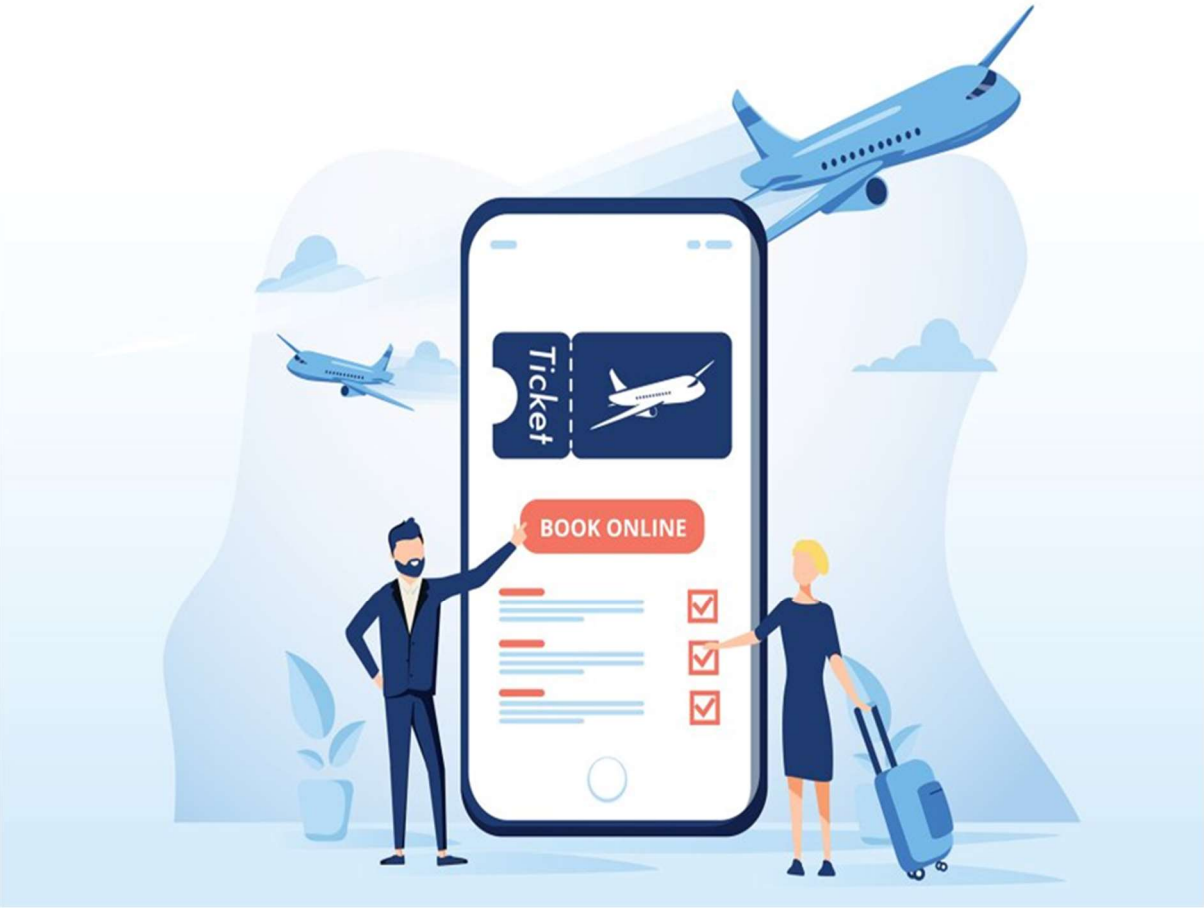
# Flight Ticket Prices Prediction

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## Contents

## Abstract

For purchasing an airplane ticket, the traditional purchase approach is to buy a ticket far in advance of the flight's departure date to avoid the risk that the price may increase quickly before the date of departure. However, this is not always the case; if airline corporations wish to increase sales, they can lower prices. Airlines employ a variety of factors to decide flight ticket rates, including whether the trip is around the holidays, the quantity of available seats on the plane, and even the month. Some of the variables can be seen, while others are hidden. In this context, customers are attempting to discover the best day to purchase a ticket, while airline firms, on the other hand, are attempting to maximize overall revenue.

# Introduction

## Why this High-Level Design Document?

The purpose of this High-Level Design (HLD) Document is to add the necessary detail to the current project description to represent a suitable model for coding. This document is also intended to help detect contradictions before coding and can be used as a reference manual for how the modules interact at a high level.

The HLD will:

- Present all of the design aspects and define them in detail
- Describe the user interface being implemented
- Describe the hardware and software interfaces
- Describe the performance requirements
- Include design features and the architecture of the project
- List and describe the non-functional attributes like:
    1. Security
    2. Reliability
    3. Maintainability
    4. Portability
    5. Reusability
    6. Application compatibility
    7. Resource utilization
    8. Serviceability

## Scope

The HLD documentation presents the structure of the system, such as the database architecture, application architecture (layers), application flow (Navigation), and technology architecture. The HLD uses non-technical to mildly-technical terms which should be understandable to the administrators of the system.

## General Description

## Product Perspective & Problem Statement

Airline companies use many different variables to determine the flight ticket prices: indicator whether the travel is during the holidays, the number of free seats in the plane etc. Some of the variables are observed, but some of them are hidden. The problem is how to determine when is the best time to buy flight ticket for the desired destination and period. In other word, when given the historical price and the current price of a flight for a specific departure date, algorithms need to determine whether it is suitable to buy or wait. Airline companies have the freedom to change the flight ticket prices at any moment. Travelers can save money if they choose to buy a ticket when its price is the lowest.

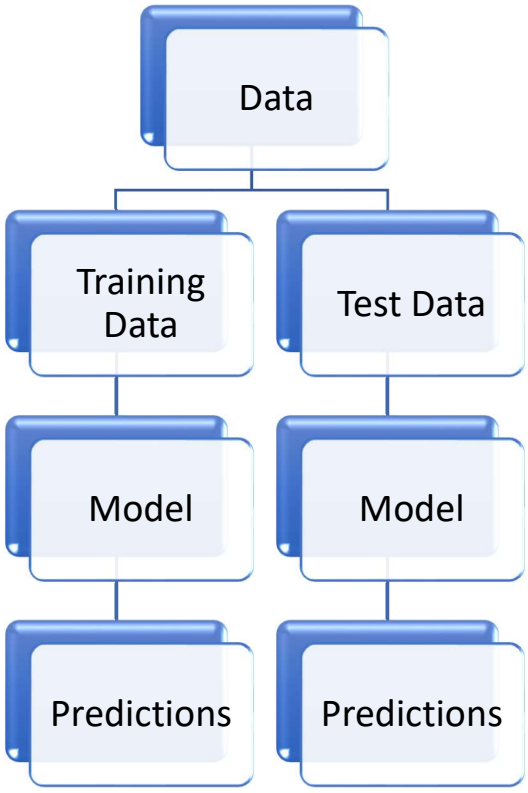
## Tools used

Business Intelligence tools and libraries works such as NumPy, Pandas, Seaborn, Matplotlib, MS-Excel, MS-Power, Jupyter Notebook and Python Programming Language are used to build the whole framework.

## Design Details

### Process Flow


### Model Training and Evaluation



## Performance

The model is solution, how to determine when is the best time to buy flight ticket for the desired destination and period.

## Reusability

The code written and the component used should have the ability to be reused with no problem.

## Application Combability

The different component for this project will be using python as an interface between them. Each component will have its own task to perform, and it is the job of the python to ensure proper transfer of information.

## Resource Utilization

When any task is performed, it is likely to use all the processing power available until that function is performed.

## KPIs (Key Performance Indicators)

Key indicators displaying a summary of the Price and its relationship with different metrics.

- Source
- Destination
- Duration
- Total stops
- Date of Journey

## Conclusion

The model will predict the price based on various important factors which in turn helps to get flight ticket in minimum price.