GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technical University

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Adani Institute of Infrastructure

Adani Institute of Infrastructure Engineering

A Report On:

"Carpool Commute"

Under the subject of

Design Engineering – 2B

B.E. | Semester – 6 (Information & Communication Technology)

Submitted by:

SR NO	NAME	ENROLMENT NUMBER
1	Samarth Motka	191310132076
2	Krish Nasit	191310132077
3	Nirav Patel	191310132101
4	Yug Raithatha	191310132118

Dr. Vijeta Khare Ma'am

(Faculty Guide)

Dr. Hitesh Chhinkaniwala Sir

(Head of Department)

Academic Year

(2021-2022)

ACKNOWLEDGEMENT

The end result of this project necessitated a great deal of knowledge and assistance from a large number of people, and we are incredibly grateful to have this up and down the fulfilment. We owe them a debt of gratitude for everything we've accomplished, and we won't forget to thank them.

We admire and appreciate our Faculty **Shalu Peshwani Ma'am** and our Internal Guide **Dr. Vijeta Khare Ma'am** for allowing us to work on the project and guiding us.
With a deep sense of gratitude, we'd like to see the value in one another for our partnership and efforts to bring it to a successful conclusion. Sincere gratitude to everyone who has been directly or indirectly involved with this project.

Yours sincerely,

Samarth Motka (191310132076)

Krish Nasit (191310132077)

Nirav Patel (191310132101)

Yug Raithatha (191310132118)

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INTRODUCTION:

Design thinking is all about the ability to solving the problems with the adventure series and results of problems speak for themselves also is an innovation process that uses the designer`s sensibility to find needs and opportunities in order to create new solutions that matter to people. Design engineering process includes:-

1. Check for requirements
2. Find your goals
3. Evaluate the requirements
4. Generate proposals to satisfy needs
5. Evaluate proposals
6. Improve goals and proposals

Regularly, many people travel from their home town to another town for their work or education or other reasons. in this people, we can categorize them into two types, one who has their car and take solo ride and remaining, who travel by public transport or taxi or in other way.

Our First Goal : To make a communication channel that can be used by these two types of people.

Our Second Goal : To find out people who are travelling to same destination town or same route and nearby area.

Our Third Goal : To connect them, so they can travel together and at minimum cost.

Main Concepts includes : Communication, Security , Payment Systems.

LITERATURE SURVEY:

What is Canva?

Canva is a free graphic design platform that allows you to easily create invitations, business cards, flyers, lesson plans, Zoom backgrounds, and more using professionally designed templates.You can even upload your own photos and add them to Canva's templates using a drag and drop interface. It's like having a basic version of Photoshop that's free and doesn't require extensive photo editing knowledge to use.

Canva offers plenty of virtual templates so students can work with a design and add in their own changes. This allows them to focus on the topic at hand without wasting time or energy on getting started with the tool itself. Making a poster, for example, will start by offering templates down the left, then the main image on the right that you can customize. Clicking into this will make a toolbar appear with options to edit – this reacting as you work keeps things minimal and clear throughout.

You can upload your own images and videos, which is ideal when working on a smartphone using the app version. Once completed, you can download the file, share it via lots of social media optimized options, or send to a professional print service to have it printed.

What is Android Studio?

Android Studio is the official integrated development environment (IDE) for Android application development. It is based on the IntelliJ IDEA, a Java integrated development environment for software, and incorporates its code editing and developer tools.

To support application development within the Android operating system, Android Studio uses a Gradle-based build system, emulator, code templates, and Github integration. Every project in Android Studio has one or more modalities with source code and resource files. These modalities include Android app modules, Library modules, and Google App Engine modules.

Android Studio uses an Instant Push feature to push code and resource changes to a running application. A code editor assists the developer with writing code and offering code completion, refraction, and analysis.

Applications built in Android Studio are then compiled into the APK format for submission to the Google Play Store.

The software was first announced at Google I/O in May 2013, and the first stable build was released in December 2014. Android Studio is available for Mac, Windows, and Linux desktop platforms. It replaced Eclipse Android Development Tools (ADT) as the primary IDE for Android application development. Android Studio and the Software Development Kit can be downloaded directly from Google.

PRIOR ART SEARCH:

TITLE: Ride sharing system: a review and methodology

Published in: 5th international conference on recent trends in engineering science and management.

Date of Conference: 9th -10th December 2016

ISBN NO. : 978-93-86171-12-2

Conference Location: Pune, India.

Steps to reduce ill effects of private vehicles are extremely necessary now-a-days. Mass transit system is the best solution if provided efficiently, but many persons do not prefer it because of its lack of door to door service, longer and fixed route and less reliable schedule. So, some new facility or services should be developed to provide a comfortable and reliable service to users and to reduce hazardous effects on environment like pollution, congestion etc. Ride sharing is one of the emerging technologies adopted all over the world, in which users with same origin-destination and time of travel are matched and they share the ride. Different methods, algorithms or models designed to provide ride sharing is summarized in this paper and what changes should be made in traditional ride sharing service is described with methodology.

TITLE: A systematic literature review of ride-sharing platforms, user factors and barriers

Published in: European Transport Research Review 13(61):1-22

Date of Conference: December 2021

DOI: 10.1186/s12544-021-00522-1

Ride-sharing is an innovative on-demand transport service that aims to promote sustainable transport, reduce car utilization, increase vehicle occupancy and public transport ridership. By reviewing ride-sharing studies around the world, this paper aims to map major aspects of ride-sharing, including online platforms, user factors and barriers that affect ride-sharing services, and extract useful insights regarding their successful implementation. A systematic literature review is conducted on scientific publications in English language. Articles are eligible if they report a study on user factors affecting ride-sharing use and/or barriers preventing ride-sharing implementation; ride-sharing online platforms in these articles are also recorded and are further explored through their official websites. A database is built that organizes articles per author, year and location, summarizes online platform attributes, and groups user factors associated with the likelihood to ride-share. The review shows that the term “ride-sharing” is used in the literature for both profit and non-profit ride-sharing services. In total, twenty-nine ride-sharing online platforms are recorded and analyzed according to specific characteristics. Sixteen user factors related to the likelihood to ride-share are recorded and grouped into sociodemographic, location and system factors. While location and system factors are found to follow a pattern among studies, mixed findings are recorded on the relationship between sociodemographic factors and ride-sharing. Factors that may hinder the development of ride-sharing systems are grouped into economic, technological, business, behavioral and regulatory barriers. Opportunities exist to improve the quality of existing ride-sharing services and plan successful new ones. Future research efforts should focus towards studying ride-sharing users' trip purpose (i.e., work, university, shopping, etc.), investigating factors associated to ride-sharing before and after implementation of the service, and perform cross-case studies between cities and countries of the same continent to compare findings.

Topic: A Survey on: Real time Smart Car Pooling and Ride Sharing System using Android Application.

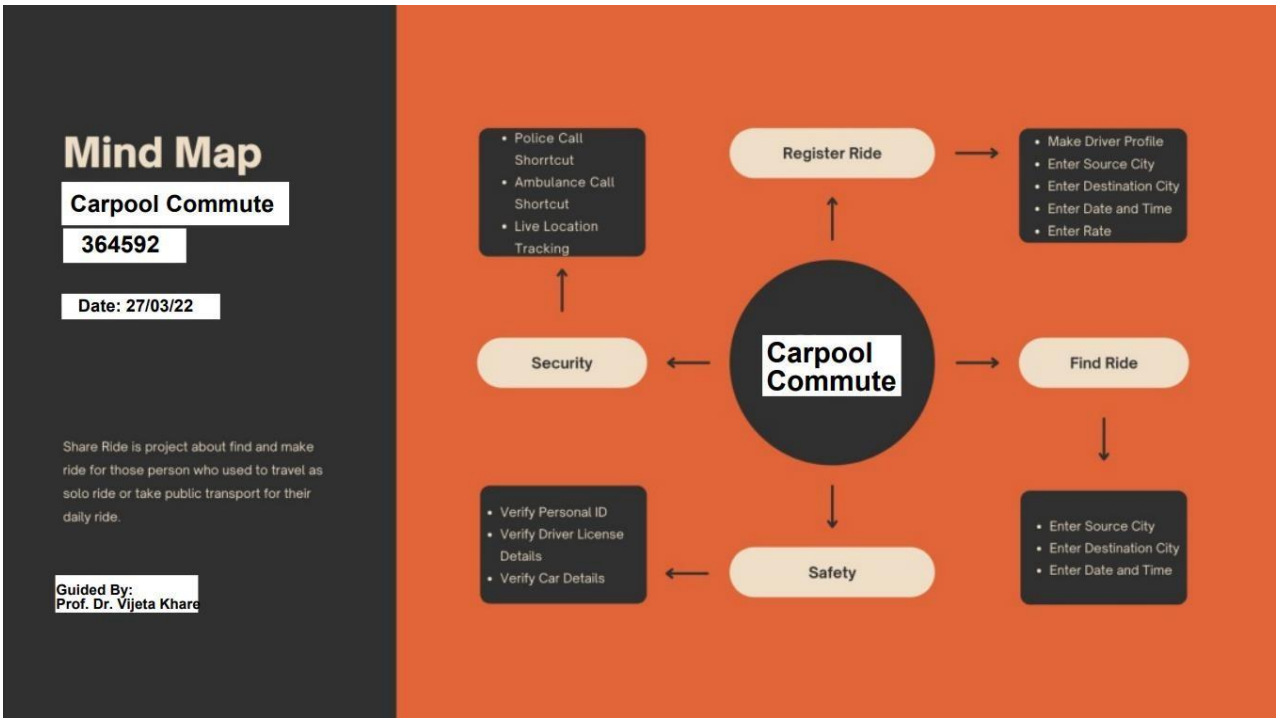
Authors: Akshay Raut, Rushikesh Bhosale, Kalpesh Avhad, Mahesh Swati, Somesh Jadhav.

(E-ISSN 2348-1269, P- ISSN 2349-5138)

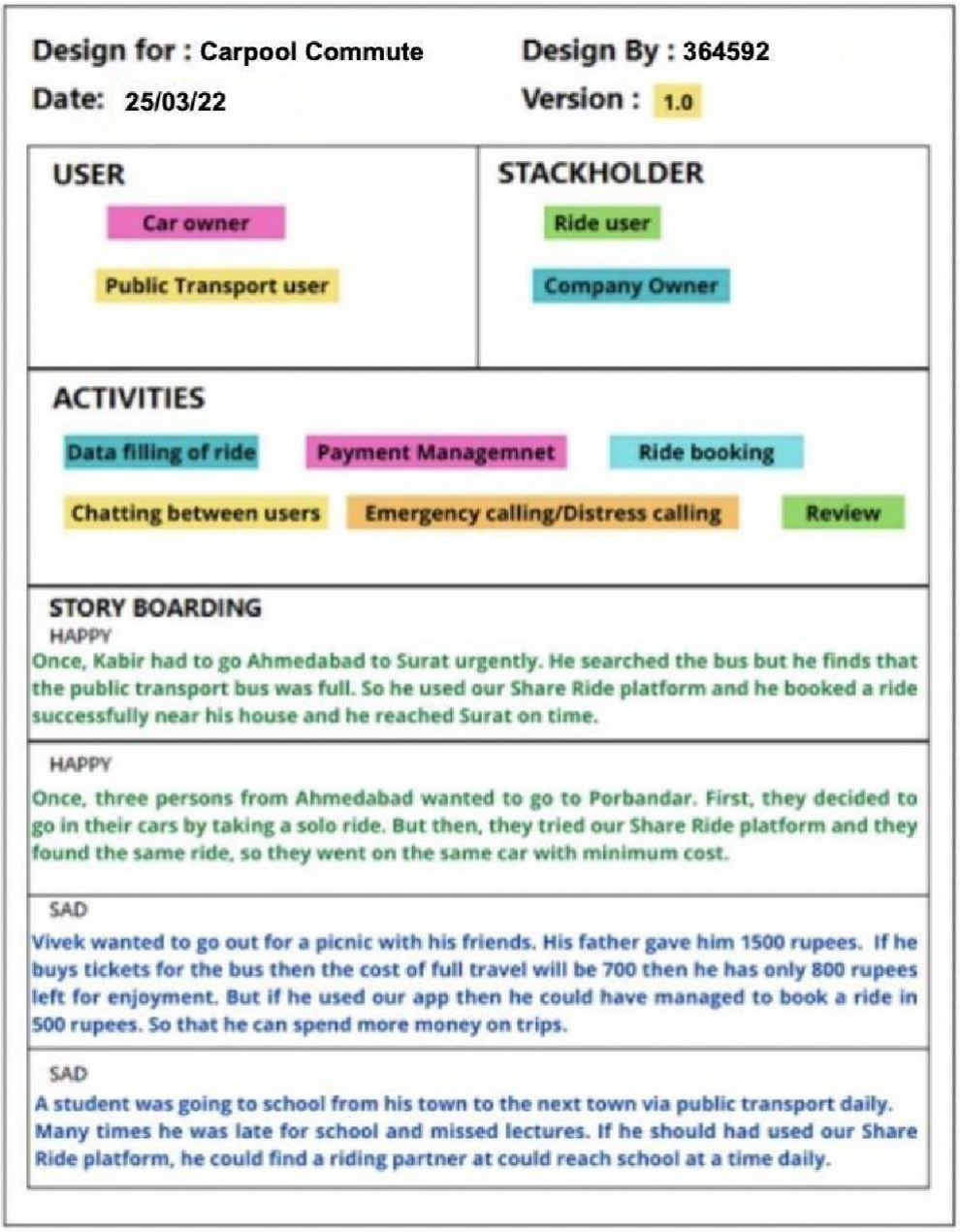
Carpooling also commonly known as car-sharing, ride-sharing and lift sharing, is the sharing of car journeys so that more than one person can travel in a car. With the enormous increase in number of vehicles on road, people around the country especially in metro cities have started facing problem now due to increase in traffic which added an hour or so to their daily travelling time. Carpooling is seen as a more environmentally friendly and sustainable way to travel as sharing journeys reduces carbon emissions, traffic congestion on the roads, and the need for parking spaces. This paper gives a survey of different techniques used by the researchers for carpooling. An abstract view of the proposed system that we are going to implement helps to enable its user a safe and secure way to share cars.

DESIGN THINKING

MINDMAP CANVAS:



Empathy Canvas:



USERS:

Users are the ones who uses our products. The one who needs our product in daily life will definitely buy and use our product.

- Car owners
- Public transport users

STAKEHOLDERS:

Stakeholders are those who invest/can invest in our project.

- Owner of companies
- Ride users

ACTIVITIES:

The activities are the functions performed by our product , it contains all the possible activities performed by our product.

- Data filling of ride
- Ride booking
- Payment management
- Chatting between users
- Emergency calling/ distress calling
- review

STORY BOARDING:

This part contains a healthy story of the users who used this product and who must use our product. There are two happy and two sad stories given below.

HAPPY:

Once , Kabir had to go Ahmedabad to Surat urgently. He searched the bus but he finds that the public transport bus was full. So he used our Share Ride platform and he booked a ride successfully near his house and he reached Surat on time.

HAPPY :

Once, three persons from Ahmedabad wanted to go to porbandar. First they decided to goin their cars by taking a solo ride. But then, they tried our Share-Ride platform and they found the same ride, so they went on the same car with minimum cost.

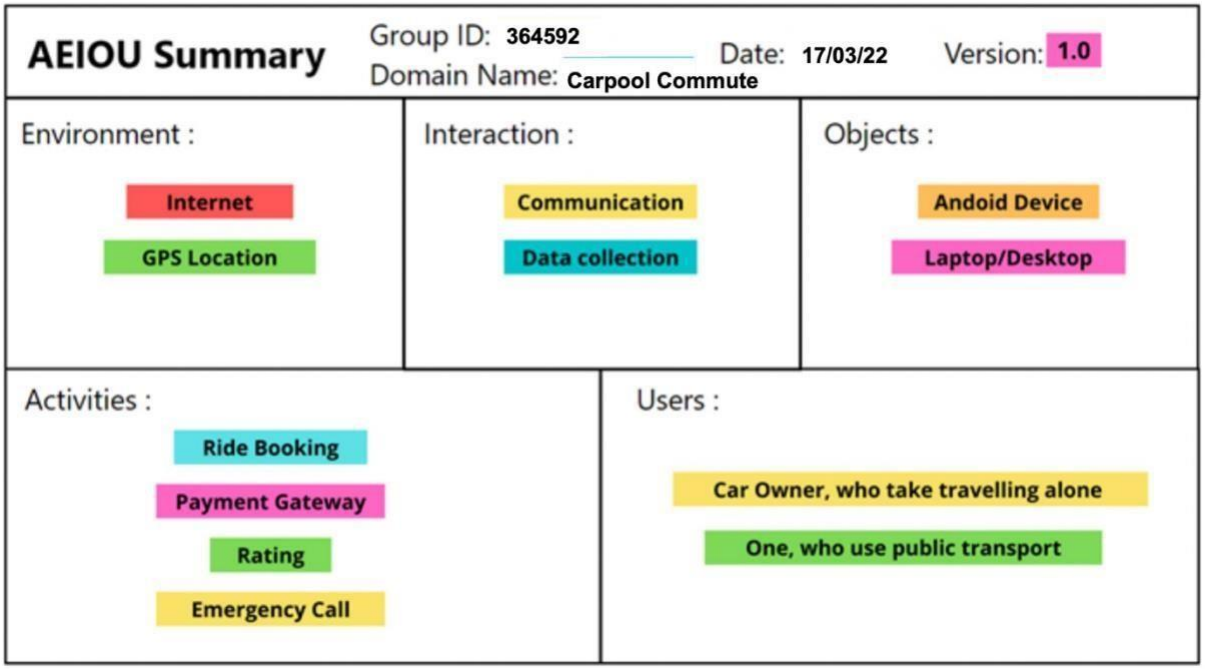
SAD :

Vivek wanted to go out for a picnic with his friends. His father gave him 1500 rupees. If he buys tickets for the bus then the cost of full travel will be 700 then he has only 800 rupees left for enjoyment. But if he used our app then he could have manged to book a ride in 500 rupees. So that he can spend more money on trip.

SAD :

A student was going to school from his town to the next town via public transport daily. Many times he was late for school and missed lectures. If he had used our Share Ride platform, he could find a riding partner and could reach school at time daily.

AEIOU Canvas:



AEIOU is an investigative tool to help interpret observations gathered by ethnographic practices in the field. It is an Observation tool. AEIOU stands for 5 elements to be coded: Activity, Environment, Interaction, Object and User.

ACTIVITIES:

The activities are the functions performed by our product, it contains all the possible activities performed by our product.

- Ride Booking
- Payment Gateway
- Rating
- Emergency call

ENVIRONMENT:

Environment is the type of area where our product is running. It is the conditions of the area where our product is running

- Internet
- GPS location

OBJECTS:

Objects are the devices where we can use our product efficiently

- Android Device
- Laptop/Desktop

USERS:

Users are the ones who uses our products. The one who needs our product in daily life will definitely buy and use our product

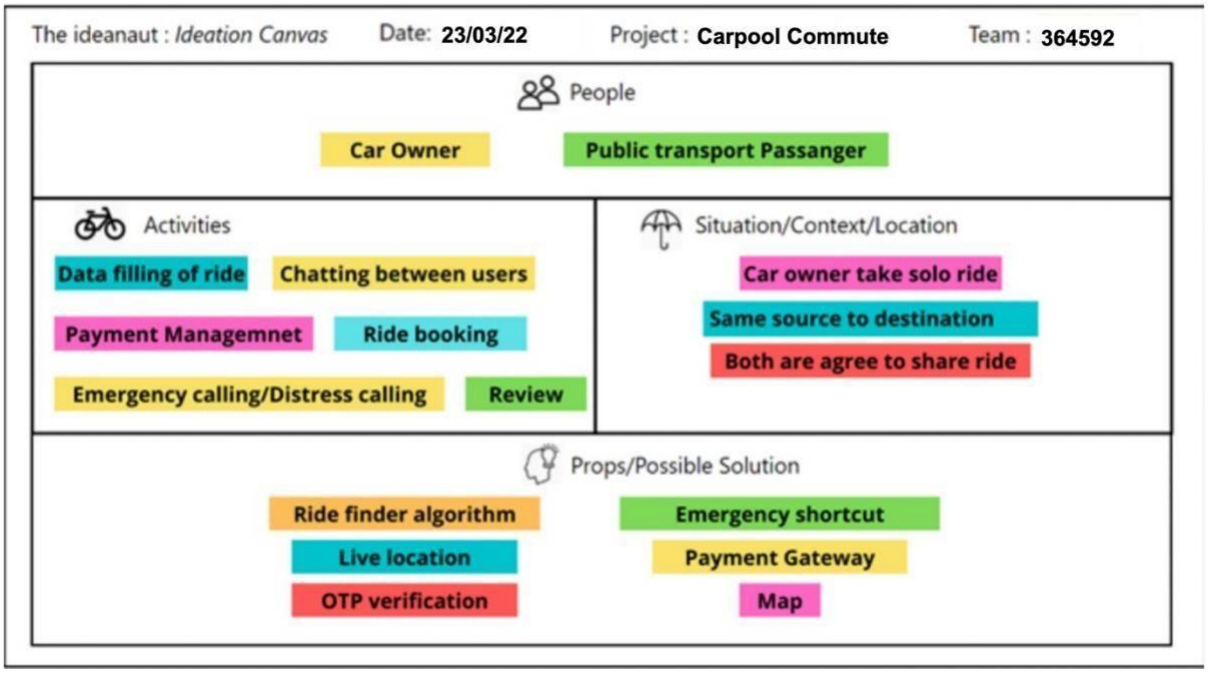
- Car owner who travel alone
- One who use public transport

INTERACTIONS:

Interactions are the functions performed by the user in our application.

- Communication
- Data collection

Ideation Canvas:



PEOPLE

People are the ones who uses our products.

- Car owners
- Public transport passengers

ACTIVITIES

The activities are the functions performed by our product. It contains all the possible activities performed by our app.

- Data filling of ride
- Chatting between users
- Payment Management
- Ride Booking
- Emergency calling/distress calling
- Review

SITUATION/CONTEXT/LOCATION

Situation:

These are the situations when we use Share-Ride app.

- Same source to destination ➢ Both are agree to share ride

Context:

The main users of this product are termed as Context

- Car owner that travel alone
- People who use public transport

Location:

Location is the place where we can use our software

- Where GPS connection available

PROPS/POSSIBLE SOLUTION

Props:

Props are the objects used for our software

- Payment Gateway
- Ride finder algorithm
- Maps

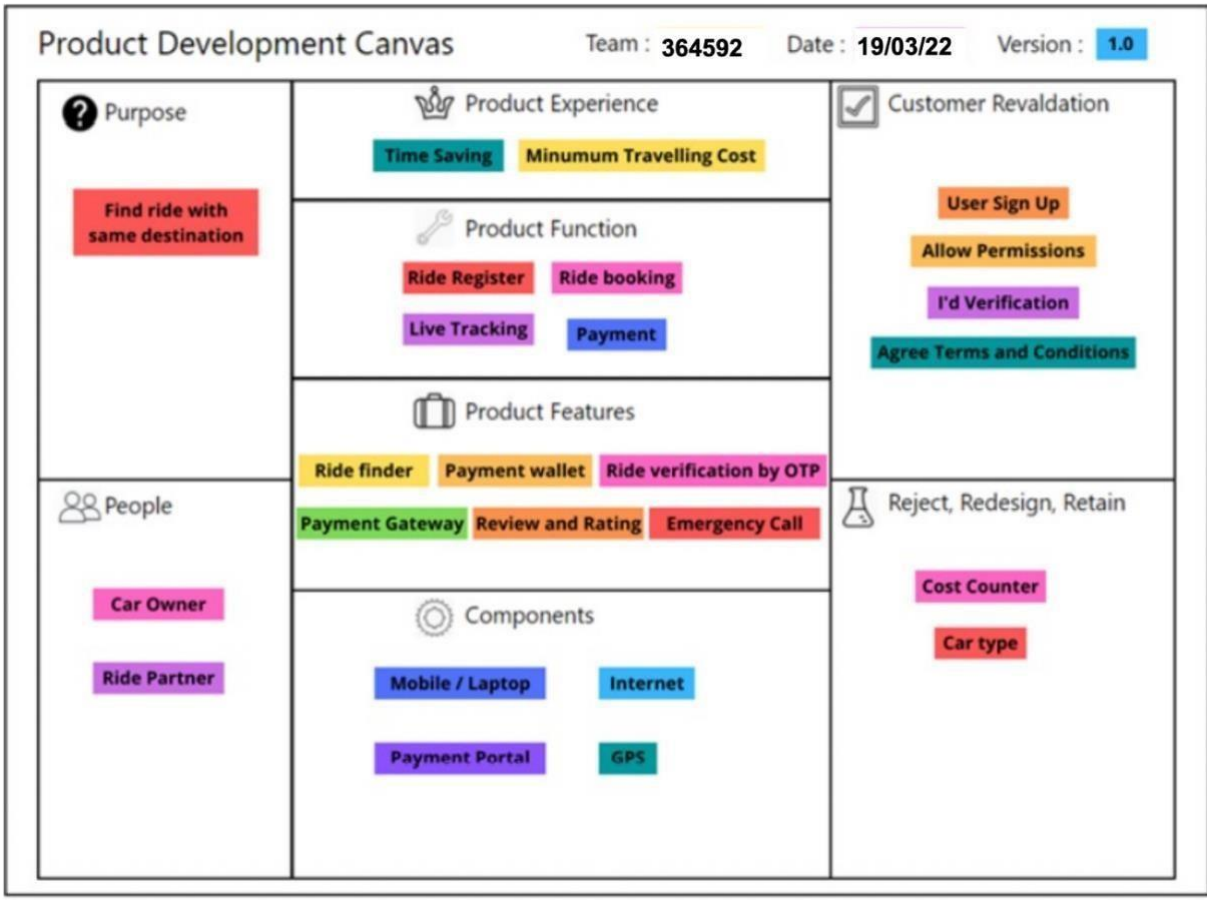
Possible Solutions:

The solutions we use solve our problems using this software

- Live Location
- Emergency Shortcut
- Live location

Product Development Canvas:

Now since, problems have been identified, we will start with the product development canvas. This is the overview of the product we are making. In this we will start building a structure of our product around the needs of our users. The Product Canvas is a strategic product planning tool that allows us to quickly capture, describe, challenge and pivot your product strategy on just single page.



PURPOSE:

Purpose is the main objective of our product

- Find ride for same destination

PEOPLE:

People are the ones who uses our products.

- Car owners
- Ride partners

PRODUCT EXPERIENCE:

Experience is the review of our product by the users using it

- Time Saver
- Minimum travelling cost

PRODUCT FUNCTION:

The main use of our product is termed as product function

- Ride register
- Ride booking
- Live tracking
- payment

PRODUCT FEATURES:

Features define the product. It defines the main purpose and work of our product

- Ride finder
- Payment wallet
- Ride verification by OTP
- Payment Gateway
- Review and rating
- Emergency call

COMPONENTS:

The main components used for our software is termed as component

- Mobile/Laptop
- internet
- GPS ➢ Payment portal
-

CUSTOMER REVALIDATION:

The overall review of our product from the customer

- User sign up
- Allow permissions
- I'd done verification
- Agree terms and conditions

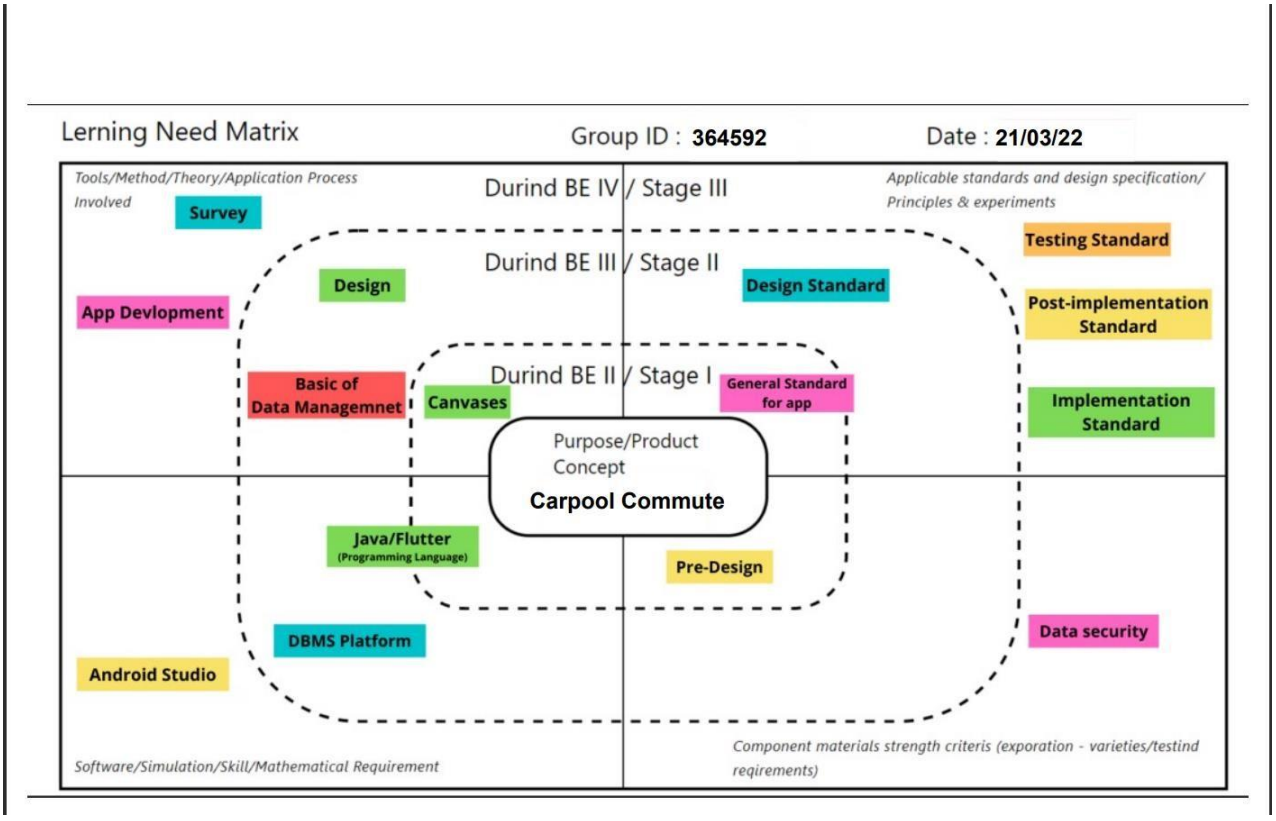
Redesign/Reject/Retain:

Redesign product for better performance

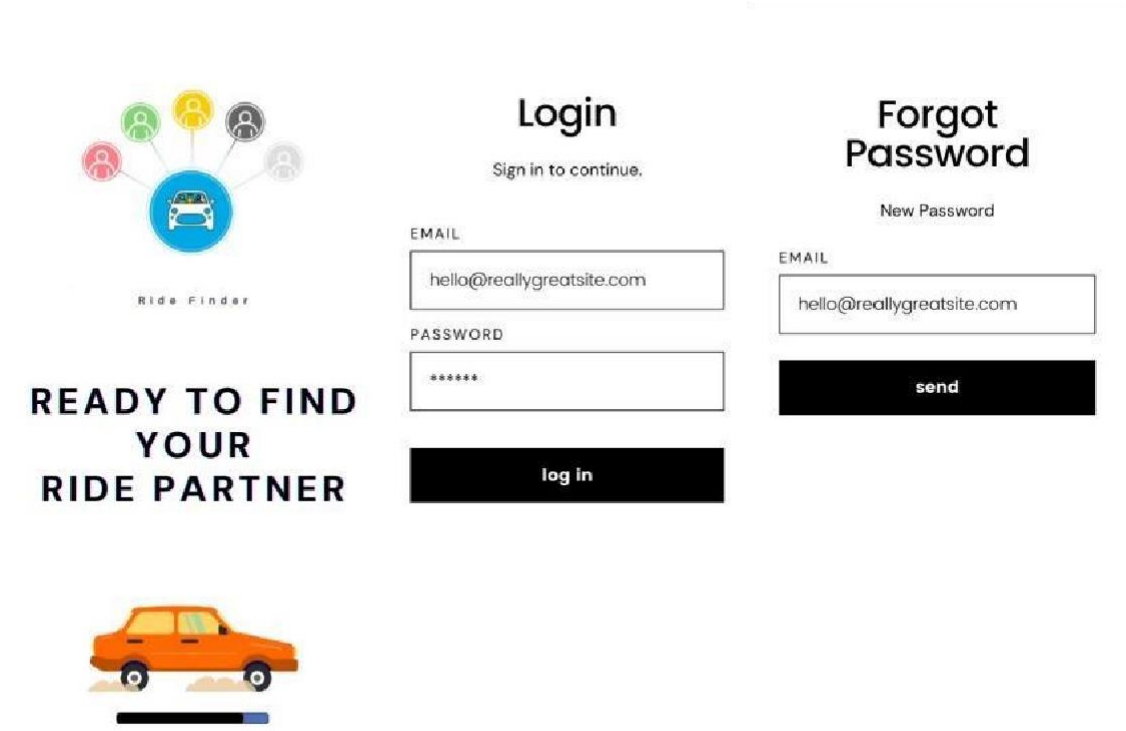
- Cost counter
- Car type

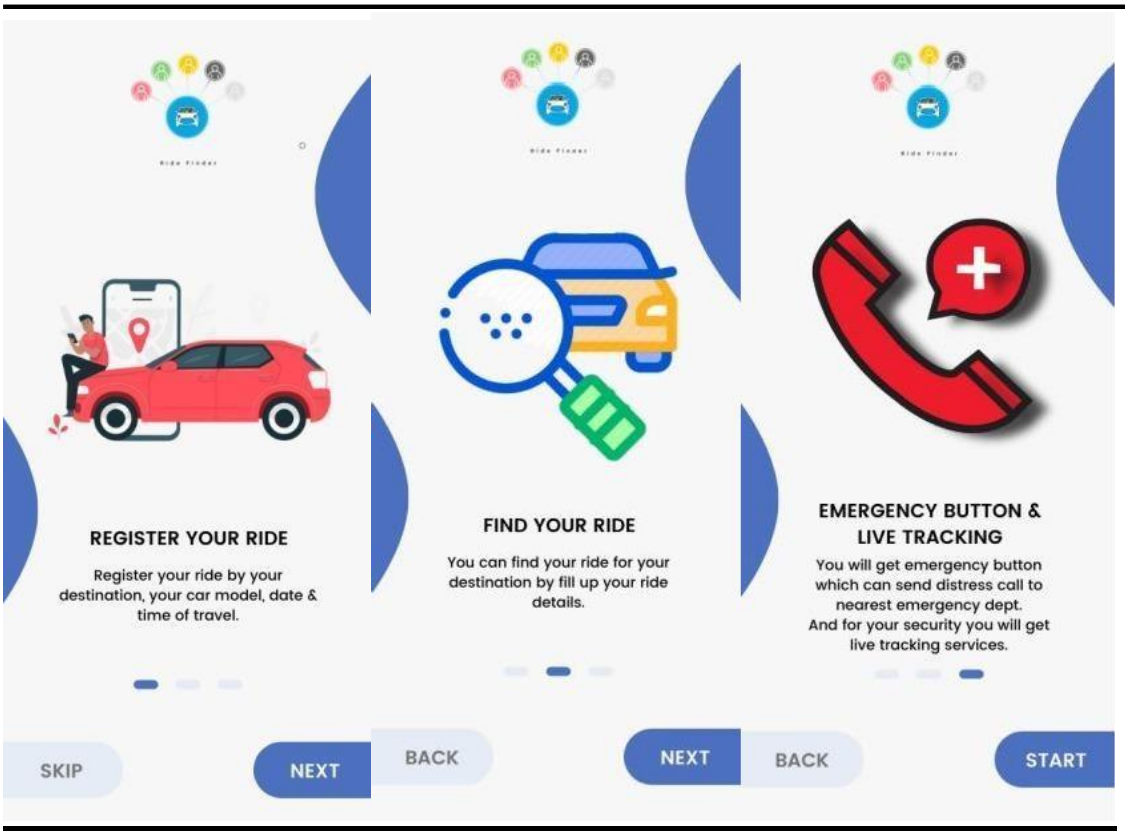
LEARNING NEED MATRIX:

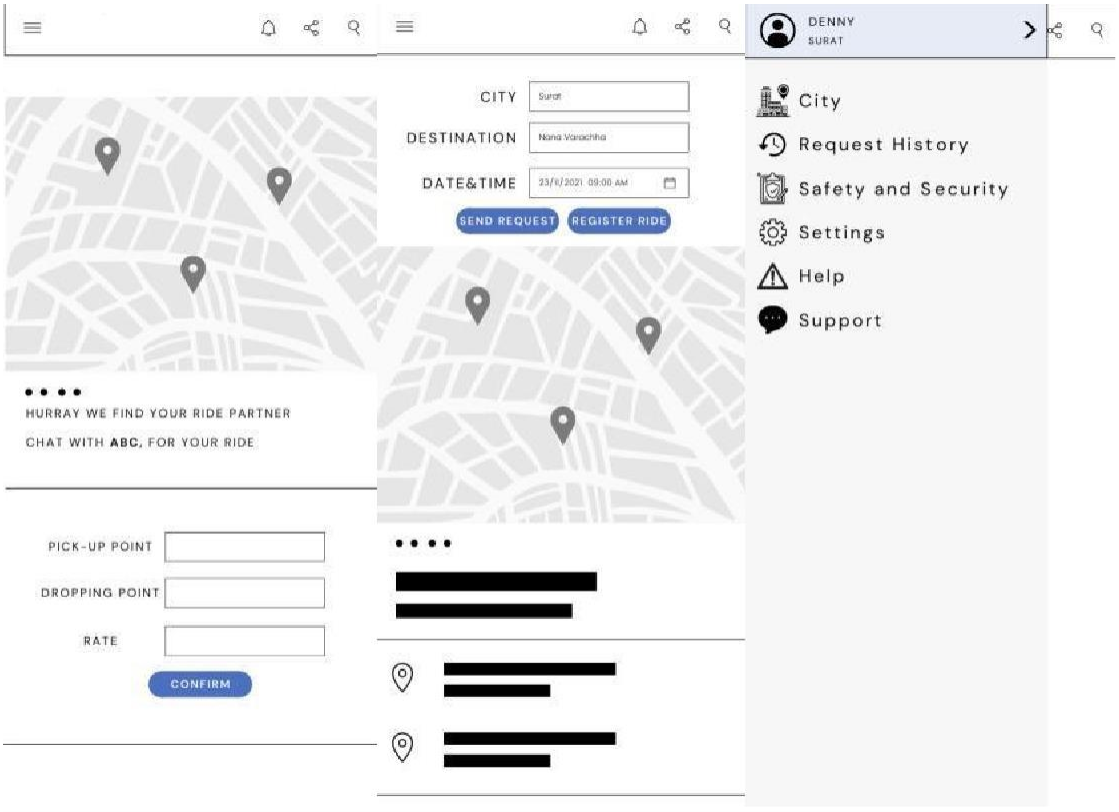
The purpose of LNM is to identify the requirements of learning among the team members. When a new product is to be designed, there must be some pre requisite required to be learned and applied in order to fetch something new. The LNM contains a quadratic layout. From center it needs to have mention of learning/exploring requirements in each quadrant representing a specific type of skill acquisition.

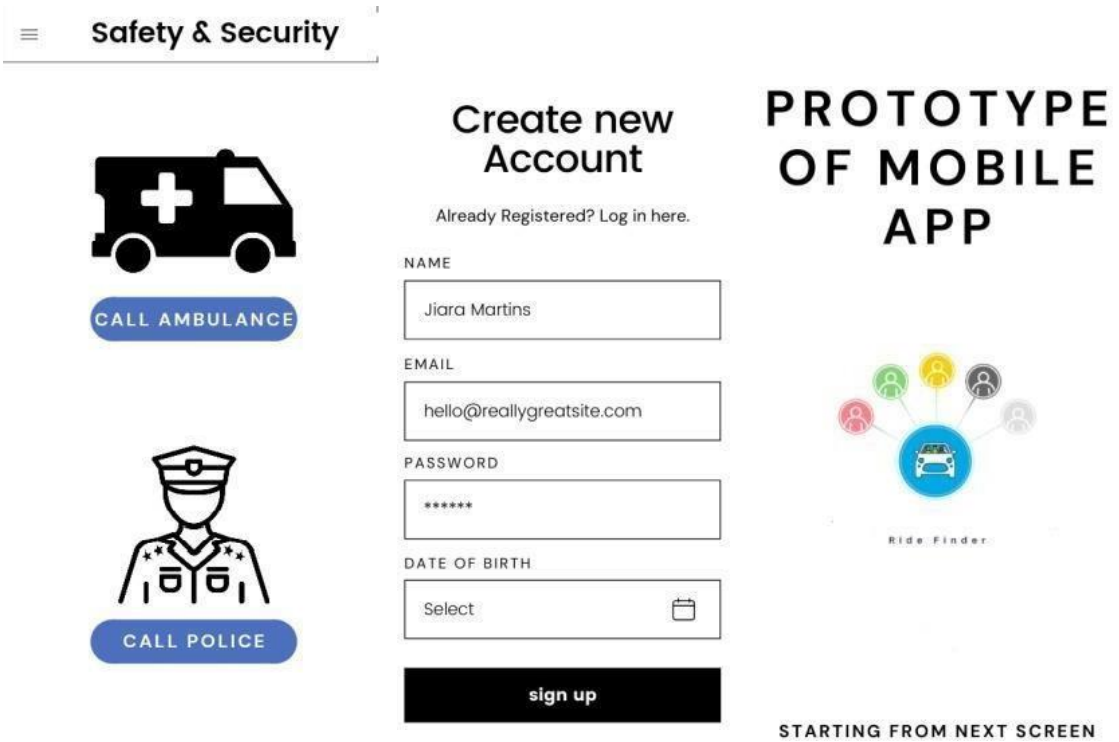


Prototype:


Ride Finder
READY TO FIND YOUR RIDE PARTNER
Login
Sign in to continue.
EMAIL
hello@reallygreatsite.com
PASSWORD
******
log in
Forgot Password
New Password
EMAIL
hello@reallygreatsite.com
send


REGISTER YOUR RIDE
Register your ride by your destination, your car model, date & time of travel.
SKIP
NEXT
FIND YOUR RIDE
You can find your ride for your destination by fill up your ride details.
BACK
NEXT
EMERGENCY BUTTON & LIVE TRACKING
You will get emergency button which can send distress call to nearest emergency dept.
And for your security you will get live tracking services.
BACK
START


CITY
Surat
DESTINATION
Nana Varachha
DATE&TIME
23/6/2021 09:00 AM
SEND REQUEST
REGISTER RIDE
DENNY
SURAT
City
Request History
Safety and Security
Settings
Help
Support
HURRAY WE FIND YOUR RIDE PARTNER
CHAT WITH ABC, FOR YOUR RIDE
PICK-UP POINT
DROPPING POINT
RATE
CONFIRM


Safety & Security
CALL AMBULANCE
CALL POLICE
Create new Account
Already Registered? Log in here.
NAME
Jiara Martins
EMAIL
hello@reallygreatsite.com
PASSWORD
******
DATE OF BIRTH
Select
sign up
PROTOTYPE OF MOBILE APP
Ride Finder
STARTING FROM NEXT SCREEN

Conclusion:

We think that as already so many vehicles are running which damages the earth atmosphere , through our idea we want to implement a carpool way of life which can help in reducing vehicles running on road which directly leads to less pollution as customer can share rides with each other. We can make this a business model similar to ola, uber.

Plagiarism: