Aviation Accident Analysis

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January 2025

Business Understanding

Purpose:

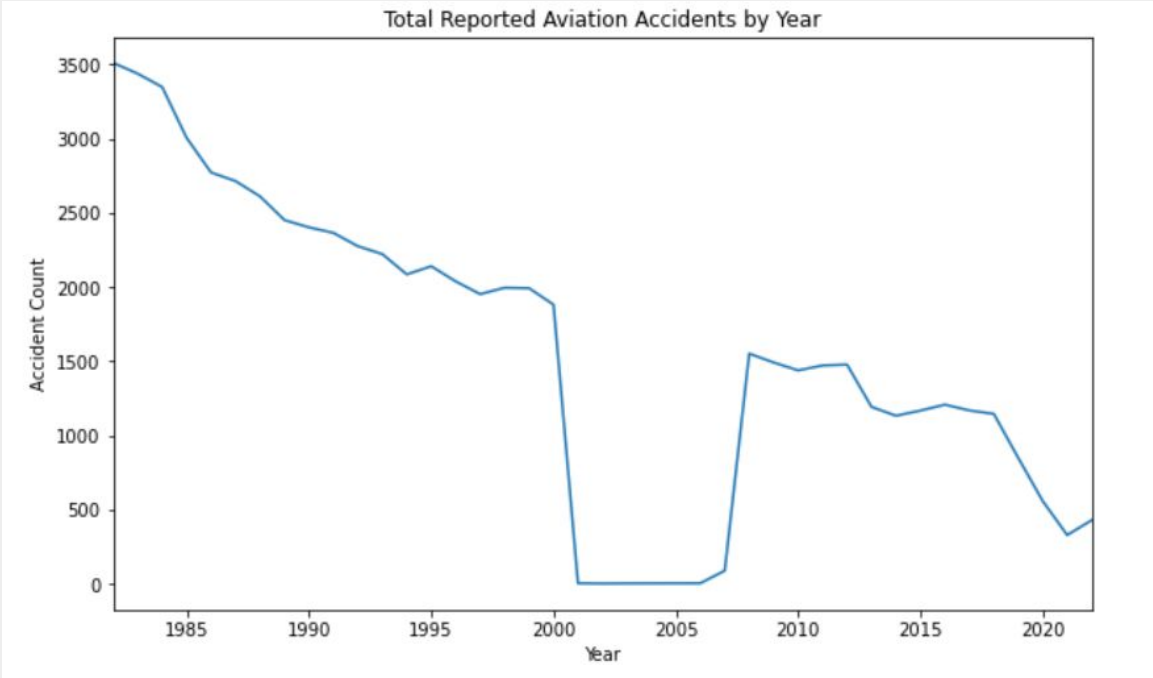
- Clean the data and produce visualizations that will determine which planes best to start with based on safety

Who can use findings:

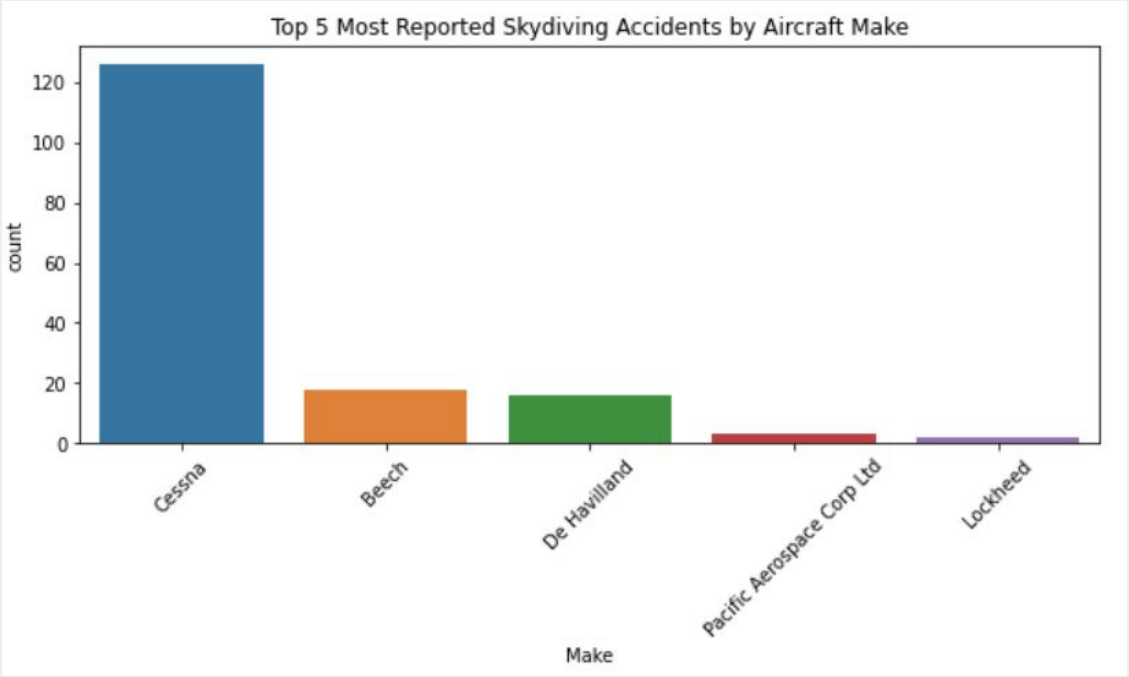
- Indoor Skydiving Business looking to begin offering Outdoor Skydiving
- New Skydiving Business

Data Understanding

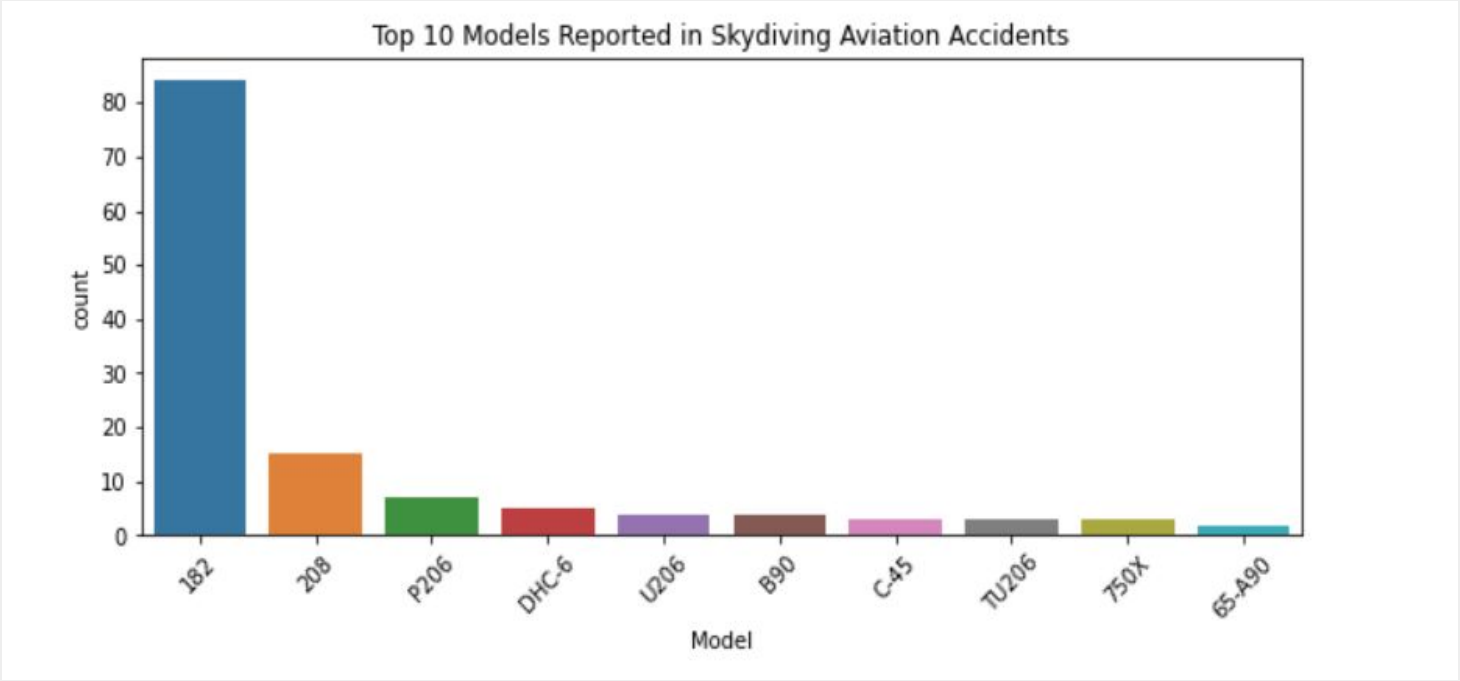
- Assume most commonly reported aircrafts are most common-not dangerous
- Dataset from National Transportation Safety Board
- 90,000+ accidents
- 31 columns



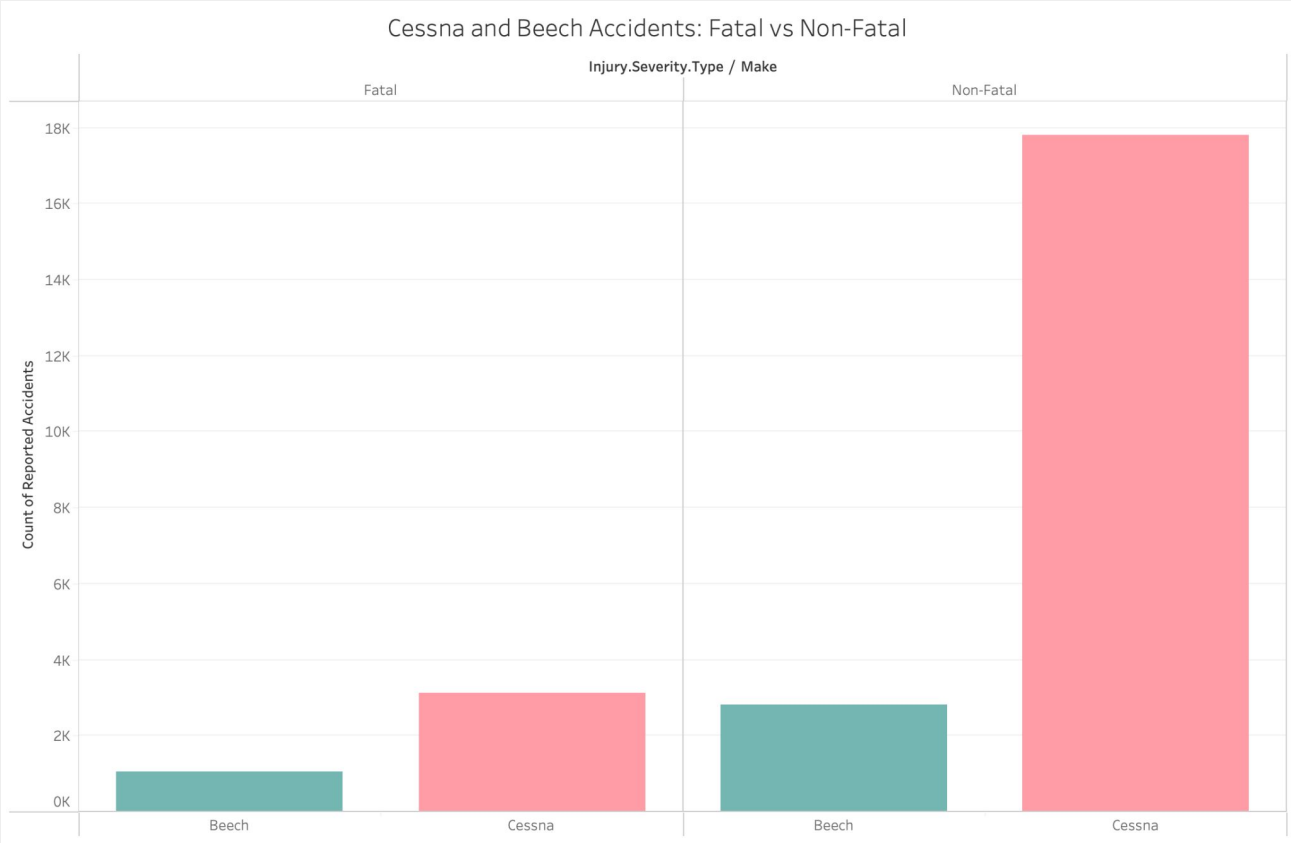
Data Preparation

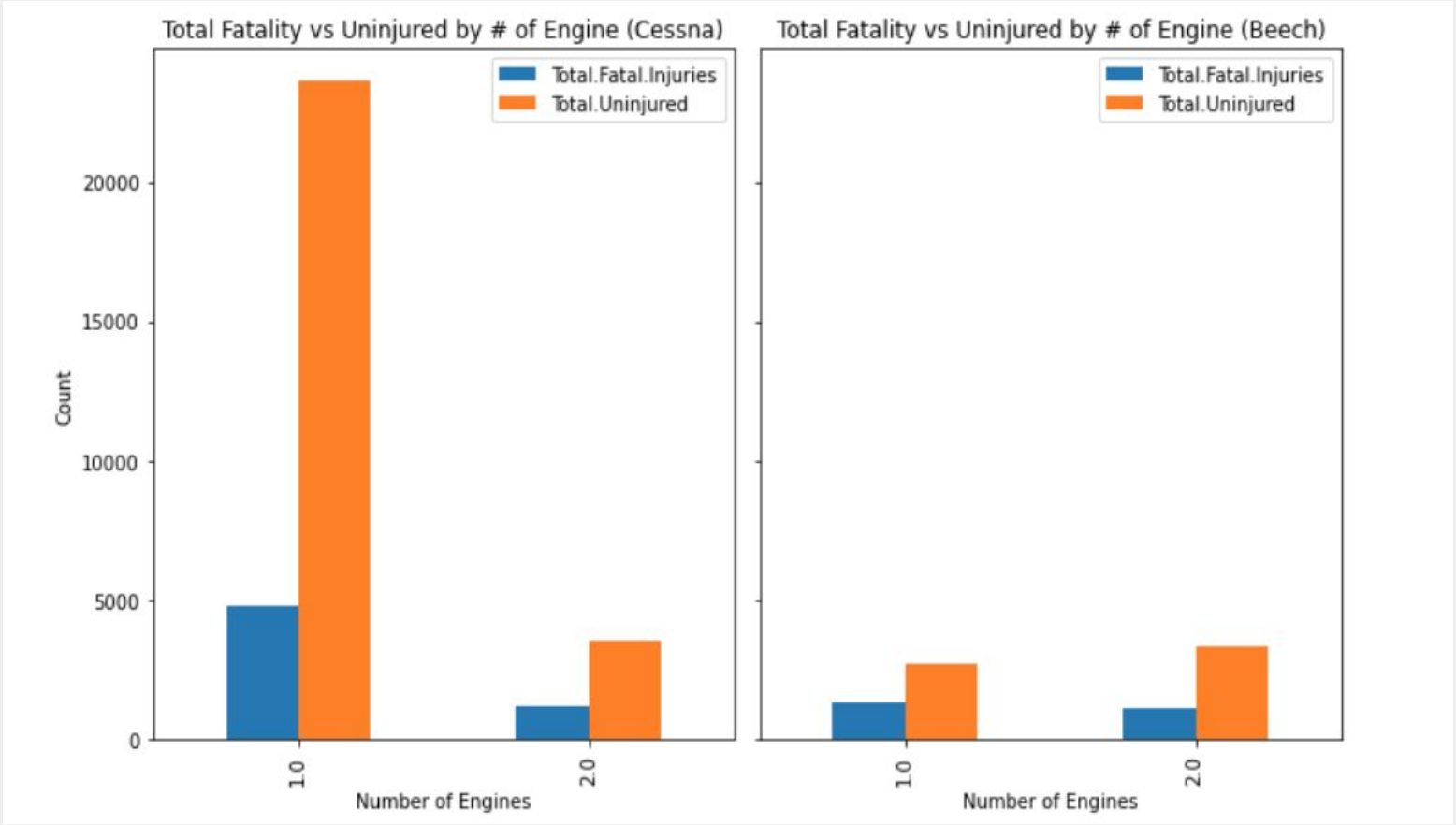


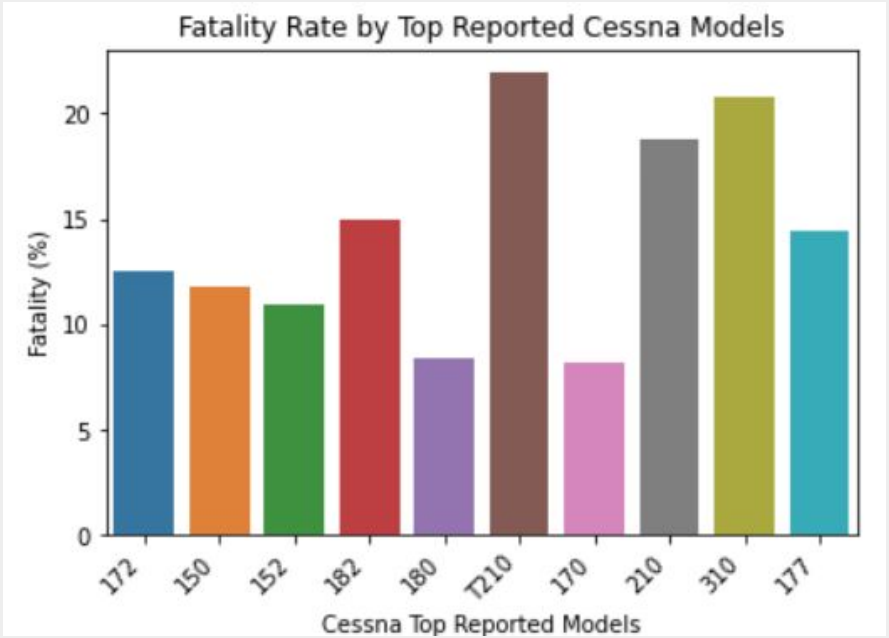
- Clean dataset
- Drop unnecessary columns
- See specifics about skydiving
- Use the skydiving information and re-examine in larger dataset
- Create visualizations

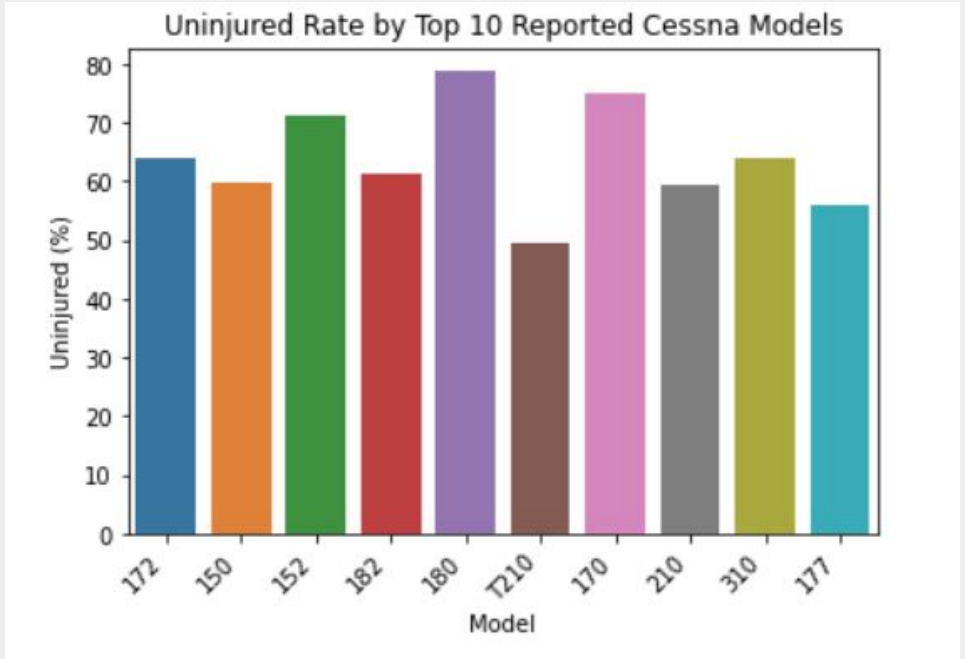

Top 10 Models Reported in Skydiving Aviation Accidents
count
0
10
20
30
40
50
60
70
80
182
208
P206
DHC-6
U206
B90
C-45
TU206
750X
65-A90
Model

Exploratory Data Analysis




Total Fatality vs Uninjured by # of Engine (Cessna)
Total.Fatal.Injuries
Total.Uninjured
20000
15000
10000
5000
0
Count
1.0
2.0
Number of Engines
Total Fatality vs Uninjured by # of Engine (Beech)
Total.Fatal.Injuries
Total.Uninjured
1.0
2.0
Number of Engines


Fatality Rate by Top Reported Cessna Models
Fatality (%)
0
5
10
15
20
172
150
152
182
180
T210
170
210
310
177
Cessna Top Reported Models


Uninjured Rate by Top 10 Reported Cessna Models
Uninjured (%)
0
10
20
30
40
50
60
70
80
172
150
152
182
180
T210
170
210
310
177
Model

Conclusions

Limitations:

- Dataset only includes accidents

Recommendations:

- Cessna top reported models safer than Beech top reported models
- Cessna aircrafts with 1 Engine safer than Cessna aircrafts with 2
- Cessna Models 180 and 170 safer than the other top reported model

Next Steps

- Cause of accidents
- How fast the aircraft can climb to reach desired elevation for jumping
- Safety features related to the exit doors
- Cost of the aircrafts
- Aircraft speed
- Aircraft size/Passenger capacity

Thank you!

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