Model Development Phase Template

Date	15 March 2024
Team ID	739796
Project Title	Smart Lender-Flight Delay prediction
Maximum Marks	5 Marks

Feature Selection Report Template

In the forth coming up date ,each feature will be accompanied by a briefed scription. Users will indicate whether it's selected or not, providing reasoning for their decision. This process will streamline decision-making and enhance transparency in feature selection.

Feature	Description	Selected (Yes/No)	Reasoning
YEAR	It tells about the year Data	No	For predicting The year data
QUARTER	The year is divided into four quarters	Yes	To make the data Seasonal Patterns
MONTH	It tells about the Month data	Yes	For predicting The Month data
DAY_OF_M ONTH	specific day within a month on which a flight is scheduled to depart.	Yes	That might occur on specific days, such as the beginning or end of the month, when travel volume may vary significantly.

Field	Description	Included	Reason
DAY_OF_WEEK	Indicates the day of the week a flight is scheduled to depart.	Yes	patterns and trends in flight delays that may vary by day, such as increased delays on weekends due to higher passenger volumes or maintenance schedules..
UNIQUE_CARRIER	Represents the airline carrier code	No	levels of operational efficiency, reliability, and historical delay patterns that can significantly impact delay probabilities.
TAIL_NUM	Refers to the unique identifier assigned to each aircraft.	No	to identify patterns and trends associated with specific aircraft, such as maintenance issues or performance characteristics that may influence delays.
FL_NUM	The unique flight number assigned to each flight.	Yes	helps in identifying specific flights, which can be crucial for tracking historical delays associated with particular flight numbers and potentially uncovering patterns or trends.
ORIGIN_AIRPORT_ID	The unique identifier for the airport where the flight originates.	No	different airports have varying traffic volumes, weather patterns, and operational efficiencies, all of which can significantly impact departure times and delays.
ORIGIN	Machine learning framework designed to predict flight delays by analyzing historical data and real-time factors.	Yes	By leveraging diverse data sources and advanced algorithms, ORIGIN enhances the accuracy of delay predictions, enabling airlines and passengers to make informed decisions.

			It allows for the comparison of the scheduled arrival time with the actual arrival time, which directly
ARR_TIM E	the actual arrival time of a flight at its destination.	No	indicates the presence and extent of any delay.
ARR_DEL AY	the actual arrival delay in minutes for a flight.	No	It a crucial metric for predicting and understanding flight punctuality and delays.
ARR_DEL 15	Indicates whether a flight's arrival was delayed by 15 minutes or more.	No	which are crucial for analyzing and improving flight punctuality and passenger satisfaction.
CANCEL ED	indicating the scheduled flight will not depart.	No	Flights can be cancelled due to severe weather conditions, mechanical issues, or other unforeseen circumstances that prevent safe operation.
DIVERTE D	advanced machine learning model for predicting inflight delays by analyzing real-time flight data and environment al factors.	No	enhance operational efficiency and passenger satisfaction by allowing airlines to proactively manage schedules and resources.
ACTUAL_ ELAPSED _TIME	represents the scheduled duration of a flight from departure to arrival.	No	it helps to compare actual flight duration against the scheduled time, aiding in identifying deviations and patterns that may indicate delays.

DISTANCE	refers to the length of the flight path between the	No	Longer distances generally increase the potential for various delays due to extended exposure to weather changes, air traffic control, and operational issues.