Problem Statement 3: AI-Driven Early Warning System for Traffic Congestion Hotspots

The Challenge

Traffic congestion hotspots often develop gradually due to increasing demand, roadworks, or external disruptions. Existing traffic systems lack early warning mechanisms that identify congestion trends before they escalate. An intelligent system is required to continuously monitor traffic data and flag potential congestion of hotspots in advance.

Traffic Data Analysis Agent

An agent that processes vehicle speed, traffic density, travel time, and external factors such as weather or incidents.

Congestion Risk Detection Agent

An agent that detects early signs of congestion by analyzing deviations from historical and seasonal traffic trends.

Alert & Planning Assistant

An agent that issues early warnings and provides planning-level advisories for traffic authorities (assistive only).

Outcome

Reduces congestion severity by enabling proactive traffic planning and early intervention.

Mandatory Tech Stack

Lang Flow using IBM Granite Model
(Using RAG on congestion management strategies and transportation planning guidelines.)