PRESENTATION~ PHASE ONE PROJECT

BUSINESS UNDERSTANDING

- The National Transportation Safety Board is an independent federal agency charged by Congress
- What it does :

✓ Investigates every civil aviation accident in the United States and significant events in the other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space.

✓ It determines the probable causes of the accidents and events

✓ Investigates and issues safety recommendations aimed at preventing future occurrences.

✓ In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate.

BUSINESS PROBLEM

- ✓ The primary objective is to determine the relationship between various aircraft and their associated risks, such as injuries and damages.
- ✓ The ultimate goal is to provide data-driven recommendations to the company regarding the purchase and operation of aircraft with the lowest potential risks, ensuring safer and more cost-effective operations.

DATA UNDERSTANDING

- The data has the following description in terms of its Shape, Head, Tail, Columns :
- **The First Dataset(USState_Codes)~**

✓Shape:(62 rows,1 column),

✓Head(It displays the first five rows of the dataset 5 rows, 31 Columns)

✓ Tail displays the last rows of the dataset(5 rows, 31 Columns)

✓It contains only the US Stat codes and the various abbreviations

- **The second dataset(AviationData.csv)~**

✓ Shape:(88889- Rows, 31-Columns),

✓ Head(Displays the first five rows of the dataset(5 rows × 31 columns) and

✓ Tail, Displays the last 5 rows:df2.tail(5)(5 rows × 31 columns)

✓ This was the main dataset used for the project in each an every step(Data cleaning, Data analysis)

DATA ANALYSIS

- **FIRST STEP: Data Cleaning,** the first step before visualization of the data:
- The steps taken:

✓Checking on the missing values, decided to drop them viable to work with a small range of values considering the high number of outliers.

✓Dropping duplicates

- **SECOND STEP: Exploratory Data Analysis,** the second step created visuals with the clean data, to bring about relationship between the different variables in the dataset.
- Focus being the three essential analysis types

✓ **Univariate analysis, a statistical technique used to describe and summarize the distribution of a single variable , Example, Count of Accidents by Weather Condition: The variable is the Weather Condition, the count showing the number of times each unique value occurs in a variable**

- ✓ Bivariate Analysis, a statistical technique used to describe and summarize the relationship between two variables, Example Top 10 Aircraft Types Involved in Aviation Accidents: The variables are Aircraft. Type and Number of Accidents
- ✓ Multivariate Analysis, a statistical technique used to describe and summarize the relationship between three or more variables, Example ,Severity of Aviation Accidents by Aircraft Type : The variables are Aircraft. Type Injury. Severity and Number of Accidents

RECOMMENDATIONS

- The Piper PA-28-16 is recommended for purchase and use by the company for client travel. This recommendation is based on the declining number of accidents involving the visualization, as well as its overall lower accident frequency compared to the Cessna aircraft. This suggests that the Piper PA-28-16 may present a lower risk, making it a safer option for the company's operations.
- The company should instead focus on purchasing other aircraft types, such as the -1 206, -1 A330, -1 Airbus, and -1 BE20. These visuals have shown minimal damage in past incidents, indicating a lower risk of losses in terms of both aircraft and human safety. This would provide a more reliable and safer option for the company's operations.
- Diversify Aircraft Purchases ~ The company should consider alternative aircraft makes that prioritize safety while still maintaining high performance standards. While diversifying, it's important not to compromise on quality and reliability, ensuring that safety remains the top priority.

NEXT STEPS

- ✓ The recommendations to be made inline with the companies core principles so as to ensure the business runs as one for the better with clients and companies interest at hand.
- ✓ To Ensure that the business takes into consideration the various recommendations depending on the various resources in place an the duration of time necessary to implement them.