

• BORED CODERS •

POST PANDEMIC CROWD SAFETY



FINAL YEAR PROJECT
GROUP G21

OUR TEAM

01

PRANAV TANEJA (Team Leader - 2817089)

Designated with all the User Interface Management.
Deploying the Apps to various platforms
(Android, iOS, PWA, Windows App, Linux & Mac OS)
Fetching User Locations from user's device

02

MANAN ARORA (Team Member - 2817023)

Designated with all the backend work related to
Algorithm Implementation
Big Data Analysis
Server Management

03

ABHAY MENDIRATTA (Team Member - 2817037)

He will be helping us with managing Datasets
Indexing all the fetched data locations to a
database (PostgreSQL)



WHY CROWD SAFETY?

As we cant disrupt the economy further, everything has to get back to the track, and the virus is nowhere near its termination hence we need to find a suffice method that can ensure the safety of the general public.

WHO'S AT RISK:

- The world is going through one of the worst pandemics ever seen.
- After concurrent lock-downs as the government is easing out, more and more people are heading towards the streets and are at the verge of risking their lives



Know the **PROJECT**

Initially

- Initially, we are aiming to create an application that crowdsources data and alert people about the areas where the crowd is denser and could potentially be risky to travel via.

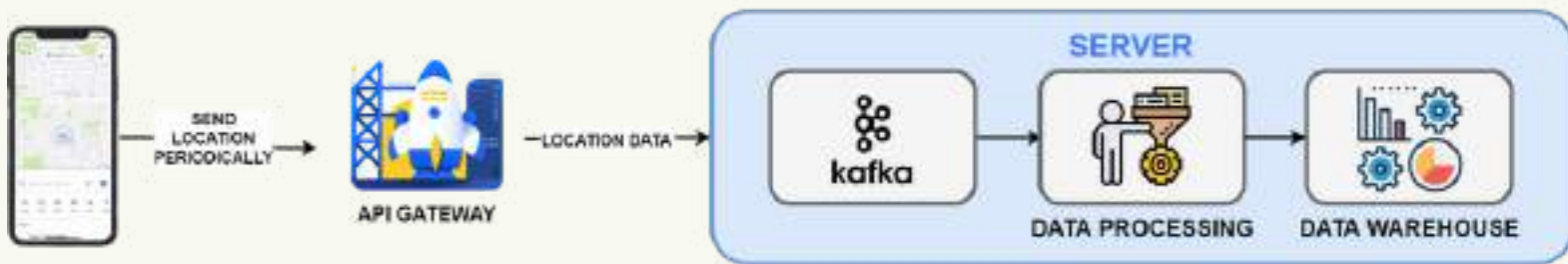
Future Advancements:

- In future, the system will automatically detect and provide the safest path from source to destination. Hence controlling the spread in a better way and saving more lives as a result.
- The app presents a minimalistic design pattern that enables everyone to understand and use the application with ease

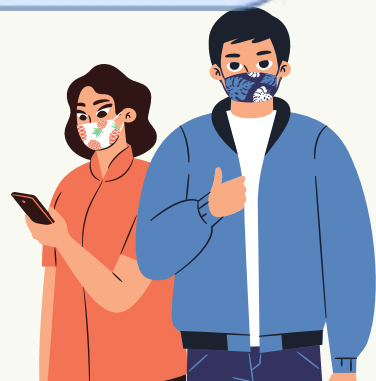
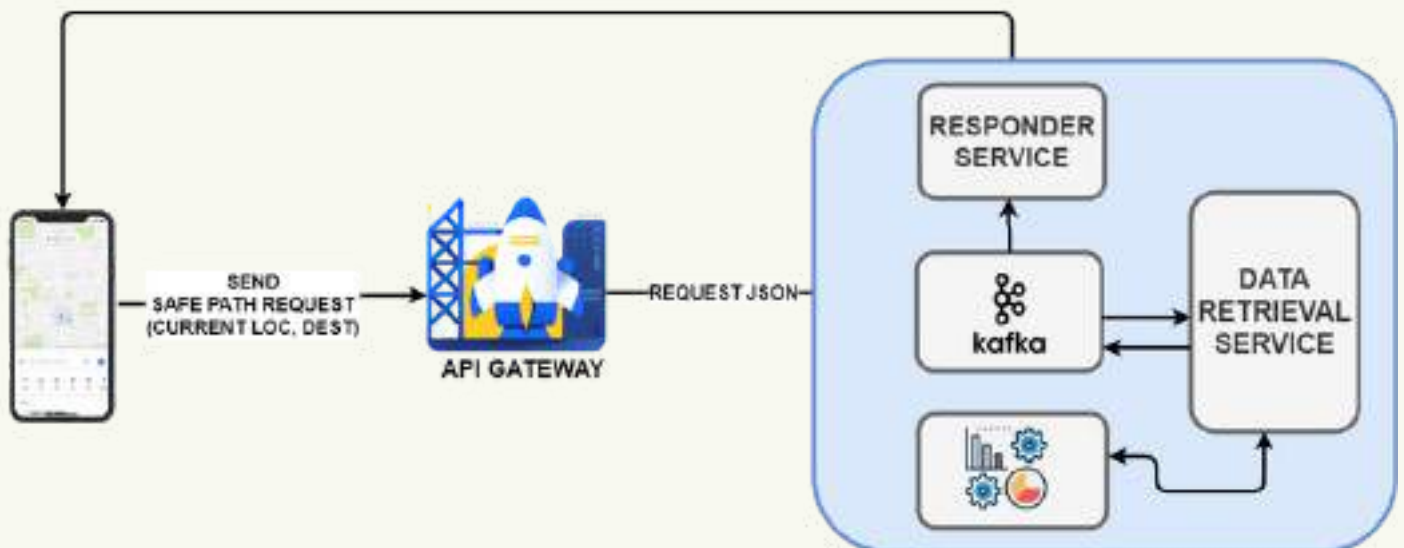


SYSTEM ARCHITECTURE

DATA GENERATION PIPELINE



DATA RETRIEVAL PIPELINE



Tech Stack !



Flutter



Flask



PostgreSQL



python™



docker

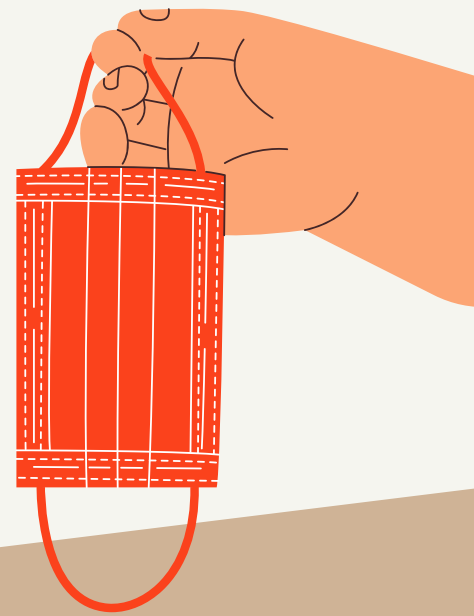


APACHE
kafka®



#StopTheSpread

How does the system work ?



Collecting Information

The system works on the principle of crowdsourcing data from the users by fetching their current location hence making a collective information source and calculating population density of that region



Providing Results

The user is served the data via an app where they can select the radius, and the app points out the areas to avoid based on the evident results.



In Future:

Later on, the user will be able to enter the source and destination, and the app yields the "SAFEST ROUTE" concerning the COVID-19 Situation taking use of crowdsourced data and open-sourced government datasets.



WHAT ARE THE CHALLENGES FACED WHILE DEVELOPING SUCH SYSTEM?

Accurate Geo-Location

- Even if the user allows the location services, they might not be providing the accurate location-data based on the permission they agreed upon.

Crowdsourcing

- Enough users need to use the app so that the data collected is meaningful.

Privacy and Security

- Since the app collects the data about the location, the system should be very secure and the users should know everything about their data. That is, which data is captured and where is it stored.

Scalability

- Handling millions of live requests at a time that means handling Terabytes of data per second could pose a problem.

Usability

- The App's UI needs to be simple, so that people of every level of technical soundness can benefit from it.

DURING 7TH SEMESTER

CORE FUNCTIONALITY

Functionality	Description	Done By
Data Collection	Every user that installs the app will provide the geo-location data which will be sent to the server to be analyzed	Pranav
Organizing Data for efficient processing	Entire location data will be stored in the "DATA WAREHOUSE" to make it easier for the efficient retrieval of the data.	Manan & Abhay
Detecting Crowded Zones	The organized data is further retrieved and algorithmically analyzed for detecting the hazardous zones.	Manan

SPECIAL FUNCTIONALITY

Functionality	Description	Done By
Minimal User Interface	The User should not be bogged with plethora of options but what he wants to see.	Pranav
Scalable	The back-end server will be extremely scalable to handle humongous amount of users.	Manan & Abhay
Cross-Platform	By using Flutter Framework we can manage to develop our product on multiple platforms with single code-base.	Pranav

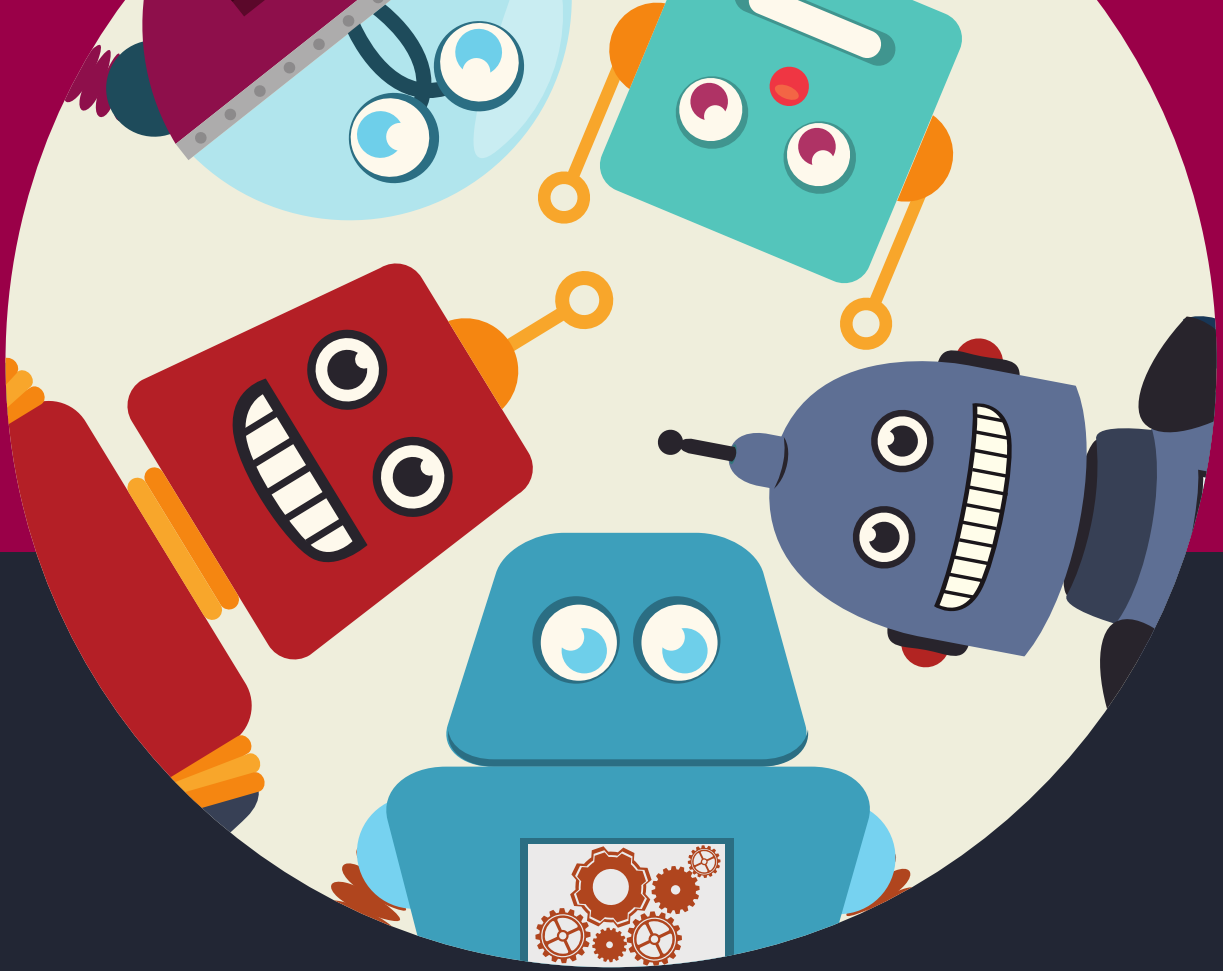
DURING 8TH SEMESTER

CORE FUNCTIONALITY

Functionality	Description	Done By
Safest Route Detection	The app in future releases will be able to provide the safest route between a marked source and destination based on the COVID-19 Scenario.	Manan
Dynamic Interface	The fetched results are shown in a interactive way so that user is easily able to follow the provided route.	Pranav

SPECIAL FUNCTIONALITY

Functionality	Description	Done By
Safety Tips	The app will provide periodic safety tips, for welfare of users.	Pranav
Voice Operated	The product will be voice operated for the ease of access of users.	Manan & Pranav



Courtesy - Bored Coders

THANKYOU

**PRANAV
TANEJA**

**ABHAY
MENDIRATTA**

**MANAN
ARORA**

