Project Design Phase-I
Proposed Solution

Date	31 October 2022
Team ID	PNT2022TMID02840
Project Name	Project - Developing a Flight Delay Prediction Model using Machine Learning
Maximum Marks	2 Marks

Proposed Solution:

S.No.	Parameter	Description
	Problem Statement (Problem to be solved)	Over the last twenty years, air travel has been increasingly preferred among travelers, mainly because of its speed and in some cases comfort. This has led to phenomenal growth in air traffic. An increase in air traffic growth has also resulted in massive levels of aircraft delays on the ground and in the air. These delays are responsible for large economic and environmental losses. The main objective of the model is to predict flight delays accurately in order to optimize flight operations and minimize delays.
	Idea / Solution description	Using a machine learning model, we can predict flight arrival delays. The input to our algorithm is rows of feature vectors like departure date, departure delay, distance between the two airports, scheduled arrival time etc. We then use a decision tree classifier to predict if the flight arrival will be delayed or not. A flight is considered to be delayed when the difference between scheduled and actual arrival times is greater than 15 minutes. Furthermore, we compare decision tree classifiers with logistic regression and a simple neural network for various figures of merit.
	Novelty / Uniqueness	Along with the information whether the flight is being delayed or not, the approximate time of arrival (after delay) is

		also predicted so that passengers can adjust their schedule accordingly. Other flights whose departures are delayed due to the arrival delay of one flight are also identified and notifications are sent to the respective passengers.
	Social Impact / Customer Satisfaction	This notifies people about the delay in flights well in advance so that the passengers need not get frustrated knowing the slow down at the last minute. Normal passengers can arrive patiently at the airport. Important people (VIPs, Doctors, etc..) can reschedule events based on the delay information.
	Business Model (Revenue Model)	Hospitality centers and businesses could use this solution to prepare refreshment, recreation and other appropriate services to the customers waiting in the lobby.
	Scalability of the Solution	Since this application is hosted as a web page in a cloud platform, anyone can sign in and obtain the information on any device from their browser.