Medsoar Ventures Limited

Data analysis on the proposed
Aviation Department

Summary

Medsoar Limited, known for its success in pharmaceuticals, is taking a new venture into the aviation sector. The company plans to buy and operate aircraft for both commercial and private clients. To make smart choices, it's using data science to analyze aviation records and performance metrics, helping identify the safest and most reliable planes

After using data techniques such as data filtering and analysis we were able to come up with good results

Outline

- Business Problem
- Data
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Business Problem

Medsoar Limited is expanding into the aviation sector by acquiring and operating aircraft for commercial and private enterprises. However, entering a highly regulated and capital-intensive industry comes with significant risks, including safety concerns, operational costs, and aircraft reliability. The company needs a data-driven approach to identify the most suitable planes that minimize risk, optimize efficiency, and ensure long-term profitability.

Data

The data being used in the determining the aircrafts with the lowest risk for the company come from the National Transportation Safety Board that includes aviation accident data from 1962 to 2023 about civil aviation accidents and selected incidents in the United States and international waters. This Data was obtained from Kaggle, a datascience platform which has multiple datasets From this data we can selectively filter out the airplanes that do not fit the company's goals

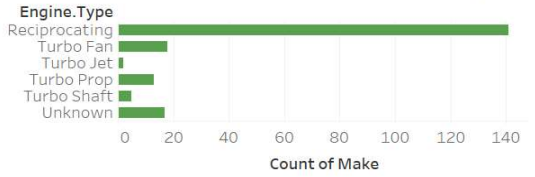
Methods

The data methods that were used were as followed:
In data preparation, we dropped the irrelevant columns and also removed all null values either by dropping them if they did not have a huge effect or using median and mode in that would have an effect.
In analysis, data filtration and other techniques were used this also applied in data modelling
The various tools used in the analyzing of data included: Pandas, numpy, Matplotlib(used in generation of graphs) and Tableau(Dashboard creation)

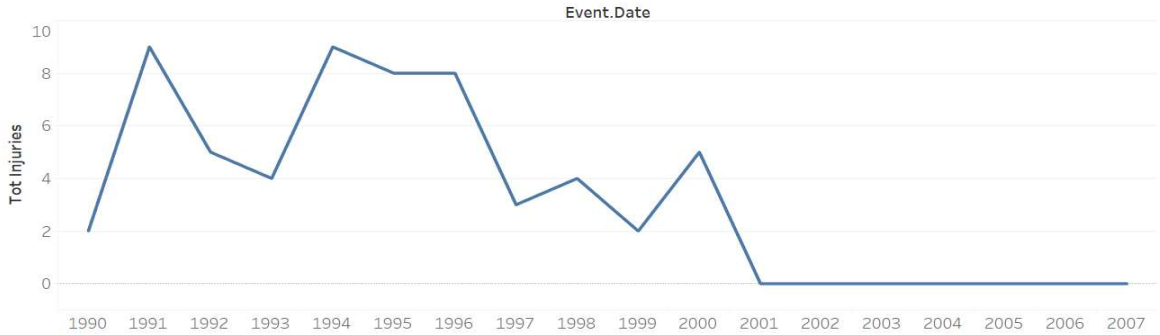
Results

Tableau Desktop Public Edition Buy Tableau

Number of Aircraft using a specific engine

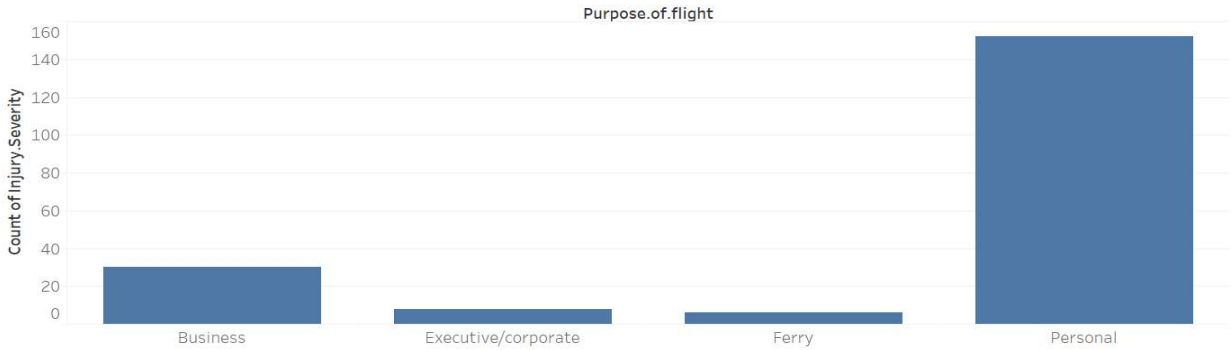


Number of Accidents throughout the year



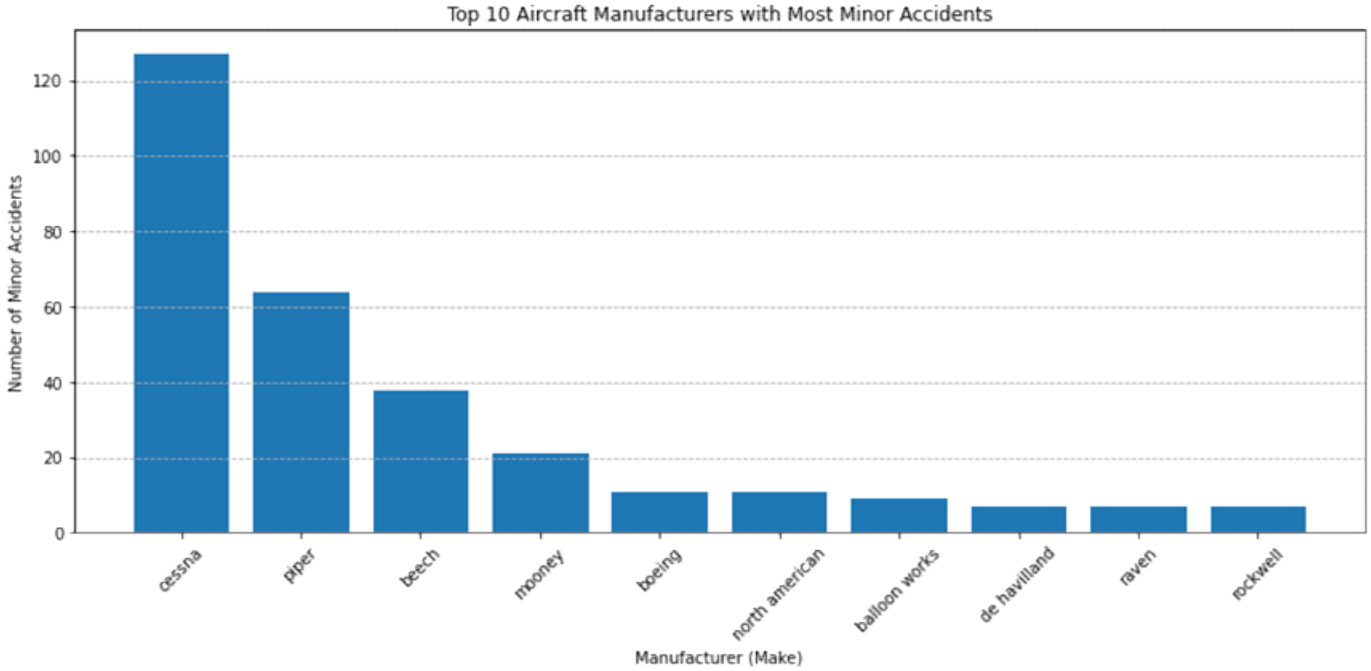
Number of minor Aircraft damage based on broad phase of flight

Count of injury Severity against purpose of plane

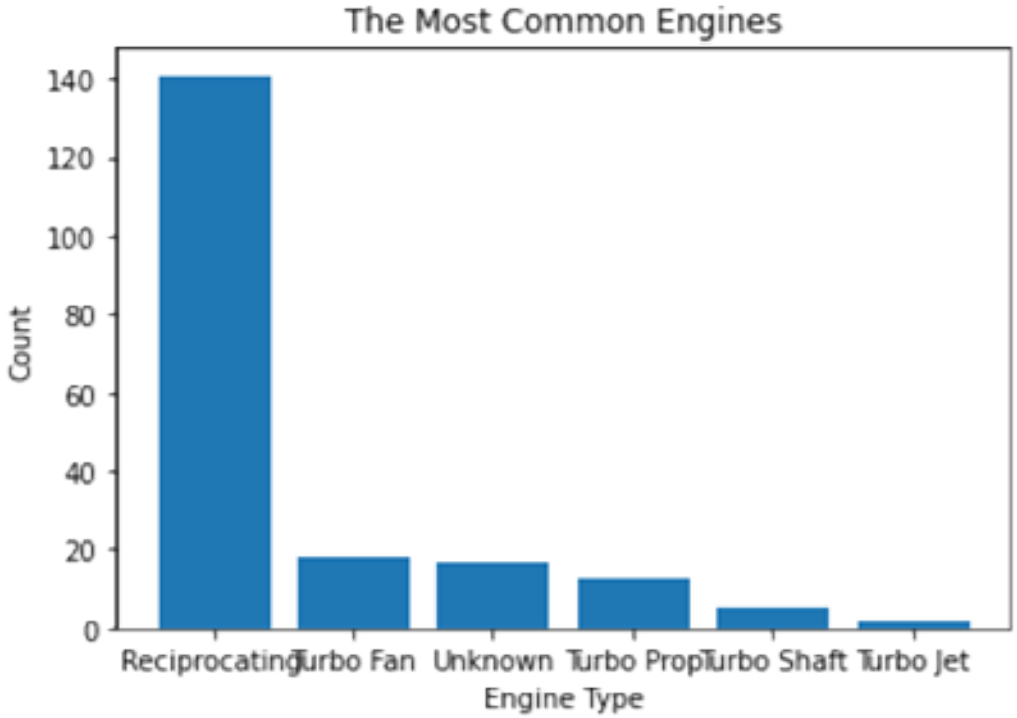


Sheet 1 | Sheet 2 | Sheet 3 | Sheet 4 | Dashboard 1 | Sheet 5

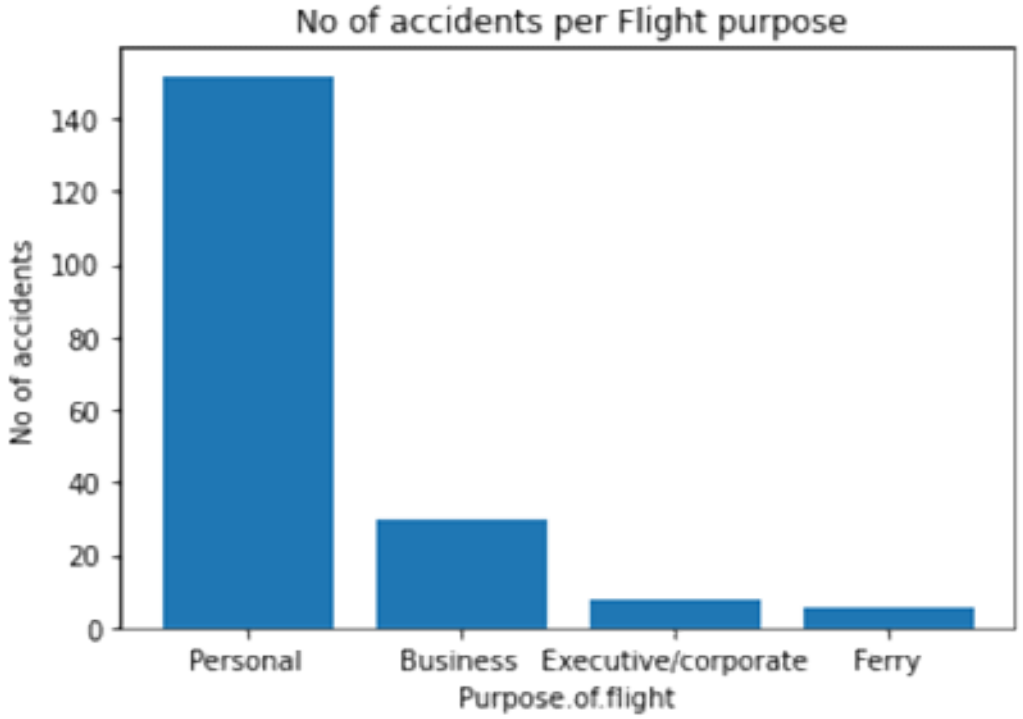
From our analysis it was discovered the best aircraft in terms with the one with the least minor damages was the Cessna



It was also determined the engine with the best reliability and most minor damages was the reciprocating engine



It was also noted the best venture to begin with since it had the least amount of crashes was the commercial aspect. Since the business /commercial planes had the least accidents compared to personal/private ones



Conclusions

In conclusion the entry of Medsoar Venture Limited is totally viable in the context of entering with the lowest risk. I would recommend the company to consider starting with either Cessna planes, a plane with a reciprocating engine, one whose initial purpose was commercial or all the above.

Project limitation: The airplane part that received damage was not described in the dataframe but rather all minor damages were represented by minor…this prevented us from determining whether the minor damage was recurring and if it was an issue with the manufacturer or pilot

Thank You!

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