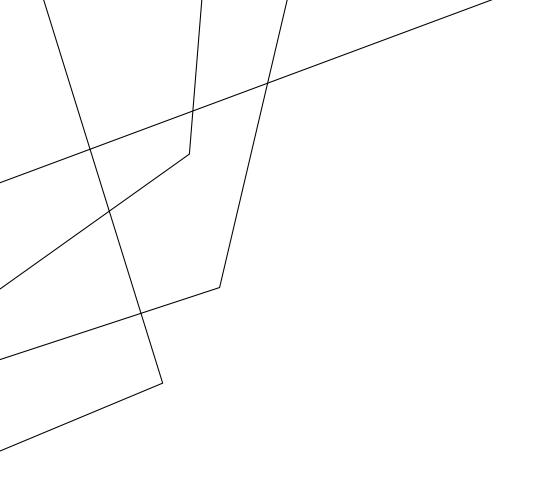


## PROJECT DEFINITION:

The project involves integrating IoT sensors into public transportation vehicles to monitor ridership, track locations, and predict arrival times. The goal is to provide real-time transit information to the public through a public platform, enhancing the efficiency and quality of public transportation services. This project includes defining objectives, designing the IoT sensor system, developing the real-time transit information platform, and integrating them using IoT technology and Python.



#### DESIGN THINKING:

1. Project Objectives

•

2. IoT Sensor Design

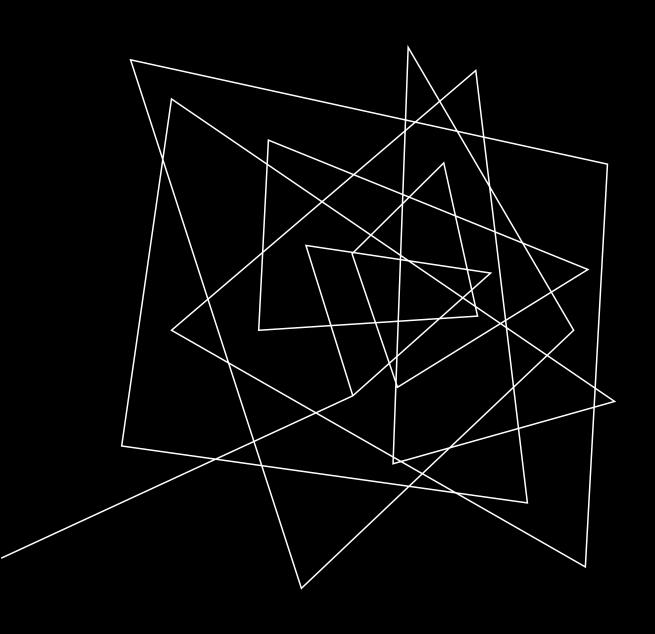
.

3. Real-Time Transit Information Platform

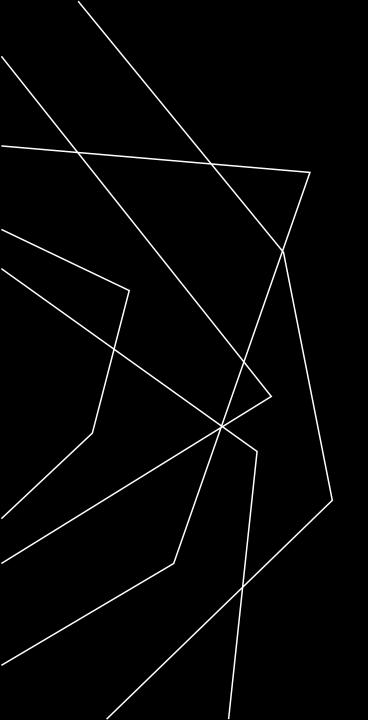
•

4. Integration Approach

.



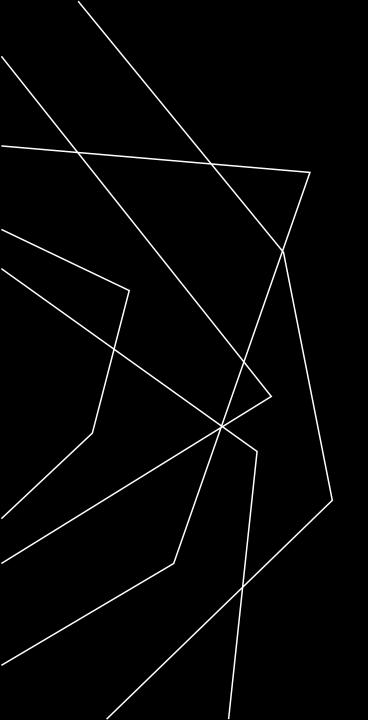
#### PROJECT OBJECTIVES



### 1 REAL-TIME TRANSIT INFORMATION:

•Objective: Provide passengers with real-time information about the current location and status of public transportation vehicles.

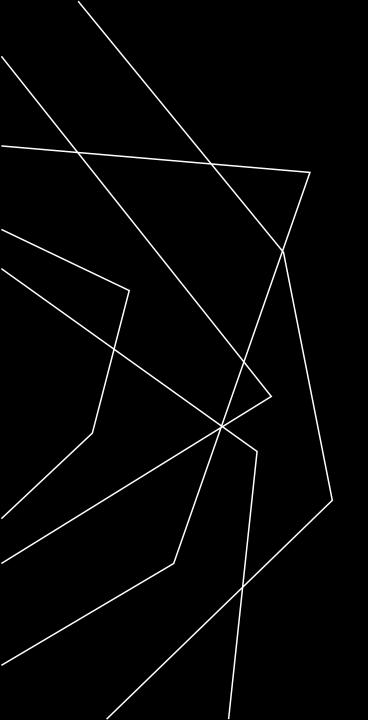
•Purpose: To enhance passenger convenience, reduce wait times, and improve the overall public transportation experience by allowing passengers to plan their trips more effectively.



# 2. ARRIVAL TIME PREDICTION:

•Objective: Predict and display estimated arrival times for public transportation vehicles at various stops.

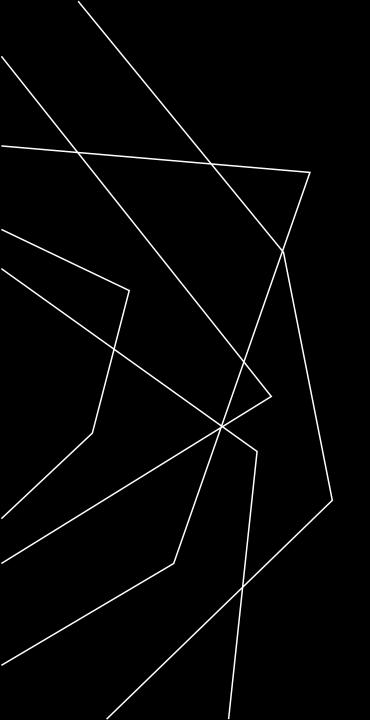
•Purpose: To enable passengers to plan their journeys more accurately and reduce uncertainty about when the next vehicle will arrive, thereby improving the reliability of public transportation.



# 3. RIDERSHIP MONITORING:

•Objective: Collect data on the number of passengers boarding and alighting at each stop and on each vehicle.

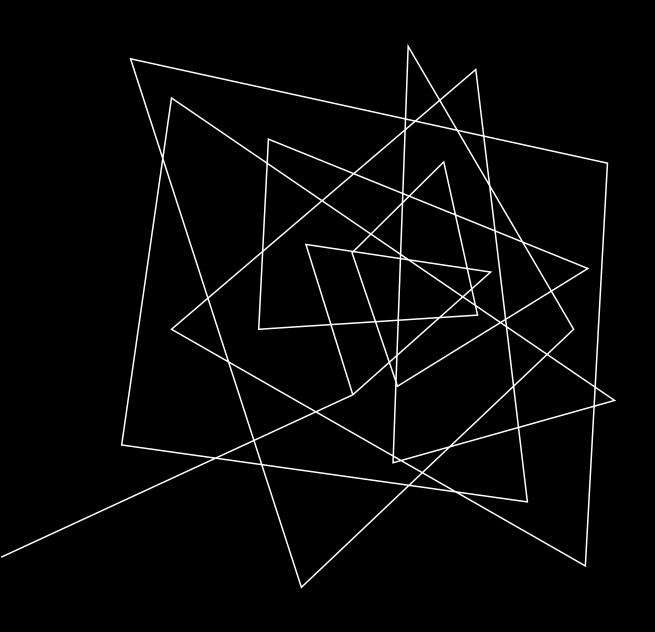
•Purpose: To gather valuable insights into ridership patterns, demand, and peak hours, which can inform service optimization, scheduling, and resource allocation.



# 4. ENHANCED PUBLIC TRANSPORTATION SERVICES:

•Objective: Improve the overall quality and efficiency of public transportation services.

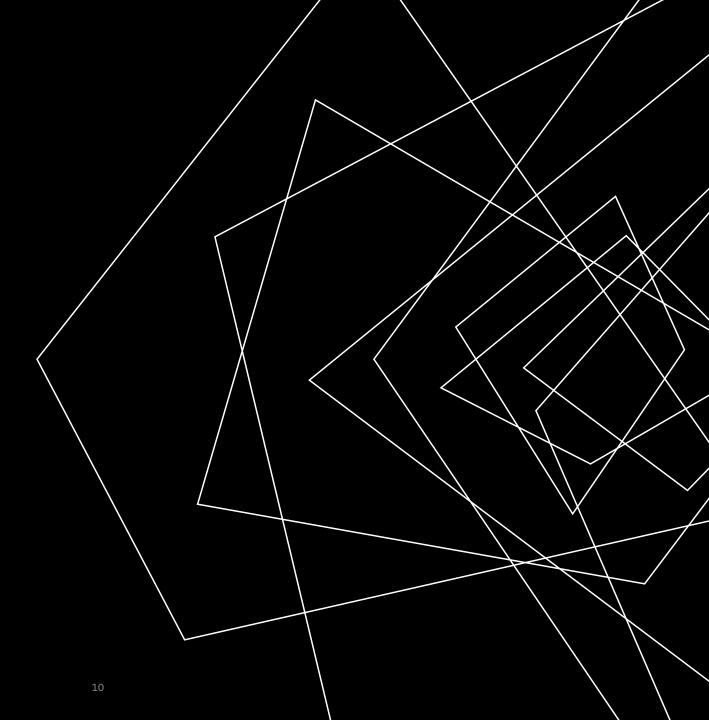
•Purpose: By integrating IoT sensors and providing realtime information, the project aims to enhance the public transportation experience, increase ridership, reduce congestion, and contribute to sustainable urban mobility.



#### IOT SENSOR DESIGN

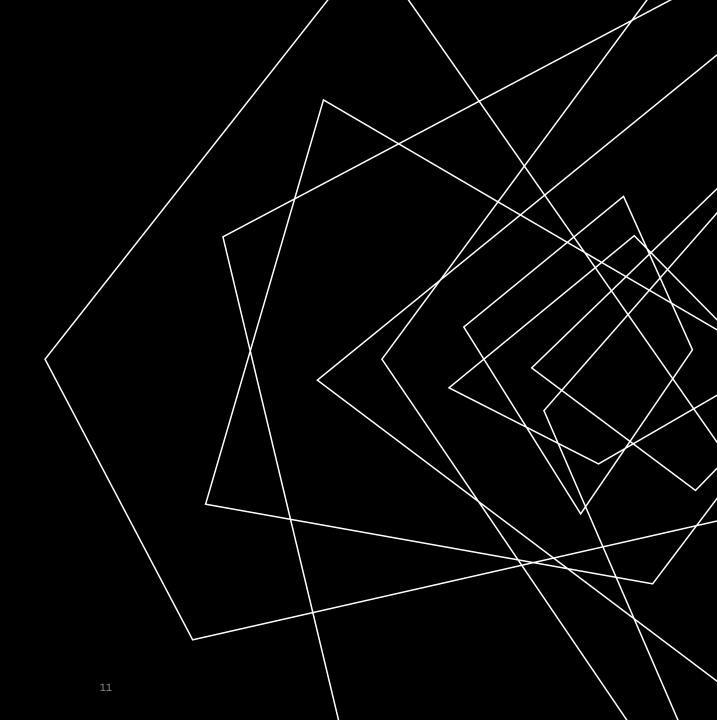
## 1. IOT SENSORS AND HARDWARE:

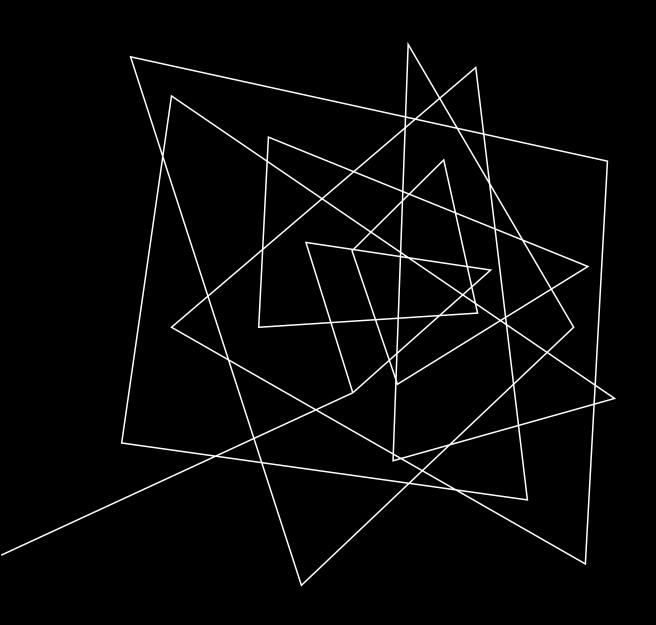
- GPS Sensors
- **A** Passenger Counting Sensors
- Communication Modules
- Microcontrollers/Embedded Systems
- Power Supply Units



# 2. DATA PROCESSING AND STORAGE:

- Server/Cloud Infrastructure
- Database
- Data Processing Software





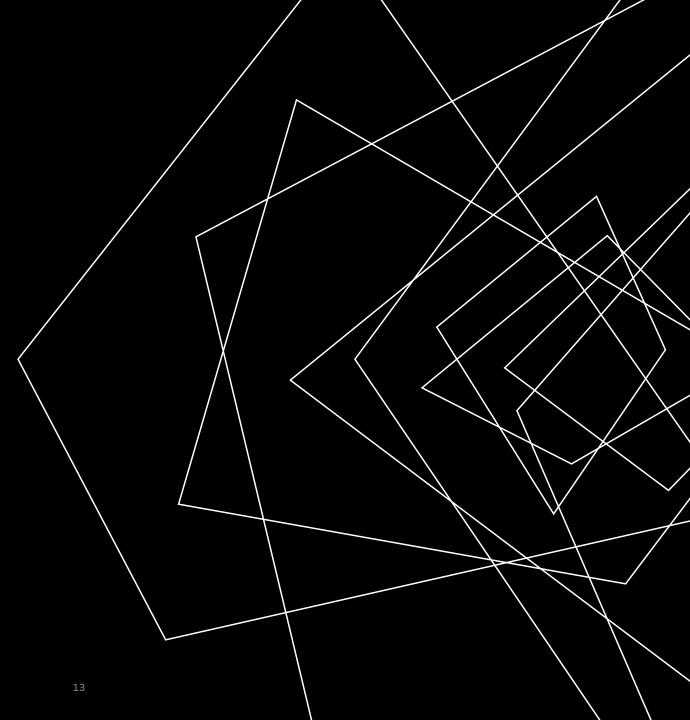
# REAL-TIME TRANSIT INFORMATION PLATFORM

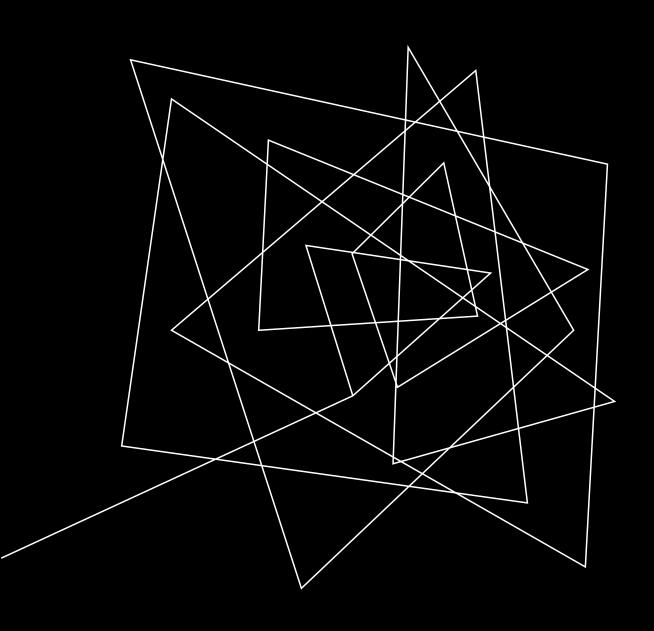
# REAL-TIME TRANSIT INFORMATION PLATFORM:

**Web Development Tools:** Such as Python for backend development and HTML/CSS/JavaScript for the front-end user interface.

(OR)

**Mobile App Development Tools:** If you plan to offer a mobile app for passengers.





#### INTEGRATION APPROACH

## INTEGRATION APPROACH

- Choose the required sensor and install it.
- Data Collection and Transmission: Collect the data from the microcontrolled and export through a interface by using some of the protocols
- Real-Time Transit Information Platform:
   Retrieve the exploited data and integrate in the platform like mobile or web

