Project Design Phase - I
Solution Architecture

Date	05 October 2022
Team ID	PNT2022TMID52685
Project Name	Developing a flight delay prediction model using Machine Learning
Maximum Marks	4 Marks

Architectural Workflow:

User view:

- ❖ The user inputs flight details to the UI.
- ❖ Entered input is sent to the classifier model which is deployed through IBM Watson.
- ❖ The model predicts the estimated time of departure/arrival delay and sends it to the UI.
- ❖ The predicted value is displayed to the UI

Model view

- ❖ The dataset is preprocessed for handling missing/categorical values.
- ❖ Spatial and other features are extracted.
- ❖ The features are split into training and test sets.
- ❖ A Random forest classifier is built and is trained using the training data.
- ❖ The model is evaluated using testing data.
- ❖ The trained model is deployed in IBM Watson

Data Preprocessing

Data

Data Visualisation → Handling missing values → Encoding Categorical values

Preprocessed data

Spatial Feature Extraction

Aviation network construction → Crowdedness calculation

Spatial features

Extraction of other features

Model features

Data Splitting

Training set

Testing set

Flight details

Training Random Forest classifier — Classifier → Deployed Model ← input ← Getting input from UI

Prediction

Displaying prediction to UI