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DEPT OF BACHELOR OF COMPUTER APPLICATION

OPTIMIZING FLIGHT BOOKING DECISION THROUGH MACHINE LEARNING PRICE PREDICTIONS

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PROBLEM UNDERSTANDING

INTRODUCTION

Airline companies use complex algorithms to calculate flight prices given various conditions present at that particular time. These methods take financial, marketing, and various social factors into account to predict flight prices.

PURPOSE OF THE PROJECT

The objective of this article is to predict flight prices given the various parameters. Data used in this article is publicly available at Kaggle. This will be a regression problem since the target or dependent variable is the price (continuous numeric value).

BUSSINESS IMPACT

Personal loans providers may charge fees for services such as loan originization, processing, and late payments. Advertising the brand awareness and marketing to reach out to potential borrowers to generate revenue.

DATA COLLECTION AND PREPARATION

1.Collect the dataset:

The first step is to collect the data on the flight booking price predictions over the past years data should include source, destination, route, arrival time, total stops, price etc..,

1.1 Import the libraries :

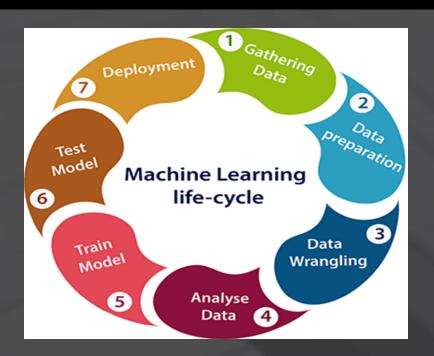
After collecting dataset, import the libraries as;

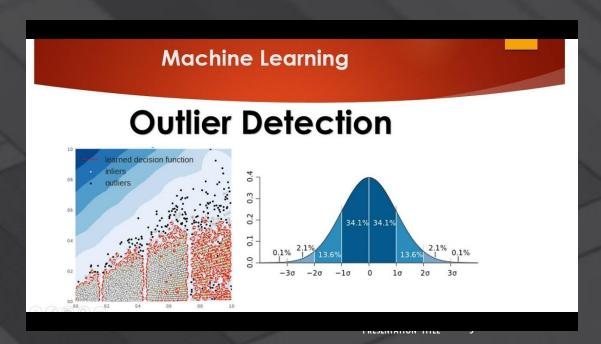
import NumPy as np and so on....,

1.2 Read the dataset:

Read the dataset with the help of pandas and NumPy and so on and called the dataset through the function reads_csv().

DATA PREPARATION





EXPLORATORY DATA ANALYSIS

Q1

1. Visual Analysis

Visual analysis is process of using visual representation. Such as charts, plots, and graphs, to explore and understand data.

1. <u>Univariate analysis</u>

Univariate analysis is understanding the data with a single feature.

1. <u>Bivariate analysis</u>

 Bivariate analysis involves analyzing the relationship between two varia ble.

1. <u>Multivariate analysis</u>

Multivariate analysis is to find the relation between multiple features.



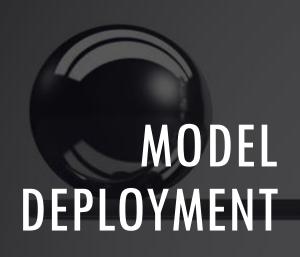
MODEL BUILDING

Build the model after data is cleaned. We can train our data on different algorithm. The best model is saved based on its performance

1. Training the model in multiple algorithms and hypertunning the model

In this project We will using different algorithms. From this the best model is selected and saved in .pk1 format.

- ▶ Random forest regression
- >Logistic regression
- ➤ KNeighbors regression
- ➤ Decission tree regression
- ▶Gradient boosting regression





Saving the best model after comparing its performance using different evaluation metrics means selecting the model with highest performance and saving its weight and configuration.

FUTURE BLOOM OF PRICE PREDICTION

- It's The Most Efficient Way To Travel Long Distances
- Planes Can Carry A Lot Of Weight
- You Can Fly Everywhere
- Gets You Out of Your Comfort Zone

