Project Proposal

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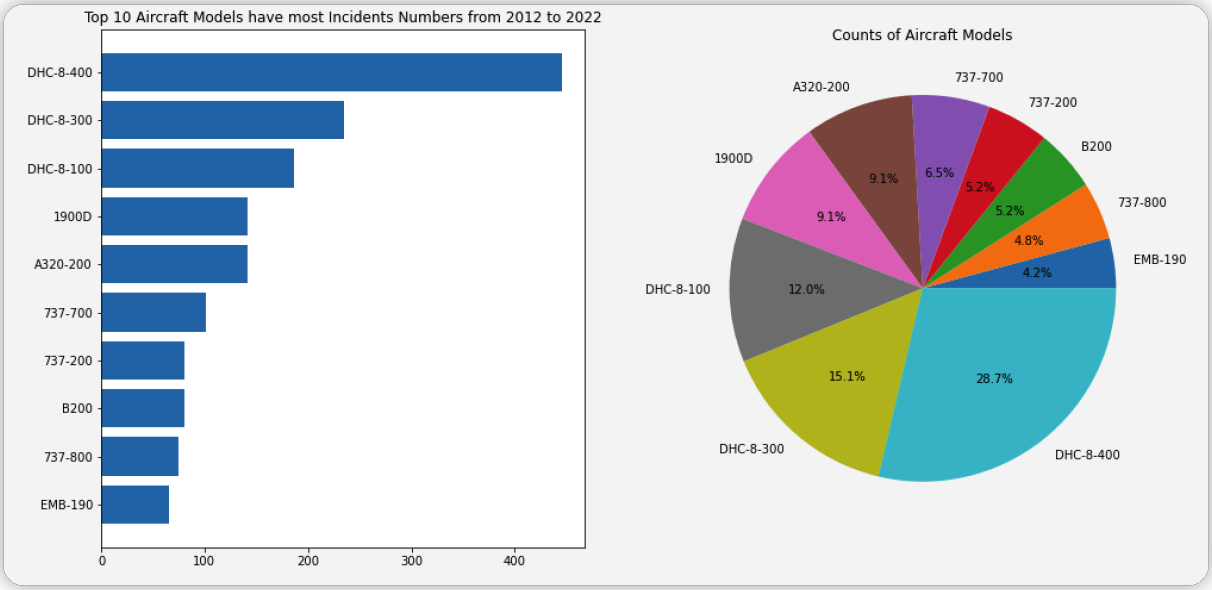
Sub-goal 1: Which models have obvious problems?

The goal is to identify which aircraft models and incident types are most frequently involved in aviation accidents in Canada. By analyzing the models with the most frequent accidents in the last 10 years and the incident types, we can assist clients in identifying potential investment opportunities to improve safety measures.

Visualization Draft:



The above two plots show the top 10 models with the highest number of accidents in the last 10 years (2012-2022). From the graph, we can see that the frequency of accidents in the DHC-8 series is significantly higher than that of other model series. Therefore, I would suggest that my clients investigate the DHC-8 series first.

Further steps:

- Create a line plot with the year on the x-axis and the number of incidents on the y-axis to identify trends. This analysis can help determine whether some models' accident rates are decreasing over time, which may be due to the identification and repair of problems by their manufacturers.
- For models with no decreasing trends and significant data, identify the incident types to narrow the investigation scope and allow clients to locate problems more accurately. I plan to use bar charts and pie charts for this analysis.
- I may convert the plots to Seaborn or other libraries to make them look neater.

Sub-goal 2: Is the occurrence of accidents related to location?

Is the frequency of accidents related to location (longitude, latitude)? Is it related to certain airports?

Visualization Draft:

Created by Tableeu

The visualization above is a point map, where each point represents the location of an accident. The purpose of this visualization is to analyze whether if there is a relationship between the location and the incidents frequency. From the graph, we can see clusters around the US and Canada border, indicating that my clients should look into it.

Further steps:

- Investigate the reasons behind the cluster around the border.

  Further investigate the incident types that occur most frequently in this area.
- Plan to create a roadmap from the departure airport to the arrival airport.
- Integrate the map into a dashboard and make it interactive. Create buttons that clients can use to show or hide the roadmap.