Project Proposal

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Motivation / Inspiration / Case Study:

Initially, our focus was on exploring data concerning major global disasters, including recurrent plane crashes throughout history. This led us to an intriguing research paper titled "The Use of Augmented Reality (AR) Technology in Air Accident Investigation and Training" by A. D'Anniballe, J. Silva, P. Marzocca, and A. Ceruti. The paper highlighted the potential of AR in creating lifelike 3D reconstructions of crash sites, prompting us to delve deeper into historical plane crash data. Our aim is to pinpoint aviation incidents worldwide and examine the interplay between various contributing factors as revealed by the study.

Brief literature review of related projects:
The above research paper examines the potential of augmented reality (AR) in enhancing air accident investigations and investigator training. Although AR has been employed in analyzing car accidents, its application in air accident investigations is yet to be realized. According to experts, this technology could provide a safer and more efficient approach to training investigators without necessitating visits to hazardous crash sites. Despite its limited current usage, there is considerable potential for AR to improve the safety and efficacy of air accident investigations, aligning with our objective of studying patterns in plane crashes.

Where the data that will be used can be found publicly:
The data is originally available in Bureau of Aircraft Accidents archives and the other datasets are also available in Bureau of Transportation Statistics, but the data is publicly found in Kaggle. This dataset includes year of accident, country, Flight phase, flight type, crash terrains etcetera.

Bureau of Aircraft Accidents archives - https://www.baaa-acro.com/crash-archives
Bureau of Transportation Statistics - https://www.bts.gov/content/air-passenger-travel-arrivals-united-states-selected-foreign-countries-thousands-passengers
Kaggle - https://www.kaggle.com/datasets/abeperez/historical-plane-crash-data?select=Plane+Crashes.xlsx

Tasks, Insights, and Research Questions:

1. How many aircraft crashes have occurred in each country?
2. Do aircraft crash causes have a relationship to the year aircrafts were manufactured?
3. Are there any patterns in crash site related to the type of aircraft involved?
4. Investigate relation between survivor rate and crash causes?
5. In which phase of a flight is the fatality rate highest?
6. What factors contribute to crashes, categorized by the type of aircraft?
7. Examine the occurrences of peak crash hours.