

Project Initialization and Planning Phase

Date	23 September 2024
Team ID	LTVIP2024TMID24998
Project Title	Flight Delays Prediction using Machine Learning.
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

Develop a flight delay prediction model using machine learning algorithms, leveraging historical flight data, weather conditions, and airport traffic. The solution aims to enhance scheduling efficiency, reduce delays, and improve overall passenger satisfaction by providing accurate delay forecasts.

Project Overview	
Objective	To develop a machine learning model that accurately predicts flight delays, enhancing operational efficiency and passenger experience.
Scope	The project will involve collecting and analyzing flight, weather, and air traffic data to create a scalable prediction model for forecasting delays across various airports and routes.
Problem Statement	
Description	Our project aims to build a Machine Learning model integrated with a Flask application to predict flight delays. By analyzing historical flight data, weather conditions, airport congestion, and other factors, we develop a predictive model.
Impact	Accurate predictions reduce passenger frustration, optimize airline operations, and cut costs related to delays.
Proposed Solution	
Approach	The Flight Delay Prediction (FDP) approach involves collecting and preprocessing the data, feature selection, model training and evaluation techniques to develop predictive models using machine learning techniques.
Key Features	Data cleaning, feature encoding, model selection, scalability, alert metrics, performance metrics, and visualization tools.

Resource Requirement

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	e.g., 2 x NVIDIA V100 GPUs
Memory	RAM specifications	e.g., 8 GB
Storage	Disk space for data, models, and logs	e.g., 1 TB SSD
Software		
Frameworks	Python frameworks	e.g., Flask
Libraries	Additional libraries	e.g., scikit-learn, pandas, numpy
Development Environment	IDE, version control	e.g., Jupyter Notebook, Git
Data		
Data	Source, size, format	e.g., Kaggle dataset, 10,000 images