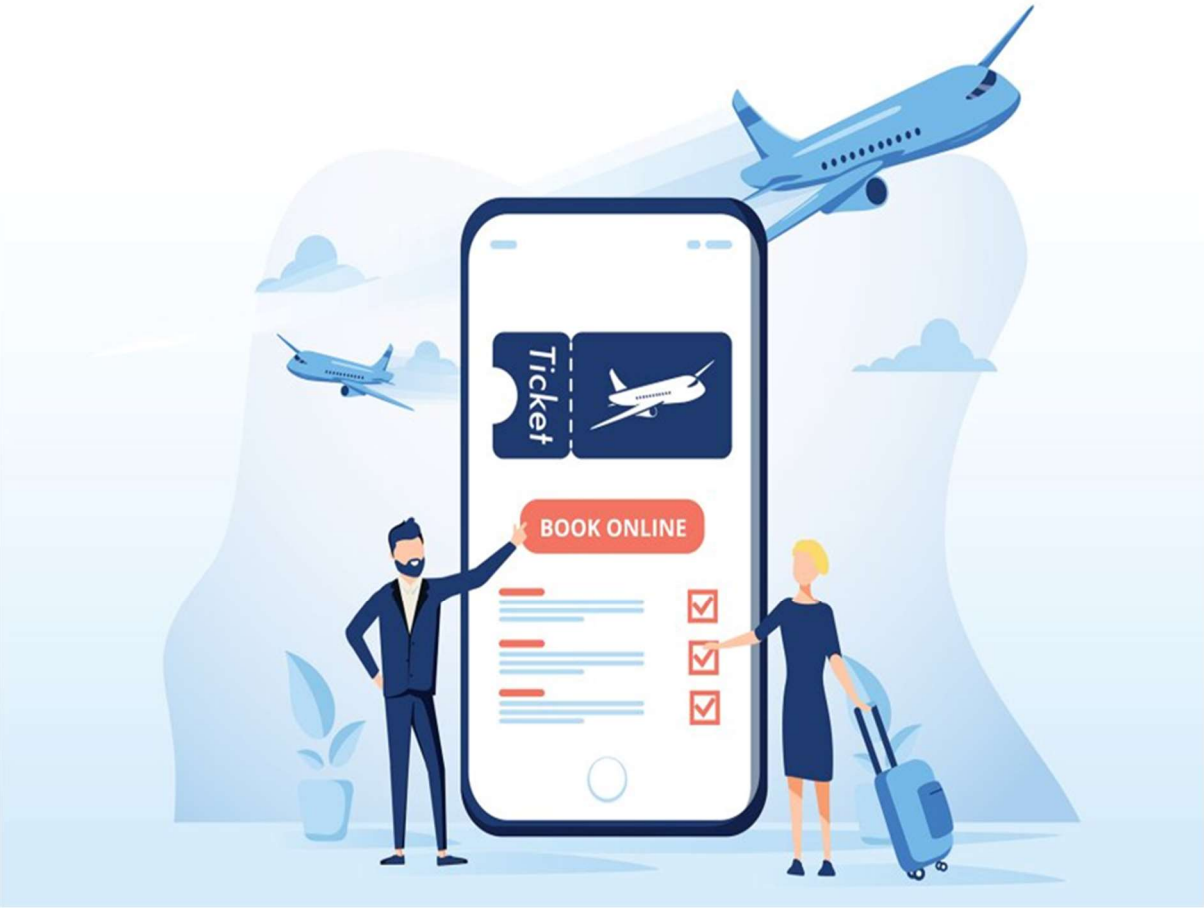
Low Level Design

Flight Ticket Prices Prediction



Ravinder

Contents

Introduction

What is Low Level Design Document?

The goal of the Low-level design document (LLDD) is to give the internal logic design of the actual program code for the Heart Disease Diagnostic Analysis dashboard. LLDD describes the class diagrams with the methods and relations between classes and programs specs. It describes the modules so that the programmer can directly code the program from the document.

What is Scope?

Low-level design (LLD) is a component-level design process that follows a step-by-step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work.

Project Introduction

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.

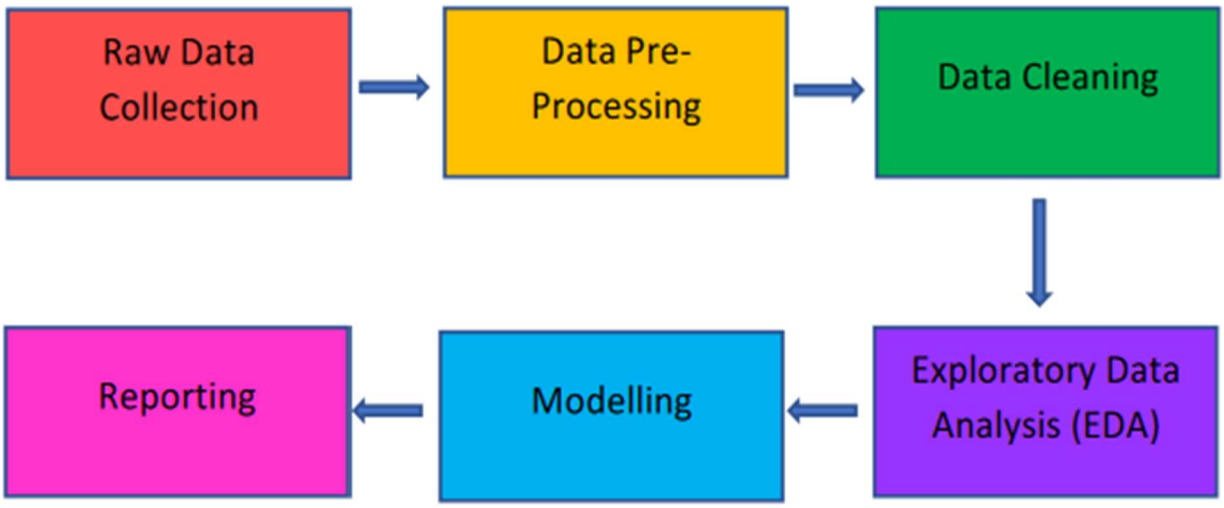
Problem Statement

- 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.
- The problem is how to determine when is the best time to buy flight ticket for the desired destination and period.
- 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
- 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.

Dataset

1. Airline: Name of Airline
2. Date_of_Journey: Date of Journey
3. Source: Place from which Journey started
4. Destination: Place which passenger reached
5. Route: Flight Route
6. Dep_Time: Departure Time from source
7. Arrival_Time: Arrival Time at destination
8. Duration: Duration of journey
9. Total_Stops: total no of stops between source and destination
10. Additional_Info: Any additional information
11. Price: Price of journey

ARCHITECTURE



Architecture Description

Data Collection

The Dataset was taken from iNeuron's Provided Project Description Document.

https://astra.dev/ineuron

Data Pre-Processing

Before building any model, it is crucial to perform data pre-processing to feed the correct data to the model to learn and predict. Model performance depends on the quality of data feeded to the model to train.

This Process includes-

- Handling Null/Missing Values
- Handling Skewed Data
- Outliers Detection and Removal

Data Cleaning

Data cleaning is the process of fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a dataset.

- Remove duplicate or irrelevant observations
- Filter unwanted outliers
- Renaming required attributes

Exploratory Data Analysis (EDA)

Exploratory Data Analysis refers to the critical process of performing initial investigations on data to discover patterns, spot anomalies, test hypothesis and to check assumptions with the help of summary statistics and graphical representations

Reporting

Reporting is a most important and underrated skill of a data analytics field. Because being a Data Analyst you should be good in easy and self-explanatory report because your model will be used by many stakeholders who are not from technical background.

- High Level Design Document (HLD)
- Low Level Design Document (LLD)
- Architecture
- Wireframe
- Detailed Project Report
- Power Point Presentation

Modelling

Data Modelling is the process of analysing the data objects and their relationship to the other objects. It is used to analyse the data requirements that are required for the business processes. The data models are created for the data to be stored in a database. The Data Model's main focus is on what data is needed and how we have to organize data rather than what operations we have to perform.