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**Sinhgad Technical Education Society’s**

**Sinhgad Institute of Management**

**and**

**computer application**

**Academic year 2021-2022**

**MCA II**

**Mini project synopsis**

**Title of the Project – Flight Price Prediction**

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# **Flight price prediction**

# What is Flight?

Flight or flying is the process by which an object moves through a space without contacting any planetary surface, either within an atmosphere or through the vacuum of outer space.

**What are the different types of Flight Company?**

1. **Vistara:-** The newest addition to the Indian domestic market, Vistara is a joint venture between Tata Sons and Singapore Airlines. Vistara is quickly becoming popular for its affordable travel rates coupled with premium hospitality. The name 'Vistara' is symbolic of its vision of infinite expansion and the desire of the airline to become the Best Airline in India to the people.  
   Headquarters - Gurgaon  
   Type - Full service  
   IATA - UK  
   ICAO - VTI
2. **Indigo :-** As of June 2018, Indigo commands a substantial 42% share of the Indian Aviation market. It has the largest fleet size in India and consequently can transport the largest number of passengers each year. Indigo also ranked first in the list of best airlines in India. Frequent flyers regularly choose Indigo for the cheapest flight fares, and deals offered year-round.

Headquarters - Gurgaon

Type - Low cost

IATA - 6E

ICAO – IGO

### Air India :- Despite its recent struggles, Air India continues to be one of the most sought-after airline by the people of India for domestic as well as international travel. It offers some of the cheapest fares while also providing the most luggage capacity (25 kg for the economy class) among all the airlines which is highly appreciated by flyers. Air India's solid belief in offering the warmest of hospitalities is symbolised by their mascot, 'The Maharajah' and makes it one of the Best Airlines in India.

### Headquarters – Delhi

### Type - Full Service

### IATA – AI

### ICAO – AIC

1. SpiceJet :- SpiceJet headquartered in Gurgaon, India is a popular low-cost airline in India. In terms of the number of domestic passengers carried each year, it is ranked fourth in the country. 312 daily flights are in operation under SpiceJet across 55 destinations; 48 of which are national while 7 are international. The premium services of this airline are offered under the banner of SpiceMax. These premium services include complimentary meals, priority check-in and boarding, extra legroom, etc.

Headquarters - Gurgaon

Type - Low cost

IATA - SG

ICAO – SEJ

1. AirAsia :- AirAsia is a Malaysian budget airline carrier which recently started operating in India under its subsidiary AirAsia India. With this AirAsia became the first foreign airline carrier to set up a subsidiary in India. Kempegowda International airport near Bengaluru serves as its primary base of operations. AirAsia India offers some of the best hospitality to their customers at unbelievably low prices. For ten years in a row, AirAsia has bagged numerous awards and has been hailed as the best budget airline internationally.

Headquarters - Bangalore

Type - Low cost

IATA - I5

ICAO – IAD

1. GoAir (Now Go First) :- Owned by the conglomerate Wadia Group, GoAir (Now Go First) started operations in November of 2005. Since then, it has managed to command 8.4% of the market share in terms of the number of passengers carried each year. Go First is primarily a budget airline, but it has introduced its 'frequent flyer program' GO CLUB which offers premium services such as access to airport lounges and free upgradation to 'Go Business' (business class).

Headquarters - Mumbai

Type - Low cost

IATA - G8

ICAO – GOW

**About dataset**

Dataset contains information about flight booking options from the website Easemytrip for flight travel between India's top 6 metro cities. There are 300261 datapoints and 11 features in the cleaned dataset.

**Type of seating available in flight**

There are 4 cabin classes offered on most airlines:-

1. Economy
2. premium economy
3. business
4. first class.

**Problem Objective:**

1. first download dataset <https://www.dgca.gov.in/>
2. To perform data prediction of fight data Set.
3. To focus on all the necessary cleaning of data (transform raw data into more readily used format) to understand the data in the dataset.
4. Filter the data and check dataset info.
5. Fill all null values using Nympy Library.
6. Perfume operation for predict the price.
7. Visualize the data using graphs.

**Domain:**

Flight price prediction

**Hard Ware Requirement:**

1. 4Gb RAM
2. 500GB Hard Disk
3. Intel i3 Processor

**Software Requirement**

1. Python for Data Analysis and prediction
2. Excel for CSV

**Predict Tasks to be performed:**

1. Import libraries and Dataset.
2. Reading CSV file and showing information regarding the dataset.
3. Checking how many records and column are there in the dataset.
4. Dropping unnascary columne.
5. Checking the null values in the dataset and if there then either filling the values or removing the records if there is less null values.

**Building Predictive Model**

1. **Feature engineering -**It is a step by step procedure which is used to solve the problem
2. **Algorithm Selection**- First of all, we split our dataset into a training and a test dataset.
3. **Model Building –** for building modeluse sklearn library in python in that we select the LogisticRegression
4. **Model Fitting-** A measure of how well a machine learning model generalizes tosimilardata to that on which it was trained.
5. **Accuracy of Model –** The number of classifications a model correctly predicts divided by total number of predictions made.
6. **Model deployment-** The process of putting machine learning model into production.

**Dataset Description:**

|  |  |
| --- | --- |
| Fields | Description |
| Id | To express the Number of rows |
| airline | The name of the airline company is stored in the airline column. |
| Flight | Flight stores information regarding the plane's flight code. It is a categorical feature. |
| Source City | City from which the flight takes off. |
| Departure Time | This is a derived categorical feature obtained created by grouping time periods into bins. |
| Stops | A categorical feature with 3 distinct values that stores the number of stops between the source and destination cities. |
| Arrival Time | This is a derived categorical feature created by grouping time intervals into bins. It has six distinct time labels and keeps information about the arrival time. |
| Destination City | City where the flight will land. It is a categorical feature having 6 unique cities. |
| Class | A categorical feature that contains information on seat class; it has two distinct values: Business and Economy. |
| Duration | A continuous feature that displays the overall amount of time it takes to travel between cities in hours. |
| Days Left | This is a derived characteristic that is calculated by subtracting the trip date by the booking date. |
| Price | Target variable stores information of the ticket price. |

**Conclusion:**

So as we saw that we have done a complete EDA process, getting data insights, feature engineering, and data visualization as well so after all these steps one can go for the prediction using machine learning model-making steps.

Here’s the repo [link](https://github.com/Aman-Preet-Singh-Gulati/flight-fare-prediction) to this article. Hope you liked my article on flight fare prediction using machine learning. If you have any opinions or questions, then comment below.

Read on AV [Blog](https://www.analyticsvidhya.com/?s=prediction+using+machine+learning) about various predictions using Machine Learning.

**References:**

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