**FLIGHT DELAY PREDICTION**

* **Flight planning is one of the challenges in industrial world . which faces many uncertain conditions.**
* **One such condition is delay occurrence, which stems from various factor and imposes considerable costs on airline , operators , and travelers.**
* **Delays in departure can occur due to bad weather conditions, seasonal and holiday demands, airline policies, technical issues such as problems in airport facilities , luggage handling and mechanical apparatus, and accumulation of delays from**

**preceding flight.**

* **Here in flight delay prediction system based on the weather**

**parameters which can result in delays .**

* **The system considered the temperature , humidity , rain in mm , visibility and month numbers as important parameters for prediction of delay.**
* **Delay prediction tool will allow the operator and the administrators to take the concerned action for smooth operation.**
* **Various methods that can be used to develop a system. which predict the delay in flight can be machine learning , probabilistic models , statistical analysis or network representation.**

**Define Problem / Problem Understanding**

* Specify the business problem
* Business requirements
* Literature Survey
* Social or Business Impact

**Data collection and preparation**

* collection the dataset
* Data preparation

**Exploratory Data Analysis**

* Descriptive statistical
* Visual Analysis

**Model Building**

* Training the model in multiple algorithms
* Testing the model

**Performance testing and hyper parameter tuning**

* Testing model with multiple evaluation metrics
* Comparing model accuracy before and after applying hyper parameter tuning

**Model Deployment**

* Save the best model
* Integrate with web framework

**Project Demonstration and Documentation**

* Record explanation video for project end to end solution
* Project Documentation-step by step project development procedure

**Flight data**

* **Flight number**
* **Carrier(America, united)**
* **Destination(airport code : SFO)**
* **Origin(airport code : LAX)**
* **Date(MM/DD/YY)**
* **Day of week(MON,TUE,WED,THU,FRI,SAT,SUN)**
* **Scheduled departure time(HH:MM AM/PM)**
* **Actual arrival time(HH:MM AM/PM)**
* **Actual departure time(HH:MM AM/PM)**
* **Minutes late(+Late/-Early)**
* **Scheduled arrival time(HH:MM AM/PM)**

**WEATHER DATA**

* **Airport ID**
* **Year**
* **Adjusted day**
* **Adjusted month**
* **Adjusted hour**
* **Time zone**
* **Visibility**
* **Dry bulb Celsius**
* **Dew point farenheit**
* **Dew point Celsius**
* **Relative humidity**
* **Wind speed**
* **Altimeter**