**PUBLIC TRANSPORT OPTIMIZATION**

**IoT – PHASE – 1**

**PROBLEM DEFINITION AND DESIGN THINKING**

**Problem Definition:**

-->Having to wait longer duration for public transports.

-->Having to stand through the ride due to unavailability of seats.

**Project (Potential solution):**

-->The project mainly focuses on smooth public transportation via IoT devices and practical implementation for the same.

-->It can be done by installing motion sensors for detecting the available seats, gps for tracking where the particular vehicle is using accelerometers.

-->These sensors alert the user of the application or web page, the passenger count, number of available seats and detection of the position of the vehicle in real-time.

**Design Thinking:**

Objectives:

--> GPS installation.

--> Passenger count.

--> Position detection.

IoT sensor design:

Deployment includes-

-->Motion sensors for detecting count of passengers.

-->Accelerometer sensors for detecting the position of the public vehicle.

-->GPS for mapping and traffic analysis.

-->Ultrasonic sensor for transmitting information on wide range.

-->Database for log of occurrences from the time of installation for later reference.

**Real-Time Transit Information Platform:**

Web or Application design:

-->A navigation bar for each attribute of the design

Attributes include:

--> Position detection.

--> Traffic analysis.

--> Passenger count for seat availability.

--> Help section.

-->Each toggle to individual section where the user gets a detailed information on the particular attribute.

-->An attractive and easy to access web design for smooth surfing.

-->A feedback section for further development of the service.

**Integration Approach:**

-->Installation of Gateways - for long-range communication.

-->Cloud Applications - converts raw data into useful information.

-->User interface - to connect Applications or webpages with the IoT devices.

-->A typical wireless communication includes:

-->Coordinator.

-->Router.

-->End-point.