Understanding Flight Price Prediction

This project is an excellent starting point for beginners. It introduces key concepts of data visualization using the widely accessible Excel software. It allows newcomers to work with real-world data that's both relatable and potentially useful in their own lives.

The project provides hands-on experience in transforming raw numerical data into a visual format that can reveal patterns in flight pricing, such as which days tend to be cheaper or more expensive for travel.

Airlines Dataset

EDA Questions

1. **Airlines vs. Price**
    - **Question**: How do average ticket prices compare across different airlines?
    - **Visualization**: Bar chart showing average ticket prices for each airline.
2. **Price Sensitivity to Booking Time**
    - **Question**: How does the price of tickets vary as the departure date approaches?
    - **Visualization**: Line graph showing average ticket prices as a function of days left until departure.
3. **Impact of Departure and Arrival Times**
    - **Question**: How do ticket prices vary across different departure and arrival time bins?
    - **Visualization**: Heatmap displaying average ticket prices with departure times on the x-axis and arrival times on the y-axis.
4. **Source and Destination City Price Variability**
    - **Question**: How does the average ticket price change based on different combinations of source and destination cities?
    - **Visualization**: Heatmap or a grouped bar chart showing average prices for each source-destination pair.
5. **Class Type Influence on Prices**
    - **Question**: What is the price difference between economy and business class tickets?
    - **Visualization**: Box plots comparing the distribution of prices between economy and business class.

Additional EDA Questions

6. **Influence of Flight Duration on Price**
    - **Question**: Is there a correlation between the duration of the flight and the ticket price?

    - **Visualization**: Scatter plot with trend line showing flight duration vs. price.

7. **Effect of Number of Stops on Price**
    - **Question**: How does the number of stops affect the price of flight tickets?
    - **Visualization**: Box plot showing price distributions for flights with different numbers of stops.
8. **Day of the Week Trends**
    - **Question**: Does the day of the week on which a flight is booked affect the price?
    - **Visualization**: Bar chart showing average prices by day of the week of booking.

Suggested Visualizations

- **Bar Charts**: Useful for comparing categorical data like airlines or number of stops with price.
- **Line Graphs**: Effective for showing trends over time, such as price changes as departure approaches.
- **Heatmaps**: Good for visualizing the interaction effects between two categorical variables like departure and arrival times or source and destination cities.
- **Box Plots**: Ideal for comparing price distributions across different classes or examining the spread and outliers in data.
- **Scatter Plots**: Useful for identifying relationships between continuous variables like duration and price.