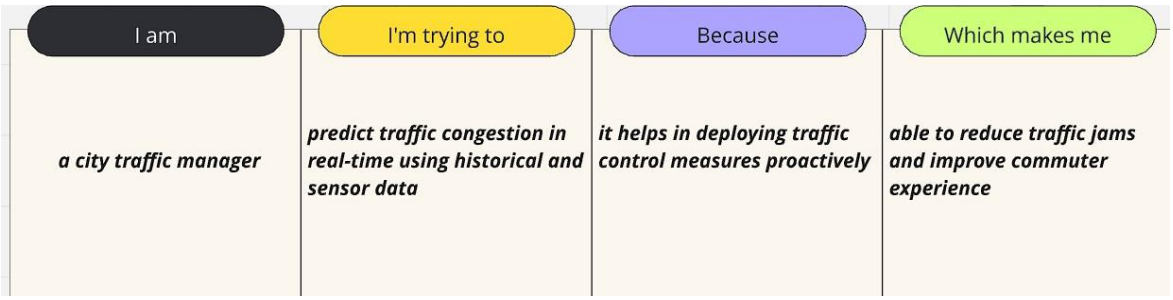
Project Initialization and Planning Phase

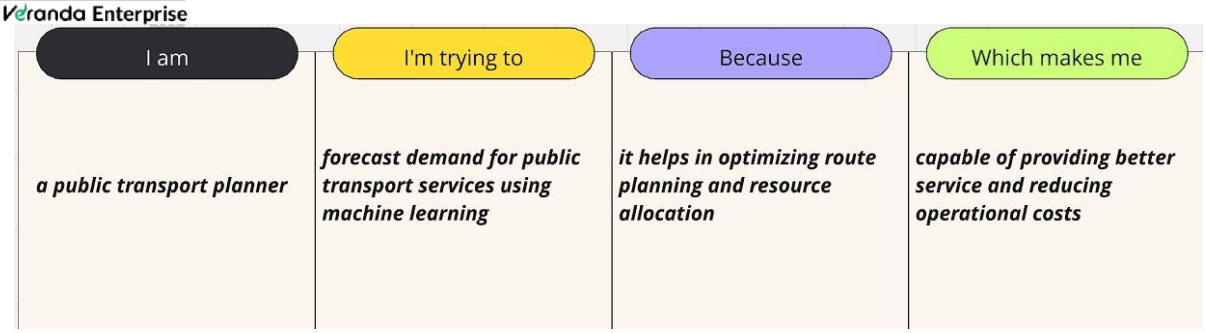
Date	8 July 2024
Team ID	SWTID1720527361
Project Name	TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning
Maximum Marks	3 Marks

Define Problem Statements (Customer Problem Statement Template):

Prediction of traffic congestion: As the city's traffic manager, real-time traffic congestion prediction would be one of the primary factors towards efficient management. Now, analysis of historical data and sensor inputs can feed machine learning models in order to predict patterns of congestion. At the same time, proactive deployment of control measures such as signal timing adjustment or rerouting vehicles would alleviate the problem of traffic jams and make the commuting experience far smoother.



Demand Forecasting in Public Transport: Accurate demand forecasts are essential for optimizing services in public transport planning. Machine learning models make predictions of future demand by using historic ridership data, event data, and other relevant factors. This helps planners allocate resources effectively, adjust route schedules, and raise service to the commuter while keeping operational costs under control.



Core problem statements of the project center on developing and implementing a machine learning model for estimating traffic volume from different data sources. These estimations are very important for city traffic management, transport agencies, and urban planners. More concretely, our main objectives are the optimization of the traffic flow at peak hours, proactive accident prevention, dynamic control of the traffic signals, public transport demand forecasting, and the prediction of available parking space. Addressing these challenges will improve the overall efficiency of transportation, reduce congestion, and improve the commuter experience.

Problem Statement (PS)	I am (Customer)	I'm trying to	Because	Which makes me
PS-1	a city traffic manager	predict traffic congestion in real-time using historical and sensor data	it helps in deploying traffic control measures proactively	able to reduce traffic jams and improve commuter experience
PS-2	a public transport planner	forecast demand for public transport services using machine learning	it helps in optimizing route planning and resource allocation	capable of providing better service and reducing operational costs