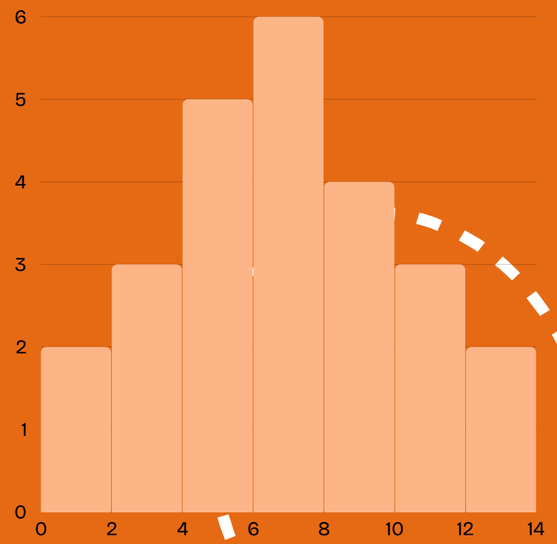
AIRLINES CUSTOMER SATISFACTION ANALYSIS



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PROBLEM STATEMENT

- The airline industry, hit hard by the pandemic and recession, with ICAO estimating a **$371 billion loss in 2020** , must now focus on improving passenger satisfaction to recover

- This project aims to build a **binary classification model** that predicts whether a passenger is **Satisfied or Neutral/Dissatisfied,** based on **flight experience, service quality, and customer profile**

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HOW WE DO AND WHAT WE DO

- The model considers passenger demographics such as **gender, age, and customer type** to identify **satisfaction trends.**
- Travel details including **type of travel, travel class, and flight distance** are used to capture the **impact of journey characteristics on satisfaction.**
- **Departure and arrival delays** are important features that reflect the effect of **flight disruptions on passenger experience.**
- **Ratings for booking ease, online check-in, and gate location** are included to evaluate **pre-boarding service quality**.
- Inflight services such as **Wi-Fi availability, entertainment, food and drink quality, and seat comfort** help measure **mid-flight satisfaction.**
- On-board service, leg room space, and cleanliness represent the **physical comfort and crew interaction** during the flight.
- Ground services like **check-in efficiency and baggage handling** complete the assessment of the overall passenger journey.
- The target variable is passenger satisfaction, classified as either satisfied or neutral/dissatisfied based on the overall experience

SET

- The dataset is from Kaggle. it provides cutting-edge data science, faster and better than most people ever thought possible. Kaggle offers both public and private data science competitions and on-demand consulting by an elite global talent pool.
- Dataset link https://www.kaggle.com/datasets/teejmahal20/airline-passenger-satisfaction

```
Data columns (total 23 columns):
 #   Column                            Non-Null Count   Dtype
---  ------                            --------------   -----
 0   Gender                            103904 non-null  object
 1   Customer Type                     103904 non-null  object
 2   Age                               103904 non-null  int64
 3   Type of Travel                    103904 non-null  object
 4   Class                             103904 non-null  object
 5   Flight Distance                   103904 non-null  int64
 6   Inflight wifi service             103904 non-null  int64
 7   Departure/Arrival time convenient 103904 non-null  int64
 8   Ease of Online booking            103904 non-null  int64
 9   Gate location                     103904 non-null  int64
 10  Food and drink                    103904 non-null  int64
 11  Online boarding                   103904 non-null  int64
 12  Seat comfort                      103904 non-null  int64
 13  Inflight entertainment            103904 non-null  int64
 14  On-board service                  103904 non-null  int64
 15  Leg room service                  103904 non-null  int64
 16  Baggage handling                  103904 non-null  int64
 17  Checkin service                   103904 non-null  int64
 18  Inflight service                  103904 non-null  int64
 19  Cleanliness                       103904 non-null  int64
 20  Departure Delay in Minutes        103904 non-null  int64
 21  Arrival Delay in Minutes          103594 non-null  float64
 22  satisfaction                      103904 non-null  object
dtypes: float64(1), int64(17), object(5)
memory usage: 18.2+ MB
```

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EXPLORATORY DATA ANALYSIS (EDA)

We used EDA to understand the **data, detect patterns,** and identify important features.

- Analyzed summary statistics to **check distributions and outliers.**
- Used **visualizations like histograms, boxplots, and heatmaps** to explore relationships between **age, travel class, delays, and satisfaction.**
- Identified key trends showing how service quality and customer profiles affect satisfaction.

HEATMAP

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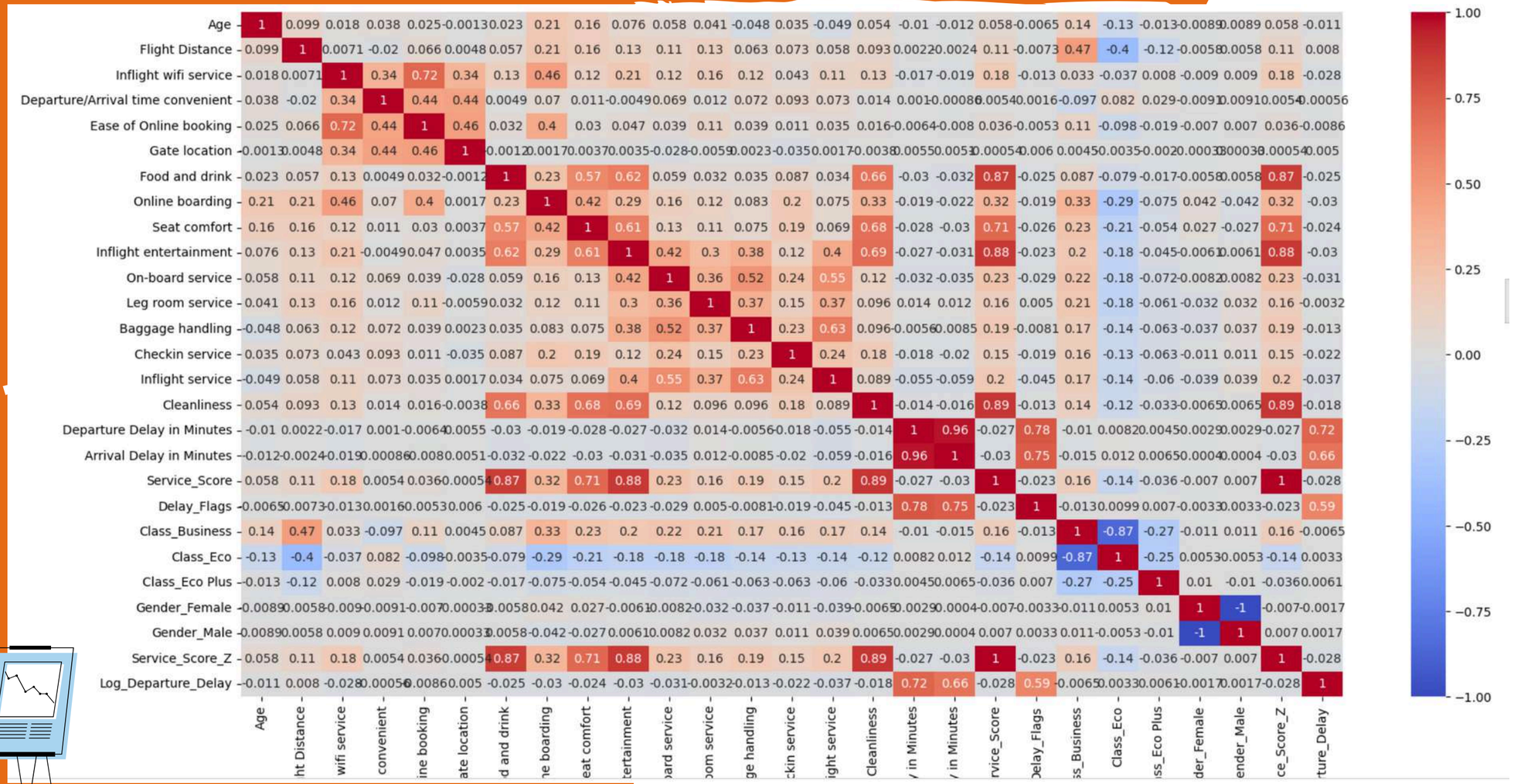
Departure delay in minutes and arrival delay in minutes are highly co-related!



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THANK YOU