Data Description

Daily Stock Price Data

The first two datasets have the same structure, consisting of historical daily stock prices for Airbus (AIR.PA) and Boeing (BA), both from 01/01/2010 to 12/31/2024. They are time series data which show the trend of stock prices of two companies over the past 15 years. The datasets includes:

- Date: The week-ending date.
- Close: Weekly closing stock price.
- High/Low: The highest and lowest stock prices during the week.
- Open: The stock price at the beginning of the week.
- Volume: The number of shares traded.

Aviation Accident Data

The third datasets are aviation accident records for both Airbus and Boeing. These datasets provide insights into past incidents involving aircraft from these manufacturers, allowing for an exploration of how such events may impact stock prices.

Overall, there are a total of 25125 events. Specifically, Boeing had 1325 events records over a 15-year period, while Airbus had 290. There are 19 attributes per dataset, covering various aspects of aviation accidents.

Key Fields in the Dataset:

- EventDate: The date of the accident.
- EventType: Whether the event was an accident (ACC) or an incident (INC) or occurrence (OCC).
- City, State, Country: Location of the event.

- FatalInjuryCount, SeriousInjuryCount, MinorInjuryCount: The number of injuries for each level.
- Latitude, Longitude: The exact location where the events happen
- Make, model: The manufacturer who built the aircrafts and their type
- AirCraftDamage: The severity of the damage (e.g., minor, substantial, destroyed).
- WeatherCondition: Weather conditions at the time of the event.

Exploratory Data Analysis

Descriptive Statistics:

Company	Mean_Close	SD_Close	Min_Close	Max_Close	Median_Close	Mean_Volume
Airbus	72.998	43.202	8.470	174.380	63.924	2026859
Boeing	165.827	93.183	43.778	430.300	146.028	7428269

Observation:

Boeing has a significantly higher stock price than Airbus on average, with a mean of $165.827 compared to Airbus' $72.998. Also, Boeing's stock has experienced more fluctuations over time.

Descriptive Statistics:

Manufacturer	Total_Accidents	Mean_Fatalities	Max_Fatalities	Mean_Serious Injuries	Mean_Minor Injuries
Airbus	290	2.862	224	0.221	0.800
Boeing	1325	1.579	298	0.277	0.758

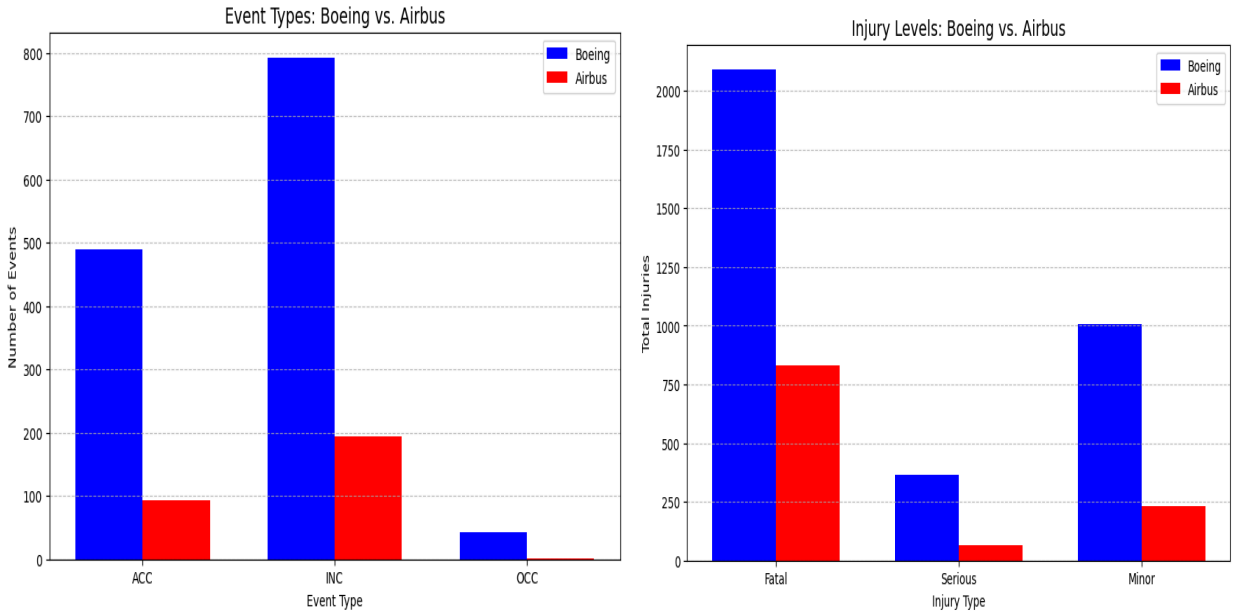
Observation:

Despite fewer total accidents, Airbus has a higher average fatality count per incident (2.862)

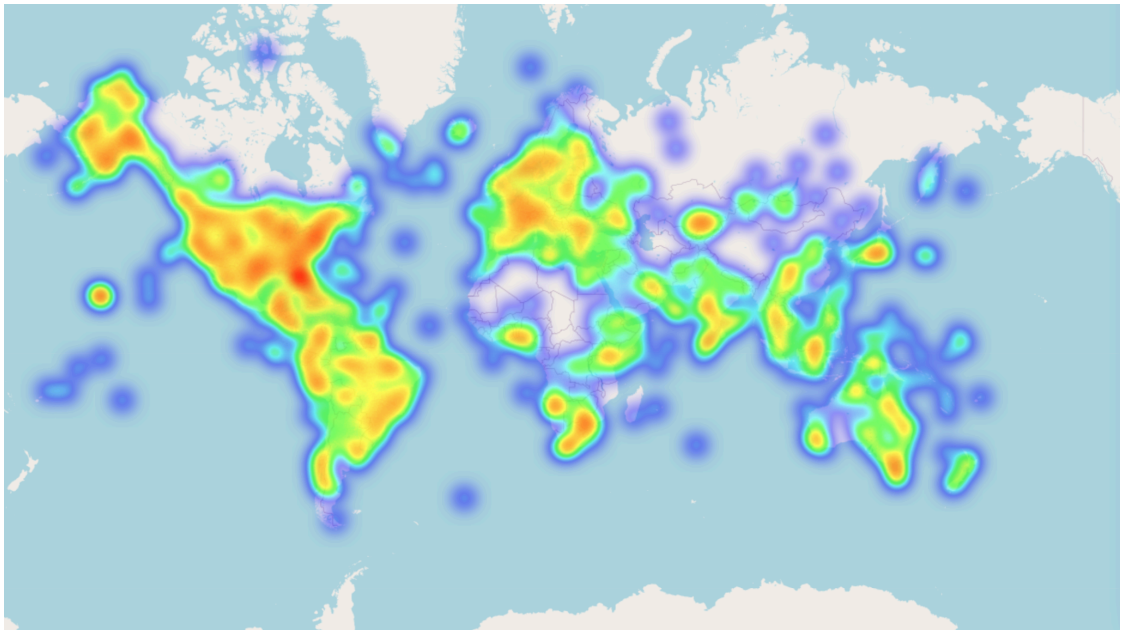
compared to Boeing (1.579), suggesting that Airbus accidents may be more severe on average.

Visualizations:

The time series graph shows the stock price trends of Airbus (red) and Boeing (blue) over time: Boeing experienced significant growth between 2016 and 2019, reaching its peak in early 2019, and a sharp decline occurred in 2020. Airbus showed a more stable and gradual increase, with a significant dip in 2020 but a relatively quicker recovery.



The bar chart on the left compares the distribution of accident types between Airbus and Boeing, showing that Boeing has significantly more recorded incidents (INC) and accidents (ACC) than Airbus. The bar chart on the right compares the distribution of injury severity levels (Fatal, Serious, Minor) between Boeing and Airbus aircraft. Clearly, the number of injuries for Boeing is higher than Airbus in all levels.



The heatmap shows the density of air accidents based on the latitude and longitude. The darker the color is, the higher concentrations of accidents are. We can see that North America and Europe are the place where accidents occur the most.