Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID35530
Project Name	Developing A Flight Delay Prediction Model Using Machine Learning
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
	Problem Statement (Problem to be solved)	Flight delays in air transportation are a major concern that has adverse effects on the economy, the passengers, and the aviation industry.This matter critically requires an accurate estimation for future flight delays that can be implemented to improve airport operations and customer satisfaction. Having said that, a massive volume of data and an extreme number of parameters have restricted the way to build an accurate model. Many existing flight delay prediction methods are based on small samples and/or are complex to interpret with little or no opportunity for machine learning deployment.

	Idea / Solution description	The proposed model gains insight into factors causing flight delays, cancellations and the relationship between departure and arrival delay using exploratory data analysis. In addition, Random Forest (RF) algorithm is used to train and test the big dataset to help the model development. A web application has also been developed to implement the model and the testing results are presented with the limitation discussed
	Novelty / Uniqueness	Many existing flight delay prediction methods are based on small samples and/or are complex to interpret with little or no opportunity for machine learning deployment.The proposed model gains insight into factors causing flight delays, cancellations and the relationship between departure and arrival delay using exploratory data analysis.
	Social Impact / Customer Satisfaction	An accurate estimation of flight delay is critical for airlines because the results can be applied to increase customer satisfaction and incomes of airline agencies. Predicting flight delays can improve airline operations and passenger satisfaction, which will result in a positive impact on the economy
	Business Model (Revenue Model)	A web application has been developed to provide the end-users an interface to help predict flight delays.In future, we can implement the subscription plan for the prediction process and also if our model predict well we can sell it airlines ,so they can prior inform the passenger.

	Scalability of the Solution	The proposed combined method of delay analysis and its prediction can also be further explored in other studies and also can extend the application in more comfortable with the end user.In the situation of airline, they can develop this system and make the passenger feels good and inform prior.