

Assignment - 1.

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I] Define a problem statement and give a brief Executive Summary Snapshot.

Problem :- Traffic jam has severely been a big problem which impacts on the life of people through the increase in their travel time, increase in environmental pollution & also economical losses. It also reduces productivity of humans. Hence an app can be created which will help traffic management system.

A) Executive Summary :-

Analysis :- People spend considerable amount of time stuck in traffic which results in productive losses. Traffic jam is complex problem with may be far-reaching places. It arises due to imbalance between number of vehicles & capacity of existing infrastructures.

Findings :- Due to imbalance between number of vehicles & capacity of existing infrastructures we find that people need much time to travel i.e travel time increases, fuel consumption for vehicles also increases. Also there is a great chance for increase in air pollution. Traffic jam can give stress to the people & also due to expose of pollutants public health may affect widely.

Description :- This problem may arise due to improper traffic management system. Hence effective solutions are require to reduce traffic jam with advanced technology, by analyzing data to identify insights that will help you to make good decisions. Hence an app can solve this problem.

Scope :- This app will help traffic police man to identify & get information about traffic jam areas. Also we see that in metro cities there is lot of traffic jam hence this app will have great scope in metro cities.

Proposed process :- An application (app) can be created which will include traffic sensor data, weather information, historical traffic patterns & also public transportation schedules. Also this app will be giving notification to drivers whenever an ambulance is coming. With help of the app notification, one lane can be made clear or jam free so that ambulance can go quickly. Also this app will give us information about is there EV charging cables in nearby area. If yes then it will also notify us about is there any car already getting charged or not. It will be very useful app for Electric vehicles.

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B) Project Description :-

Project purpose :- The purpose of this project is to develop proper transportation system that allows technology to optimize traffic flow & improve overall mobility. Also there will be upgradation in human life & pollution free life in particular areas.

Current solution :- A website / app will be created which will show various data resources which will include real-time traffic data sensors, weather information, & also public transportation schedules. By including these all points in an app we can identify traffic hotspots, predict jam levels & it will provide real-time traffic information & will suggest alternate route to drivers.

This app will enable us to learn from historical data & adapt to changing traffic conditions. It will also explore integration of emerging technology like autonomous vehicles, EV, to further enhance traffic efficiency & sustainability.

Challenges :- The challenges that we may face while making app is we have to make the best app than the existing one by including advance technologies. We have to put up-to-date traffic data i.e live data tracking system is needed. Connectivity of GPS should be precised & accurate information should be given.

Why took the project? :- By reducing traffic jam / congestion, improving air quality & saving time as well as fuel, it will contribute to higher quality of life for all of us.

c) Project Scope :-

Specific goals :- The specific goal for making this website/app is to create for efficient & user-friendly transportation system that will benefit both individuals & community too. By providing accurate & up-to-date traffic data, users can avoid jam areas & choose alternative routes. Also this app can suggest fastest & most efficient routes based on real-time traffic conditions. And by quickly reporting incidents, users help other drivers to avoid trouble spots & improve traffic flow.

Tasks :- System development - We will design & develop the core traffic management system architecture. We will identify & put on necessary data sources like traffic sensors, GPS data, social media feeds, weather data.

Analysis & modeling - Development algorithms for traffic patterns analysis, jam predictions & route optimization can be done.

Testing & evaluation - Conduct thorough system testing & its evaluation. We can collect user feedback & go on for system improvements.

Deliverables :- Deliverables refers to all outputs associated with a project. For traffic management system deliverables are 1) Functional website or mobile app. 2) Traffic management system architecture. 3) System documentation & user manuals. 4) Evaluation of reports.

Costs :- This app will need data storage costs, hardware & software infrastructure costs, development costs & also maintenance & support costs.

However cost estimation will also depend on scale of project, the complexity of system & chosen advance technologies.

Deadlines :- App development & its launch can be done in three months as it will be most demanding app for the people who want to travel in jam / congestion free areas.