TRAFFIC MANAGEMENT SYSTEM

PHASE 1: PROJECT DEFINITION AND DESIGN THINKING

PROJECT DEFINITION: The project involves using IoT devices and data analytics to monitor traffic flow and congestion in real-time, providing commuters with access to this information through a public platform or mobile apps. The objective is to help commuters make informed decisions about their routes and alleviate traffic congestion. This project includes defining objectives, designing the IoT traffic monitoring system, developing the traffic information platform, and integrating them using IoT technology and python.

DESIGN THINKING:

1. PROJECT OBJECTIVES:

- **Define objectives such as real-time traffic monitoring:**

    - Estimation of traffic bulkiness performed using real time video feed.
    - Vehicle recognition in order to differentiate between emergency and non-emergency vehicles.
    - The system proposed relies on the efficient det lite model, which later provides output in order to manage light switching for each lane.

- **Congestion detection:**

    - The only way a sender can guess that congestion has happened is the need to retransmit a segment.
    - Retransmission is needed to recover a missing packet that is assumed to have been dropped by a router due to congestion.

- **Route optimization:**

    - Route optimization is the process of planning the fastest and most cost-effective way for your mobile field service workers to get from one appointment to another.

2. IoT SENSOR DESIGN:

- **Plan the deployment of IoT devices (sensors) to monitor traffic flow and congestion:**

    - Sensors and cameras are deployed across cities to monitor vehicle movement and congestion levels.

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3. REAL-TIME TRANSIT INFORMATION PLATFORM:

- o **Design a web-based platform and mobile apps to display real-time traffic information to the public:**
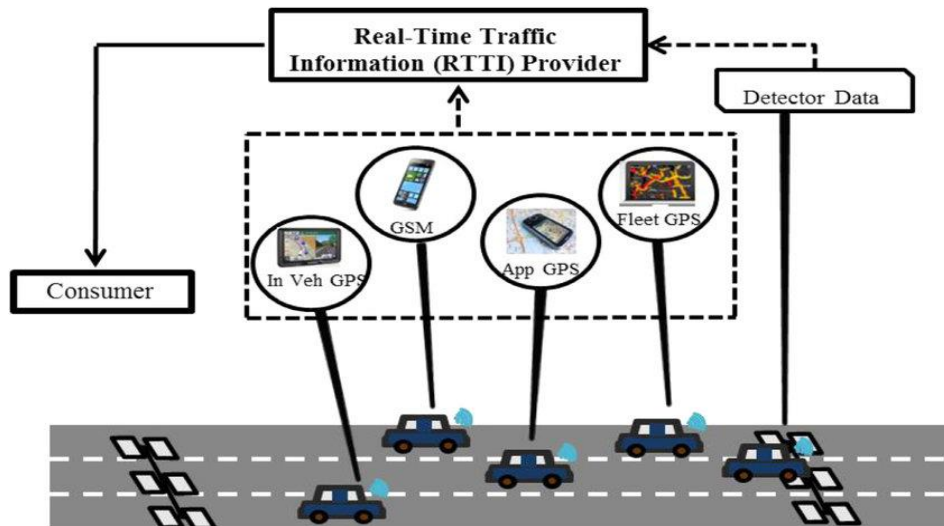
- ➢ Real time traffic information helps you to keep a check on the traffic situation so that you can better plan your route.

4. INTEGRATION APPROACH:

- o **Design a web-based platform and mobile apps to display real-time traffic information to the public:**

  - ➢ Data is available on the TomTom map or via openLR format for map-agnostic delivery.
  - ➢ When your website sends or receives information from another application, system, or website.