

# Optimizing Flight Booking Decisions Through Machine Learning Price Predictions

## Define Problem / Problem Understanding

### Specify the Business Problem

People who work frequently travels through flight will have better knowledge on best discount and right time to buy the ticket. For the business purpose many airline companies change prices according to the seasons or time duration. They will increase the price when people travel more. Estimating the highest prices of the airlines data for the route is collected with features such as Duration, Source, Destination, Arrival and Departure. Features are taken from chosen dataset and in the price wherein the airline price ticket costs vary overtime. We have implemented flight price prediction for users by using KNN, decision tree and random forest algorithms. Random Forest shows the best accuracy of 80% for predicting the flight price. Also, we have done correlation tests and metrics for the statistical analysis.

In this project, we can train a model that will help us to predict prices of air tickets. The machine learning work flow help to predict a price using its attributes.

Flight ticket prices can be something hard to guess. We have been provided with prices of flight tickets for various airlines between the months of March and June of 2019 and between various cities, using which we aim to build a model which predicts the prices of the flights using various input features.

We have 2 datasets here — training set and test set.

The training set contains the features, along with the prices of the flights. It contains 10683 records, 10 input features and 1 output column — ‘Price’.

The test set contains 2671 records and 10 input features. The output ‘Price’ column needs to be predicted in this set. We will use Regression techniques here, since the predicted output will be a continuous value.

Following is the features available in the dataset – Airline, Date\_of\_Journey, Source, Destination, Route, Dep\_Time, Arrival Time ,Duration, Total Stops, Additional Info, Price.