ADDIS ABABA SCIENCE AND TECHNOLOGY UNIVERSITY

COLLEGE OF ELECTRICAL AND MECHANICAL ENGINEERING
DEPARTMENT OF SOFTWARE ENGINEERING

FUNDAMENTALS OF PROGRAMMING II PROJECT

PROJECT TITLE = TRAFFIC MANAGEMENT SYSTEM

TRAFFIC

MANAGEMENT SYSTEM

TRAFFIC MANAGEMENT SYSTEM

➢ A traffic management system is a collection of technologies, strategies, and practices designed to monitor, control, and optimize the flow of traffic on road networks and by that our primary goal is to improve traffic efficiency, reduce congestion, enhance safety, and provide a better overall transportation experience for drivers and pedestrians.

HARDWARE AND SOFTWARE COMPONENTS OF TRAFFIC MANAGEMENT SYSTEM

- Traffic Monitoring
- Traffic Signal Control
- Incident Detection and Management
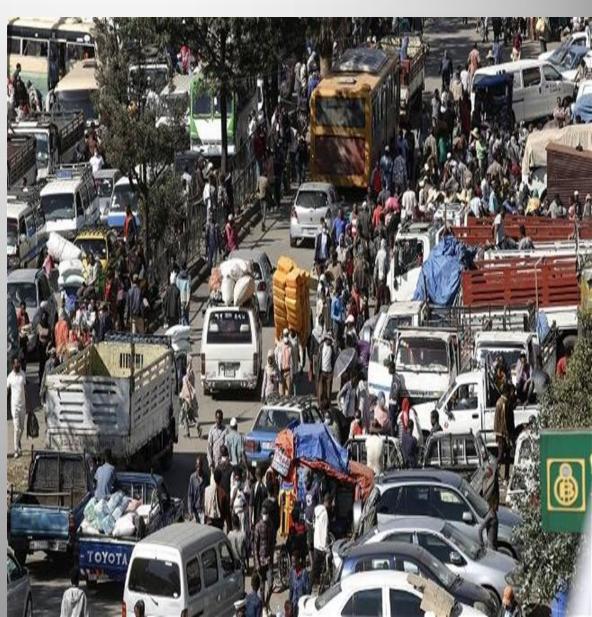- Traffic Data Analysis

TRAFFIC MANAGEMENT SYSTEM IN ADDIS ABABA

Although it is not too many, not powerful nor effective here are some management system we use in our city:

- ❖ Traffic Signal Control
- ❖ Intelligent Transportation Systems (ITS)
- ❖ Traffic Law Enforcement
- ❖ Public Transportation Development
- ❖ Road Infrastructure Development
- ❖ Traffic Data Collection and Analysis

TRAFFIC IN ADDIS ABABA

❖ Addis Ababa experiences traffic congestion and challenges due to its rapidly growing population and limited road infrastructure. The city has witnessed a rise in the number of vehicles on the road, lack of public transportation, driving culture leading to increased traffic volumes and congestion.

PROBLEM STATEMENT

The existing traffic management system is overwhelmed by the growing number of vehicles and the complexities of modern traffic, resulting in significant problems. Congestion levels are rising, leading to frustrating delays and reduced productivity for commuters. Moreover, compromised safety has become a pressing concern, with increased risks of accidents and traffic-related incidents.

PROBLEM STATEMENT

<u>1, Pedestrian Movement</u>

Challenges like inadequate crosswalks and lack of communication with drivers. There is a pressing need for a pedestrian-focused road management system ensuring the safety of movement.

PROBLEM STATEMENT

<u>2, Road Management</u>

The Road Management System doesn't effectively handles traffic flow and It doesn't ensures the safety and efficiency of vehicles on the road.

PROBLEM STATEMENT

3, Parking Vehicles

Some to list like:-

➢ Handling multiple number of vehicles.
➢ Providing Customer Service.
➢ Calculating fees for parking.
➢ Monitoring the parking lot for Parked or Removed cars and to check in the availability of space and handling capacity.

PROBLEM STATEMENT FOR TRAFFIC MANAGEMENT SYSTEM

<u>4, Emergency Service</u>

There is a need for a road management system that seamlessly integrates with emergency response services, providing a direct communication channel and facilitating quick and coordinated response in case of emergencies.

WHAT TO BE DONE?

Typically involves a combination of technologies, processes to identify and respond to incidents on the road network and also we implemented a system to manage the traffic flow Here's an overview:

❖ **A Road Management Service:** traffic flow data, collected from various sources, is analysed to detect traffic flow and congestions.

❖ **Parking Control:** to direct facilitate the parking lot and have info on vehicles if they are removed or parked and check in the unoccupied space.

❖ **Emergency Services:** In cases of accidents or medical emergencies, emergency services such as fire, medical personnel and crime investigators are dispatched to provide assistance. Also ensure that Emergency services are promptly alerted, enabling them to reach the scene of the incident on time and provide timely assistance to those in need.

❖ **Pedestrian Control**: a system for safety measures during crosswalks and to provide emergency services on time.

Why Implement such a system?

- ➢ Fast Traffic Movement
- ➢ Intelligent Traffic Systems
- ➢ Traffic Data Collection and Analysis
- ➢ Incident Detection and Management
- ➢ Parking Management
- ➢ A Better and Fast Emergency Service
- ➢ For the safety of the people