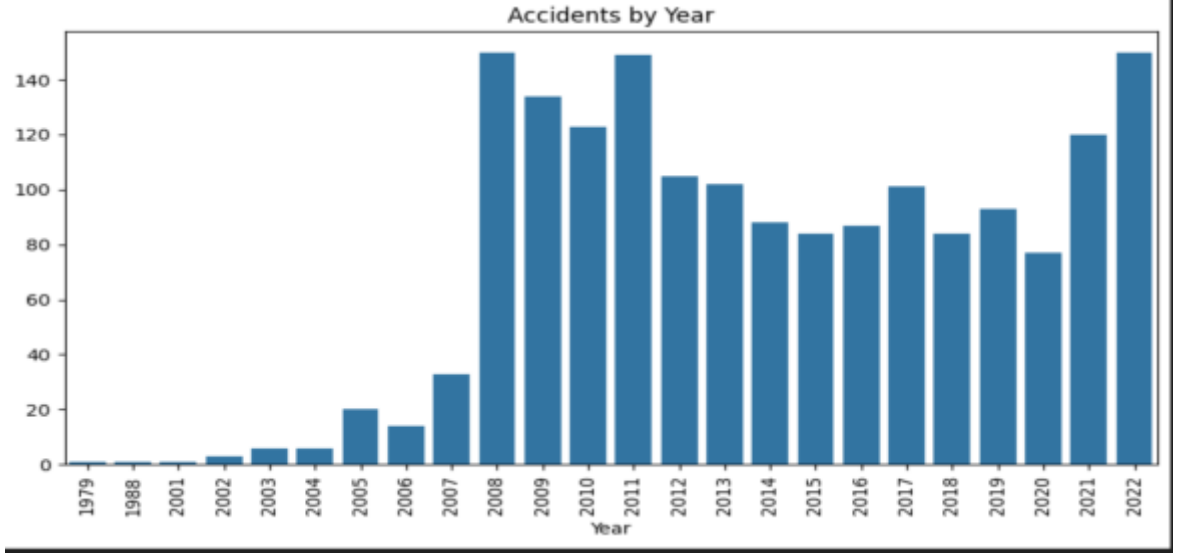
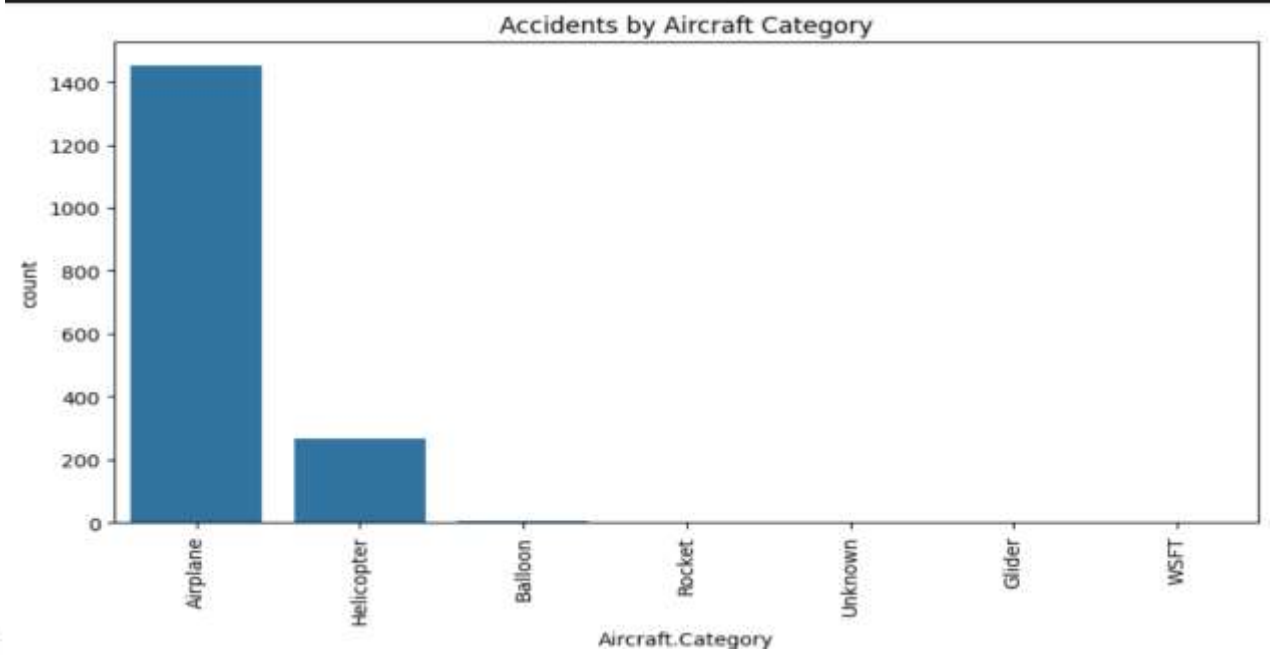
Project overview

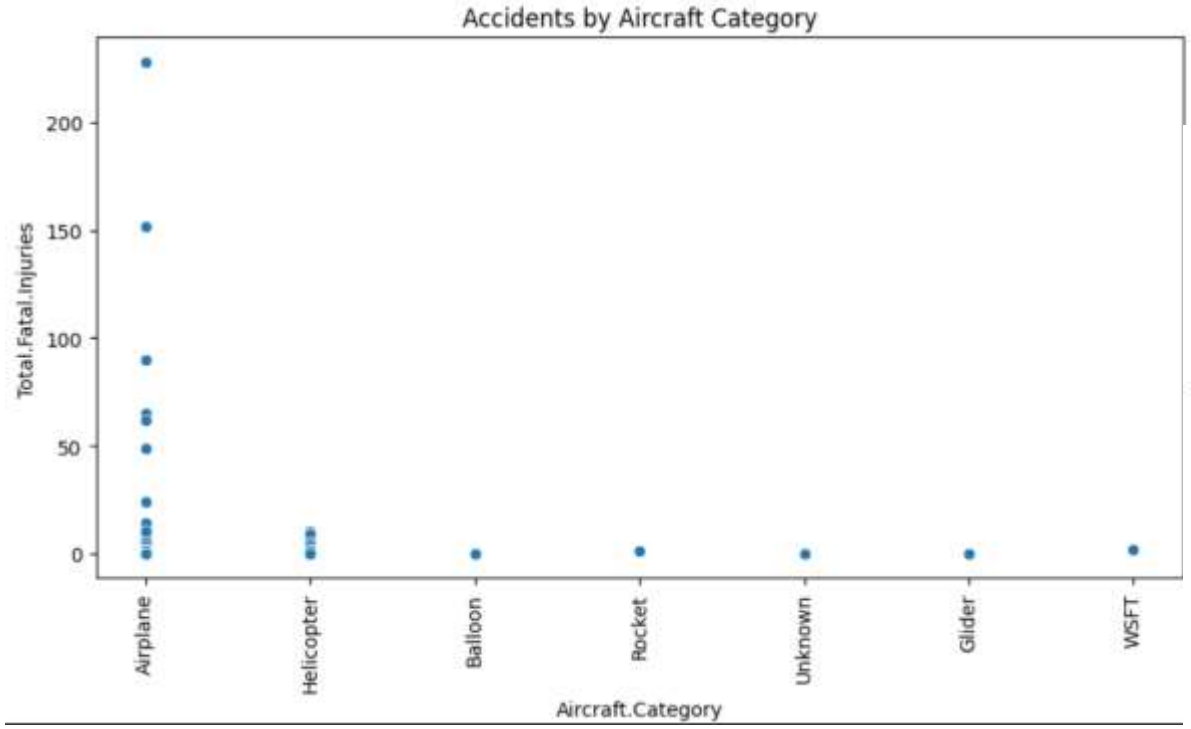
- This project focuses on analyzing aviation accident to establish trends, patterns and relationships .
- The dataset was sourced from the Aviation accident Database & synopsis that contains information about civil aviation accidents and incidents from 1962 to 2023.
- The goal of this project is to clean, visualize and summarize the data to provide meaningful insights while ensuring proper documentation.

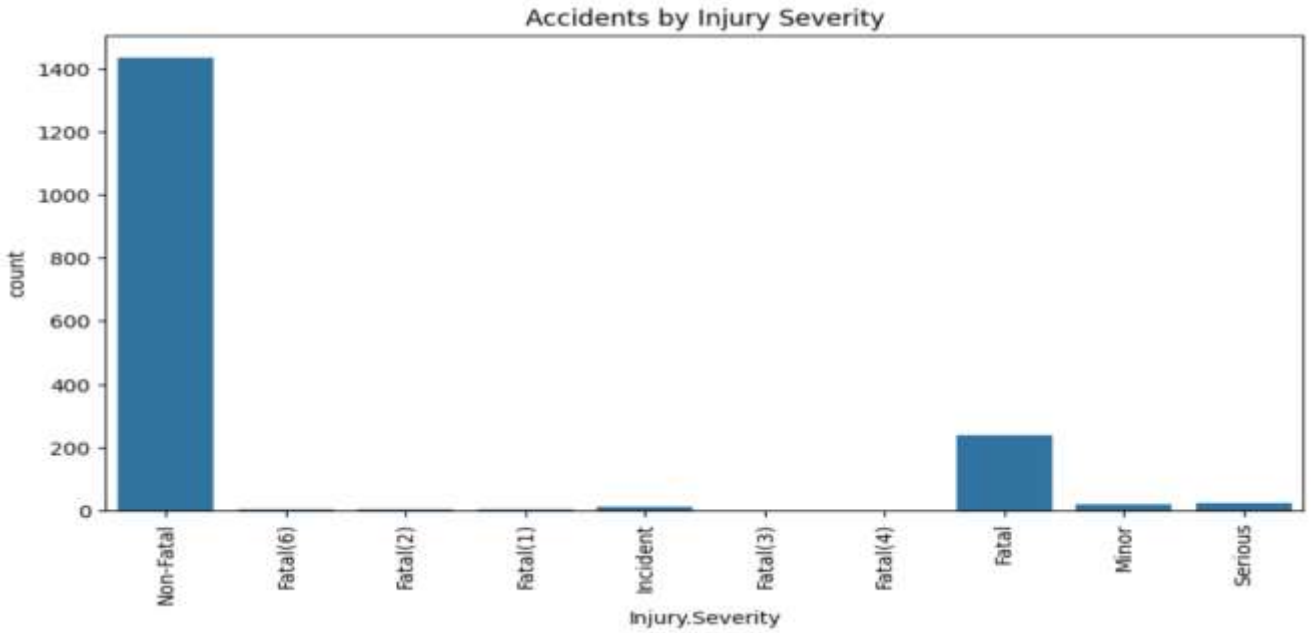
Findings

- The analysis stated how accidents have changed over the years. For instance, There was a noticeable increase and decrease in accident occurrence in a certain period of time. It was potentially linked to technological advancement and changes in regulation from aviation regulatory bodies.
- Strong relationship was established between the type of aircraft and the number of fatalities for example, airplanes recorded most number fatal injuries likely due to their high capacity in carrying passengers compared to other aircraft in the data set.
- The data showed severity of accident providing insights into overall safety trends in aviation.


Accidents by Year
140
120
100
80
60
40
20
0
1979
1988
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year


Accidents by Aircraft Category
1400
1200
1000
800
600
400
200
0
count
Airplane
Helicopter
Balloon
Rocket
Unknown
Glider
WSFT
Aircraft.Category


Accidents by Aircraft Category
200
150
100
50
0
Total.Fatal.Injuries
Airplane
Helicopter
Balloon
Rocket
Unknown
Glider
WSFT
Aircraft.Category


Accidents by Injury Severity
1400
1200
1000
800
600
400
200
0
count
Non-Fatal
Fatal(6)
Fatal(2)
Fatal(1)
Incident
Fatal(3)
Fatal(4)
Fatal
Minor
Serious
Injury.Severity

Limitations

- There were a number of missing data in some columns which were filled with various criteria such as median and unknown depending on the type of data. It may have introduced some bias.
- The data lacked adequate geographical information for instance latitudes and longitudes which limited the ability to map accident location.

Future Directions

- Incorporate detailed location data to identify accidents hotspots and analyze spatial trends.
- Built Model to predict severity of accidents based on factors like aircraft type and weather conditions.
- Study how changes in aviation regulation and safety protocols have impacted accident trends overtime.

Conclusion

- This project provided good insight in aviation setup by analyzing historical events about accident occurrence. It highlighted trends ,relationships and areas of improvement in aviation safety.
- From this observation, future work can be derived to develop predictive tools for better analysis in order to facilitate safety measures reducing the menace.

Contact

- If you have any questions, feel free to reach out to:
- Name: Kevin Oguda
- Email: ogudakevin55@gmail.com
- GitHub: @oguda55