**Project Planning Phase**

**Project Planning Template**

|  |  |
| --- | --- |
| Date | 28 JUNE 2025 |
| Team ID | LTVIP2025TMID59766 |
| Project Name | **TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning** |
| Maximum Marks | 4 Marks |

**Project Planning:**

| **Step** | **Description** |
| --- | --- |
| **Problem Definition** | - Understand the problem.- Define clear objectives (e.g., predict traffic volume). |
| **Requirement Analysis** | - Gather functional & technical requirements.- Data needs, algorithms, UI, infrastructure. |
| **Data Collection** | - Collect data from sensors, APIs, CSVs, government portals, etc. |
| **Data Preprocessing** | - Clean data, handle missing values, normalize, split into train/test. |
| **Model Selection** | - Choose algorithms suitable (e.g., Decision Trees, Random Forest, Neural Networks). |
| **Model Development** | - Train the model using the training dataset.- Tune hyperparameters. |
| **Model Evaluation** | - Test model using test data.- Use metrics: Accuracy, RMSE, MAE, etc. |
| **Deployment Planning** | - Decide deployment method (Cloud, Web, API, Mobile App). |
| **UI/UX Development** | - Design the user interface for inputs and predictions.- Connect UI with backend model. |
| **Testing (Functional & Performance)** | - Conduct UI testing, API testing, load testing, model validation. |
| **Deployment & Release** | - Deploy the model.- Setup cloud/server.- Release to users. |
| **Monitoring & Maintenance** | - Monitor model performance.- Update model with new data periodically. |

**Agile Project Planning:**

| **Sprint** | **Duration** | **Tasks** |
| --- | --- | --- |
| Sprint 1 | 2 weeks | Problem definition, requirement analysis |
| Sprint 2 | 2 weeks | Data collection, preprocessing |
| Sprint 3 | 2 weeks | Model development & testing |
| Sprint 4 | 2 weeks | UI/UX design, backend integration |
| Sprint 5 | 2 weeks | Deployment, testing, release |

**Steps:**

Requirement Document

Data Collection Plan

Model Development Report

Testing Report

Deployment Guide

User Manual