**PROJECT 1 : TRAFFIC MANAGEMENT SYSTEM**

**PHASE 1: PROBLEM DEFINITION AND DESIGN THINKING**

**PROJECT DEFINITION:** A traffic management system is a comprehensive infrastructure and software solution designed to optimize the flow of vehicular and pedestrian traffic in urban areas. It encompasses real-time monitoring, intelligent traffic signal control, data analysis, and communication networks to enhance safety, reduce congestion, and improve overall transportation efficiency. By leveraging sensors, cameras, and advanced algorithms, it aims to provide adaptive traffic signal adjustments, route guidance, and incident detection to minimize travel time, fuel consumption, and emissions while ensuring a smooth and safe transportation experience for all road users. The system's goal is to enhance urban mobility and reduce the environmental impact of transportation.

**DESIGN THINKING:**

**1. Empathize:**

- Understand commuters' pain points, such as congestion and delays, through surveys and interviews.

- Gather data on traffic patterns and accident-prone areas to identify critical issues.

**2. Define:**

- Clearly define the objectives of the traffic management system, such as reducing commute times and enhancing safety.

- Identify key stakeholders, including government agencies, transportation companies, and the public.

**3. Ideate:**

- Brainstorm innovative solutions like adaptive traffic signals, smart routing apps, and predictive maintenance for infrastructure.

- Encourage collaboration between traffic engineers, software developers, and data analysts.

**4. Prototype:**

- Develop a working model of the traffic management system to test its functionality and usability.

- Collect feedback from pilot deployments and refine the system based on real-world results.

**FILE NAMING CONVENTION:**

**IOT\_Phase1**