08.16.24

CANVA CORPORATION

Company Expansion

Aircraft Manufacturers

Agenda

Introduction

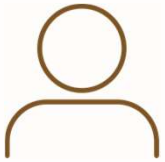
- Recap
- Approach

Data

- Data Source
- Cleaning Data
- Analyzing Data

Recommendations / Conclusions

- Three Recommendations



Next Steps

- Further Analysis

01

Introduction

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Company Expansion

Company wants to expand into new industries to diversify your portfolio. Interested in purchasing and operating airplanes for commercial and private enterprises, but not familiar with potential risks of aircraft. As a result, it is necessary to determine which aircraft are the lowest risk for the company to start this new business endeavor

What is Risk?

Examined the following:

- Number of Fatalities per Aircraft Manufacturer Record
- Number of Serious Injuries per Aircraft Manufacturer Record
- Number of Minor Injuries per Aircraft Manufacturer Record

02

Data

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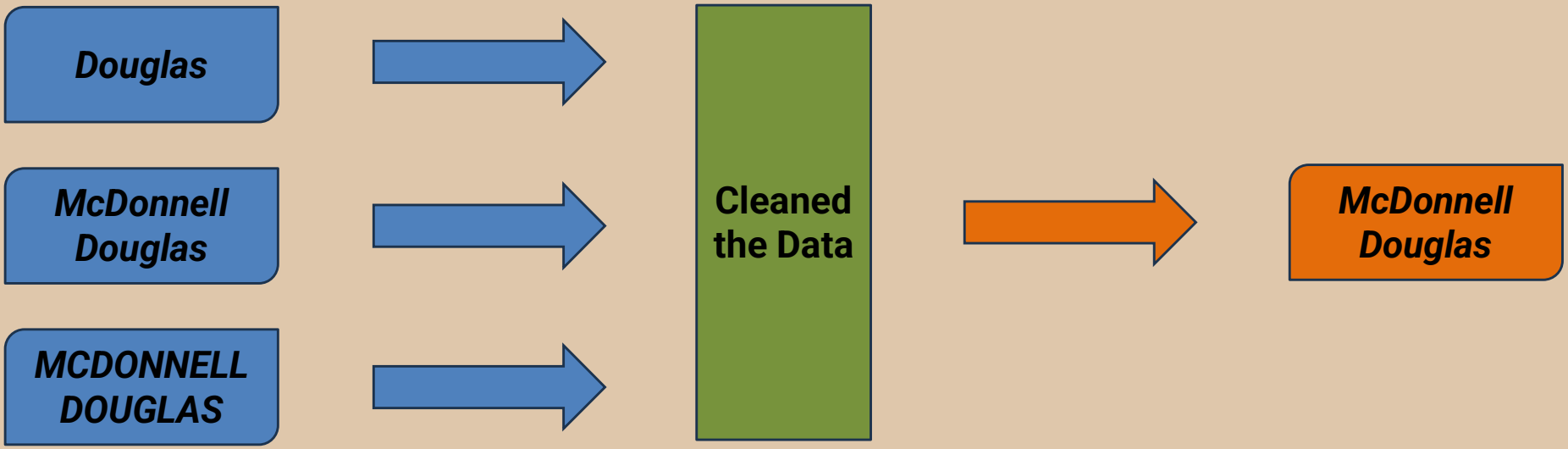
Data Description

- Source of the Data
  - Comes from the National Transportation Safety Board (NTSB)
  - Includes Aviation data from 1962 to 2023
- csv file has 31 Columns and 88,889 Rows of Data
  - Columns contain the following: 1) Accident Number, 2) Number of Engines, 3) Schedule, 4) Weather Condition, 5)
  - Rows of Data represent either an Accident Record (85,015 Rows) or an Incident Record (3,874 Rows)
- Accident vs. Incident
  - An Accident is not the same as an Incident
  - However, I included the Incident Records with the Accident Records

Cleaning the Data

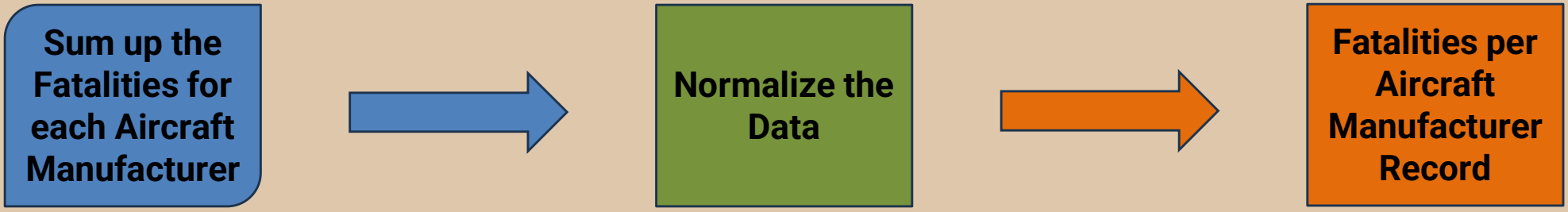
- Aircraft Manufacturer could be listed ways within the data
  - Example:



- There was a total of 22 Aircraft Manufacturers in which I had to clean the names

Data Analysis

- After cleaning the data, I counted there was a total of 8,211 unique Aircraft Manufacturers
- For the Data Analysis, I chose to focus on the 20 Aircraft Manufacturers with the most Accident Records
- For the 20 Aircraft Manufacturers, I performed the following steps:
  - 1) Added all of the Fatalities for each Aircraft Manufacturer
  - 2) Normalized the Data by dividing the Number of Fatalities by the respective Aircraft Manufacturer's Accident Records
  - 3) Repeated Steps 1 and 2 for Serious Injuries and Minor Injuries
  - Example (Fatalities):



03

Recommendations

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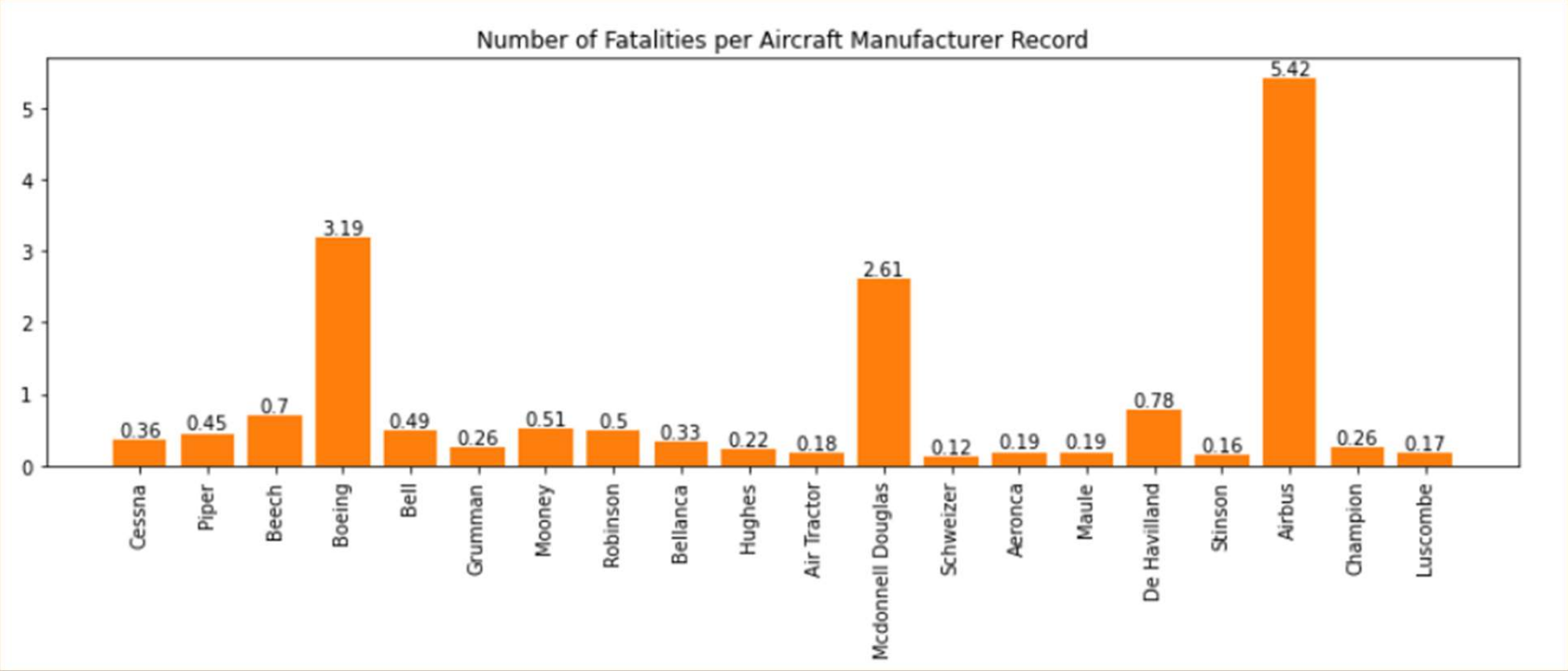
Number of Fatalities per Aircraft Manufacturer Record

recommendation is the following: Air Tractor (0.18), Aeronca (0.19), Maule (0.19), Grumman (0.26), and Bellanca (0.33)

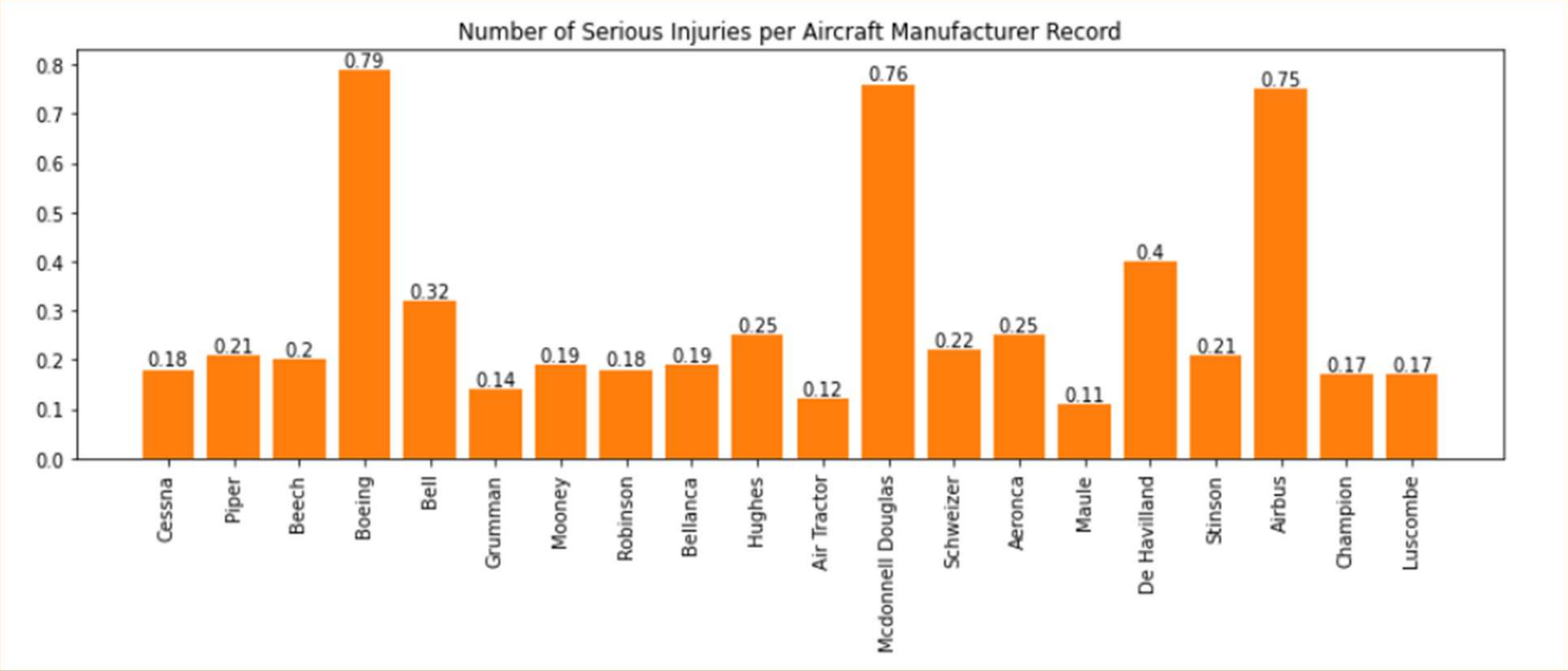
- Schweizer (0.12), Stinson (0.16), Luscombe (0.17), Hughes (0.22), and Champion (0.26), also had good safety records, but they are no longer in existence



Number of Serious Injuries per Aircraft Manufacturer Record

recommendation is the following: Maule (0.11), Air Tractor (0.12), Grumman (0.14), Cessna (0.18), and a tie between Mooney (0.19) and Bellanca (0.19)

- Champion (0.17) and Luscombe (0.17) had good safety records, but they are no longer in existence; and Robinson is a helicopter company (0.18)



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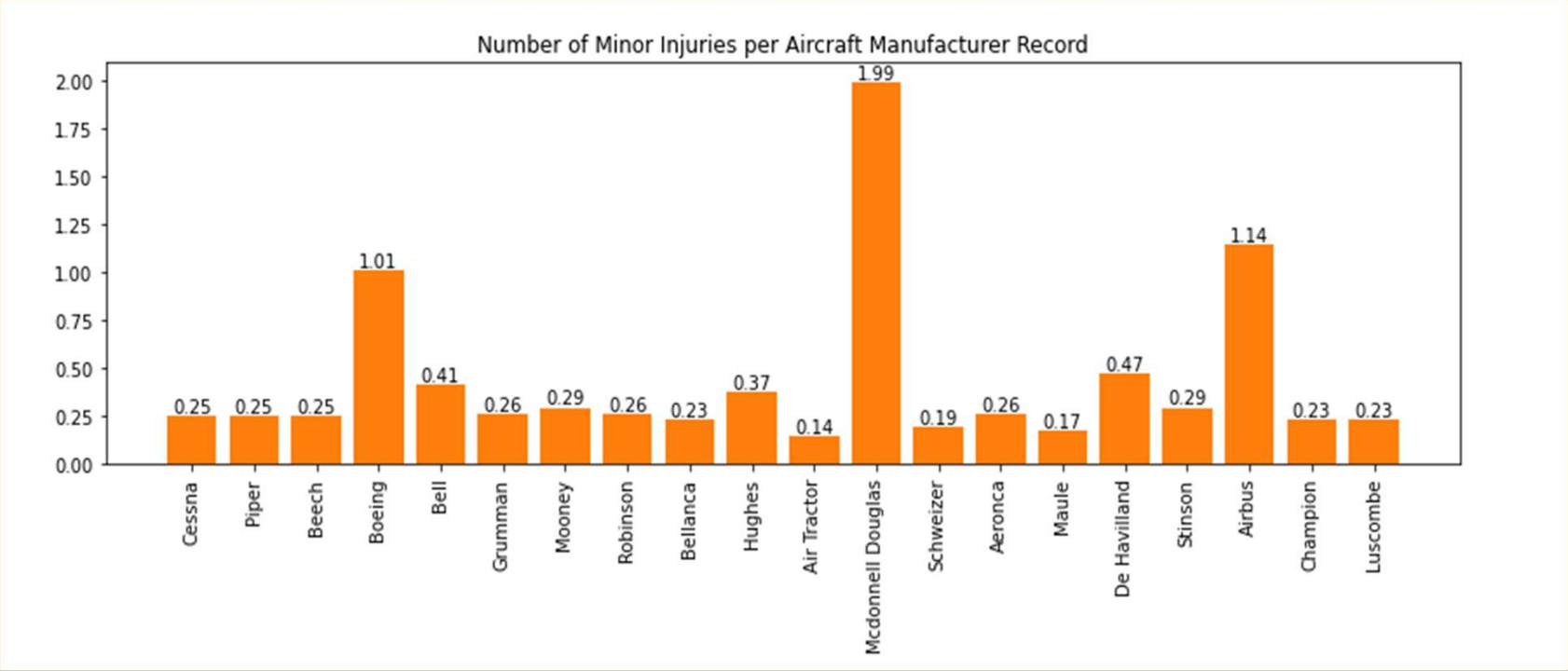
Number of Minor Injuries per Aircraft Manufacturer Record

recommendation is the following: Air Tractor (0.14), Maule (0.17), Bellanca (0.23); a three-way tie between Cessna (0.25), Piper (0.25), and Beech (0.25); and a two-way tie between Grumman (0.26) and Aeronca (0.26)

- As stated prior, Schweizer (0.19), Champion (0.23), and Luscombe (0.23) are no longer in existence; and Robinson (0.26) is a helicopter company



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Conclusion

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Conclusion

- I identified the Aircraft Manufacturers with the top 20 most records in the Aviation Data file. Next, I examined the following – Number of Fatalities per Aircraft Manufacturer Record, Number of Serious Injuries per Aircraft Manufacturer Record, and Number of Minor Injuries per Aircraft Manufacturer Record
  - Regarding the Number of Fatalities per Aircraft Manufacturer Record, I recommend the following Aircaft Manufacturers: Air Tractor (0.18), Aeronca (0.19), Maule (0.19, Grumman (0.26), and Bellanca (0.33)
  - Regarding the Number of Serious Injuries per Aircraft Manufacturer Record, I recommend the following Aircraft Manufacturers: Maule (0.11), Air Tractor (0.12), Grumman (0.14), Cessna (0.18), and a tie between Mooney (0.19) and Bellanca (0.19)
  - Regarding the Number of Minor Injuries per Aircraft Manufacturer Record, I recommend the following Aircraft Manufacturers: Air Tractor (0.14), Maule (0.17), Bellanca (0.23); a three-way tie between Cessna (0.25), Piper (0.25), and Beech (0.25); and a two-way tie between Grumman (0.26) and Aeronca (0.26)

05

Next Steps

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Next Steps

- 1) Aircraft Models
  - Within the recommended Aircraft Manufacturers, identify the aircraft models that produce the following:
    - a) least amount of fatalities per record,
    - b) least amount of serious injuries per record,
    - c) and least amount of minor injuries per record
- 2) Airbus
  - Identify any Airbus models that have safety records in line with recommended aircraft manufacturers
- 3) Factors
  - Identify (any) factors that negatively impact the safety of a flight

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Appendix

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Appendix

- Champion - https://en.wikipedia.org/wiki/Champion_Aircraft
- Hughes - https://en.wikipedia.org/wiki/Hughes_Aircraft_Company
- Luscombe - https://en.wikipedia.org/wiki/Luscombe_Aircraft
- Robinson - https://www.robinsonheli.com/
- Schweizer - https://en.wikipedia.org/wiki/Schweizer_Aircraft
- Stinson - https://en.wikipedia.org/wiki/Stinson_Aircraft_Company