# AIML Project

## Title: Smart city

### Problem Statement:

Metropolitan cities, such as Hyderabad, experience severe traffic congestion, causing delays and frustration for commuters. This project seeks to develop an AI-powered solution that helps users determine the best time to start their journey and the most efficient routes to avoid traffic. The solution aims to optimize travel time and reduce congestion-related stress.

## Algorithms Used

- AI Algorithms: Process real-time and historical traffic data to identify traffic patterns.
- Machine Learning: Utilizes supervised learning techniques to predict future traffic based on past data.
- Deep Learning: Employs neural networks to improve traffic prediction accuracy and learn from complex traffic scenarios.
- Geospatial Analysis: Analyzes geographical data to recommend optimal routes considering traffic conditions, road networks, and time.

## Datasets Used

- **Historical Traffic Data**: Collected from traffic management systems and open data platforms providing traffic patterns from past years.
- **Real-Time Traffic Data**: Live feeds from GPS systems, city traffic sensors, and road cameras to monitor current congestion levels.
- **Weather Data**: Meteorological information to account for traffic behavior influenced by weather conditions (e.g., rain, fog).
- **Road Network Data**: Includes city maps, road layouts, traffic signals, and route restrictions, providing detailed information on available routes

## Expected Outcome

- **Users will receive real-time suggestions for the best time to start their journey based on traffic predictions.**
- **The application will provide optimized route recommendations to avoid traffic jams, saving time and reducing stress.**
- **Overall, the project will contribute to better traffic management in cities, offering a scalable solution that can be implemented in various metropolitan areas.**


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