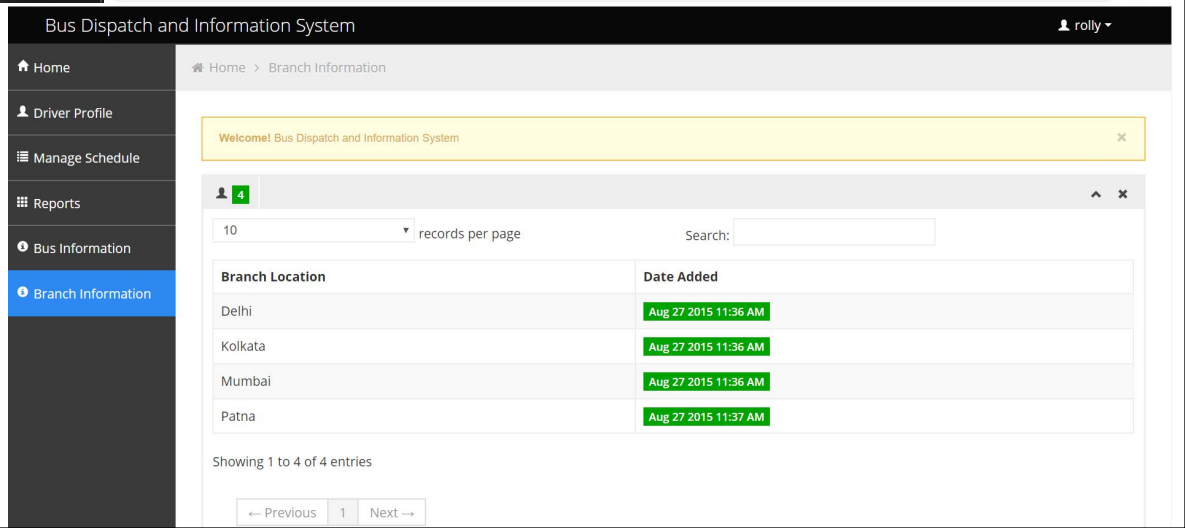
This is the admin screen upon login



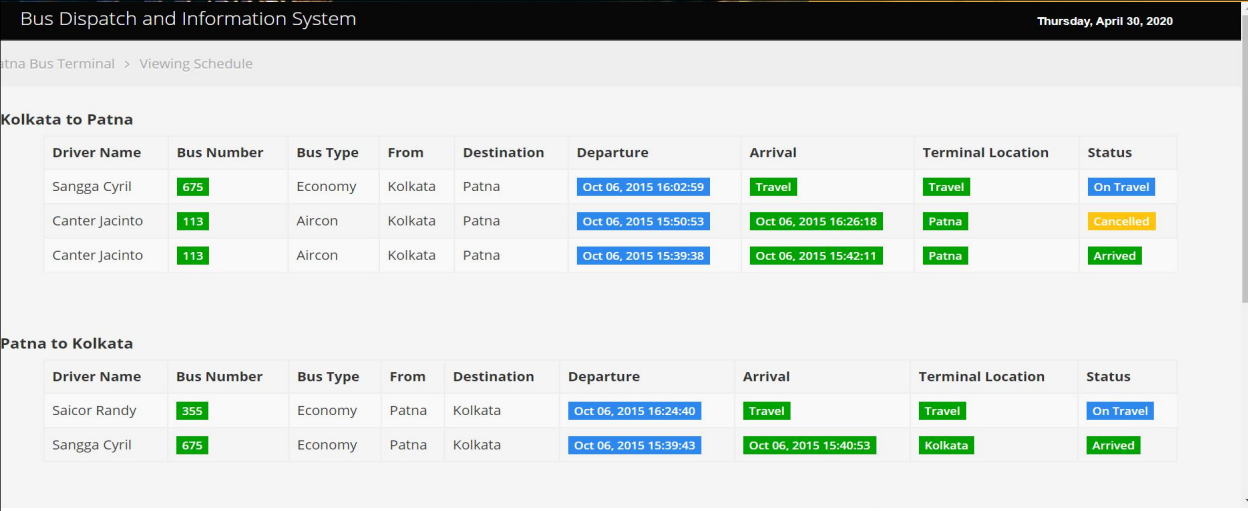


Creating driver account

To book bus

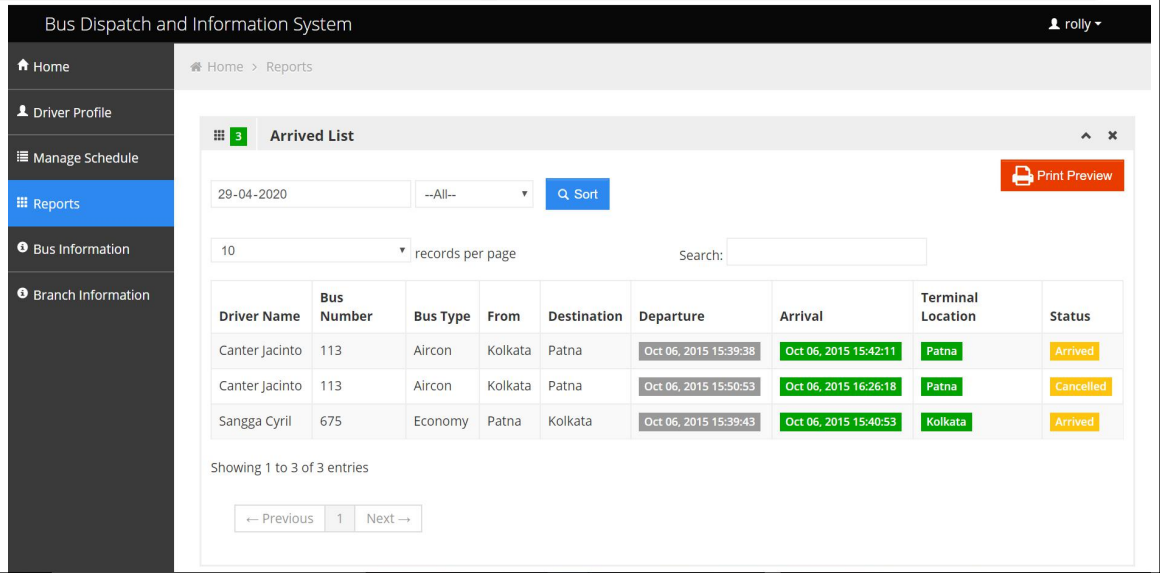


Admin Branch Information



User Information

Confirmation upon arrival

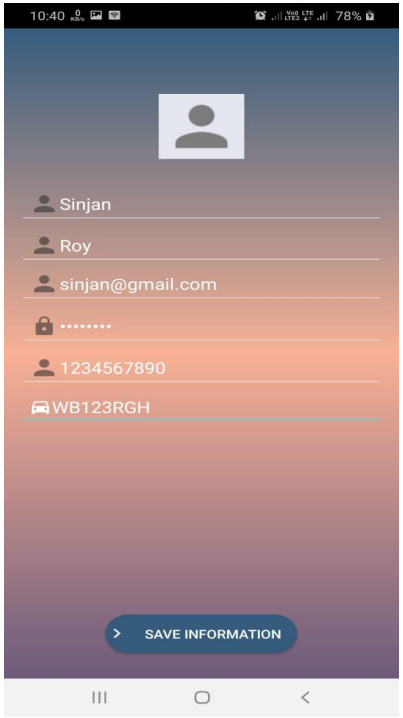


SOLUTION
(b)PROMOTE CARPOOLING

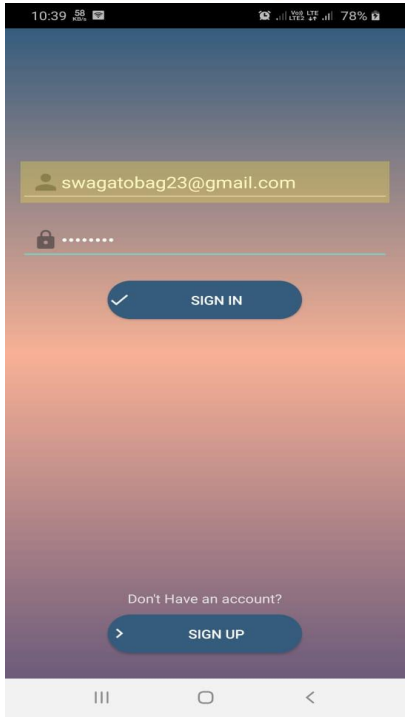
- Target audience- **middle class people** who can easily avail the app.
- Technology Used- An open source **android application** which helps people in offering/selecting rides to destination. This app allows users to register using email id and login.
- It provides users with mainly three options
  - **Update Profile**- allows users to update their personal information
  - **Offer Rides**- help users in offering rides to particular destination
  - **Search Rides**- allows user to search for any rides to particular destination, book specific rides.

The following snapshots of our app **RIDESHARE** will make the working more clearer-

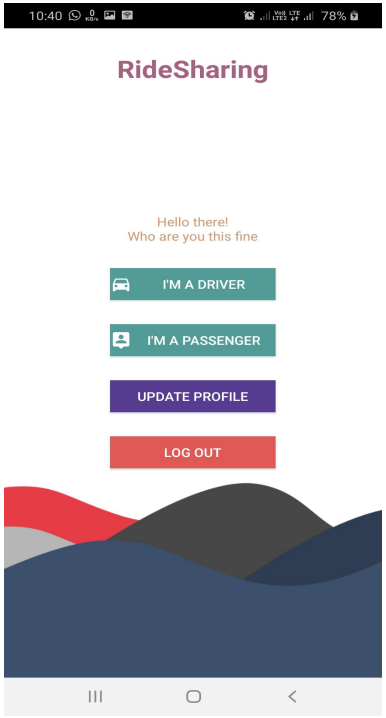
WELCOME TO RIDESHARE



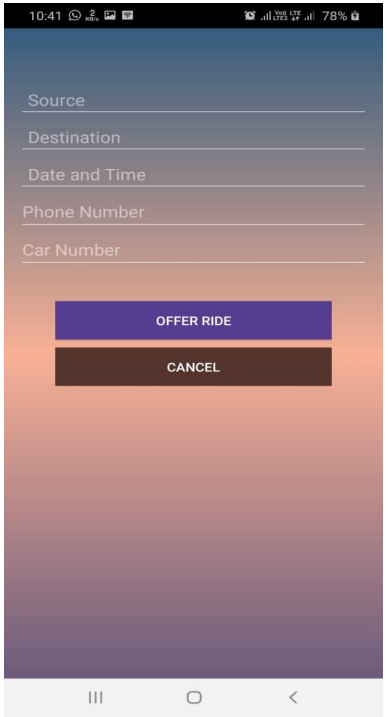
1. Creating an account



2. Signing in

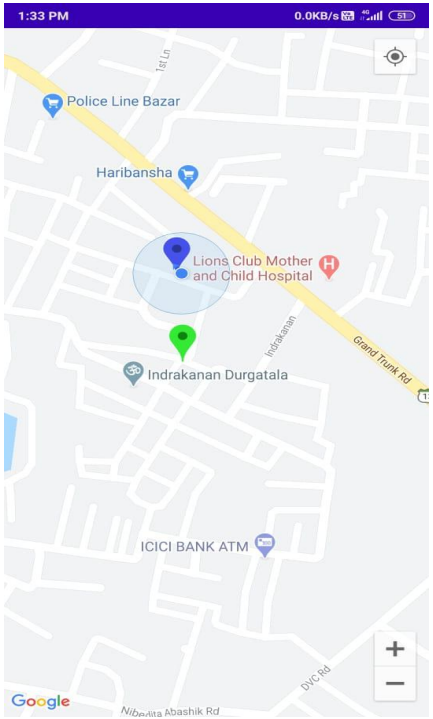


3. Selecting option (homescreen)

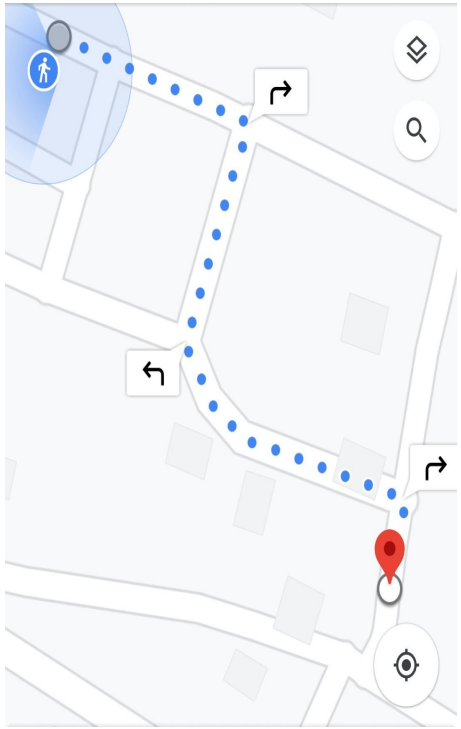


4.Offering ride by giving all required details

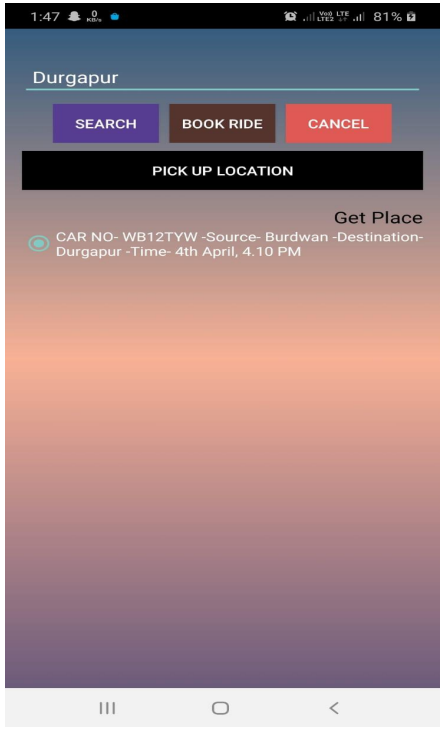
WELCOME TO RIDESHARE



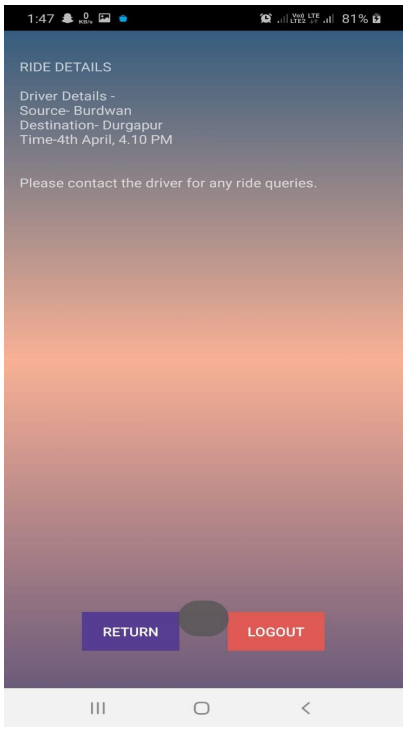
5.Search location



Magnified view of map location

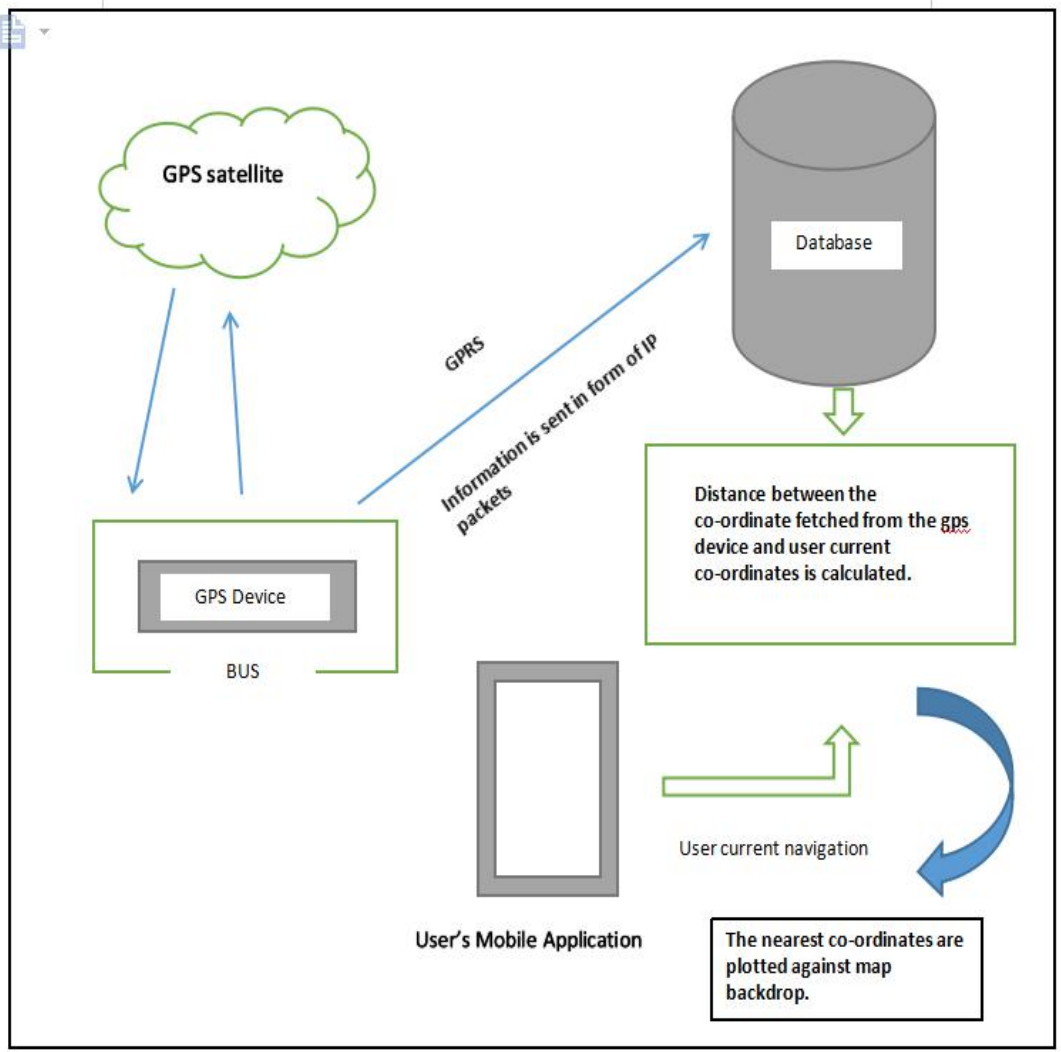


6.Search ride activity and book



7.Booking confirmation

ARCHITECTURE DIAGRAM



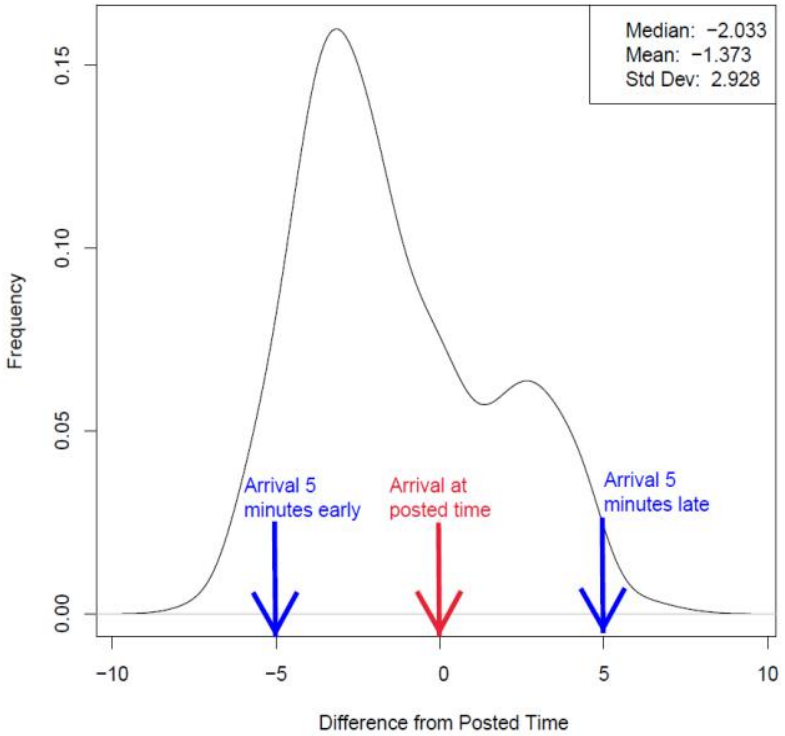
This diagram is a graphical representation of both the models- web and app.

- Current location of user is fetched through GPS.
- Driver applicant info is send to the Database via GPRS
- Distance between co-ordinates is fetched.
- Rider applicant receives the nearest available transport facilty from database.

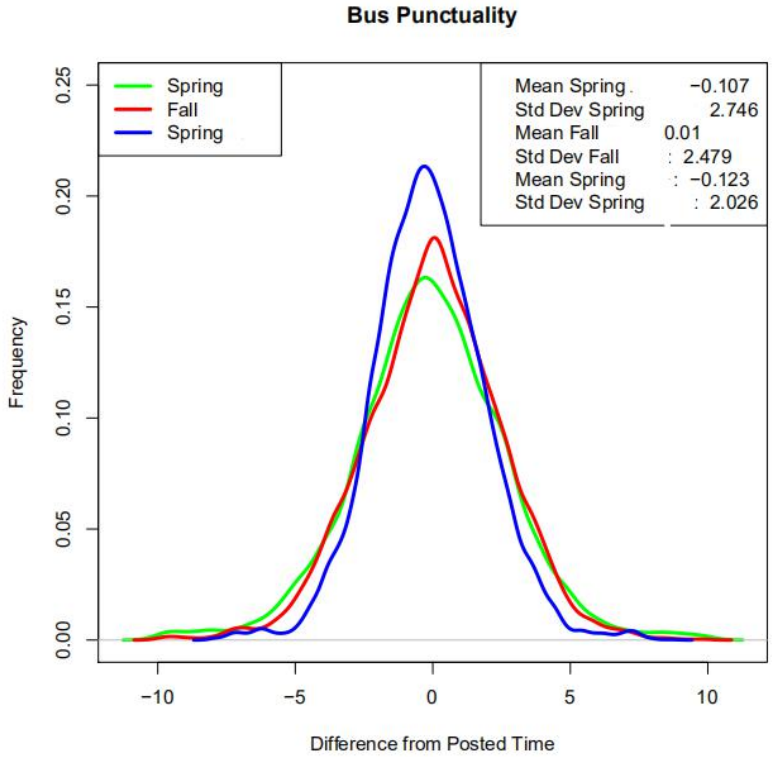
BUSINESS MODEL

FOR THE **WEBSITE**-

- **Total addressable market**- Students, employees, small scale workers who need to go to a particular location on a daliy basis.
- For **shophistacated users**, we have included the service details of **air-conditioned buses** and economy buses separately.
- To solve the problem of over crowded buses, we can propose the Government to increase the frequency of buses.
- Availng public transport is a much **cheaper** alternative and there's transportation **safety** to a great extent.
- We can also propose the Government to convert few lanes into complete bus lane.
- For **feasibility of use**, people can **track** the buses using web application at bus stops.
- Our model has a drawback that it does not capture the constant update of the traffic.
- Our solution can be proved to be better than other proposed ones by the following survey graphs-



This graph shows the frequency of the buses w.r.t the posted time on a particular day.



This graph shows the punctuality of buses for a particular year.

BUSINESS MODEL

FOR THE **ANDROID APP**-

On frequently using the app to avail carpooling facility, **rewards** will be given to user in form of income tax rebate, thus, increasing the market.

- This app is **easy to use** and has a **minimalistic UI** as compared to other sophisticated apps.
- Personal information can be **updated easily** in the app.
- Due to the on going pandemic, our app will only accept **at the most 2** requets for a particular car so as to maintain social distancing.
- For future enhancements, we have planned to-
  - Get real time vehicle data for paid/free service
  - Integrate with a pay service
  - Planned to confirm booking through an email, which will be implemented upon buying server. Upon booking a ride, a random number will be generated which will be sent to the driver and the user.

THANK YOU