1. INTRODUCTION

1.1Overview

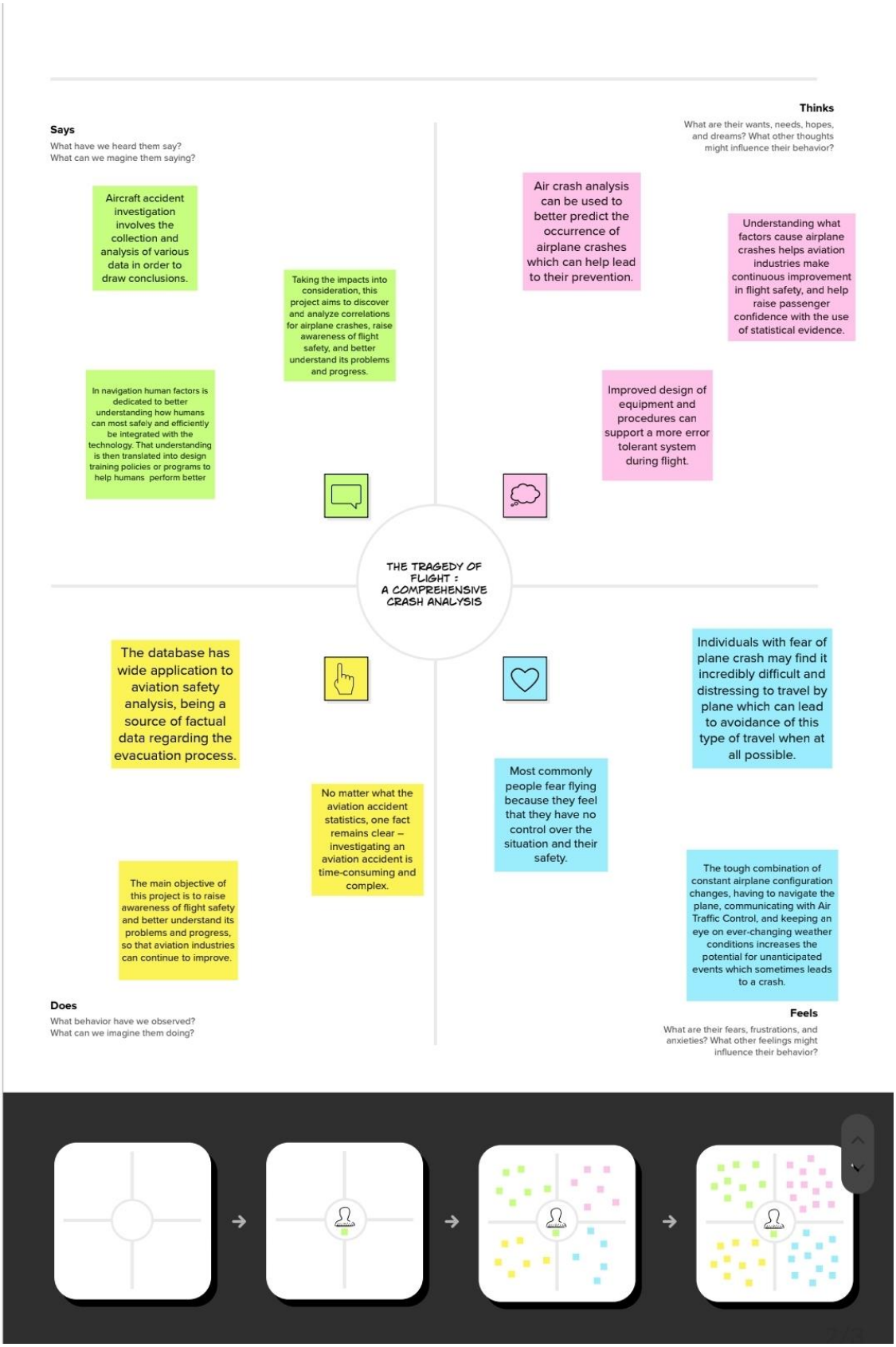
An airplane crash analysis is a detailed investigation into the causes of an aviation accident. The goal of an airplane crash analysis is to identify any factors that contributed to the accident, with the ultimate goal of improving safety and preventing future accidents. The process of conducting an airplane crash analysis typically involves the collection and analysis of a wide range of data, including information about the aircraft and its systems, the operators, and any other relevant factors. Once the data has been collected, it is analysed through tableau, to identify any potential causes of the accident. The results of an airplane crash analysis are typically published in a report, which may include recommendations for improving safety and preventing similar accidents in the future.

1.2Purpose

The main purpose of this project is to raise awareness of fight safety and better understand its problems and progress, so that aviation industries can continue to improve. Aviation accident analysis is performed to determine the cause of errors once an accident has happened. In the modern aviation industry, it is also used to analyse a database of past accidents in order to prevent an accident from happening. The primary purpose of airplane crash investigation is to determine the cause of the crash and any contributing factors involved in the crash.

2. PROBLEM DEFINITION & DESIGN THINKING

2.1Empathy Map



2.2Ideation & Brainstorming Map

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP

You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

Person 1

- Radio Miscommunication
- Pilot handling error
- Checklist Failures
- Carrier Negligence

Person 2

- Fuel Exhaustion
- Inclement weather
- Poor runway maintenance
- Low Altitude Operations

Person 3

- Poor Maintenace and repairs.
- Wildlife strikes
- Design and manufacturing error
- GPS for Aircraft

Person 4

- Forcing a landing
- Errors by air traffic controllers
- Mistakes by crew members
- Glide Slope Indicator

Person 5

Person 6

Person 7

Person 8

3

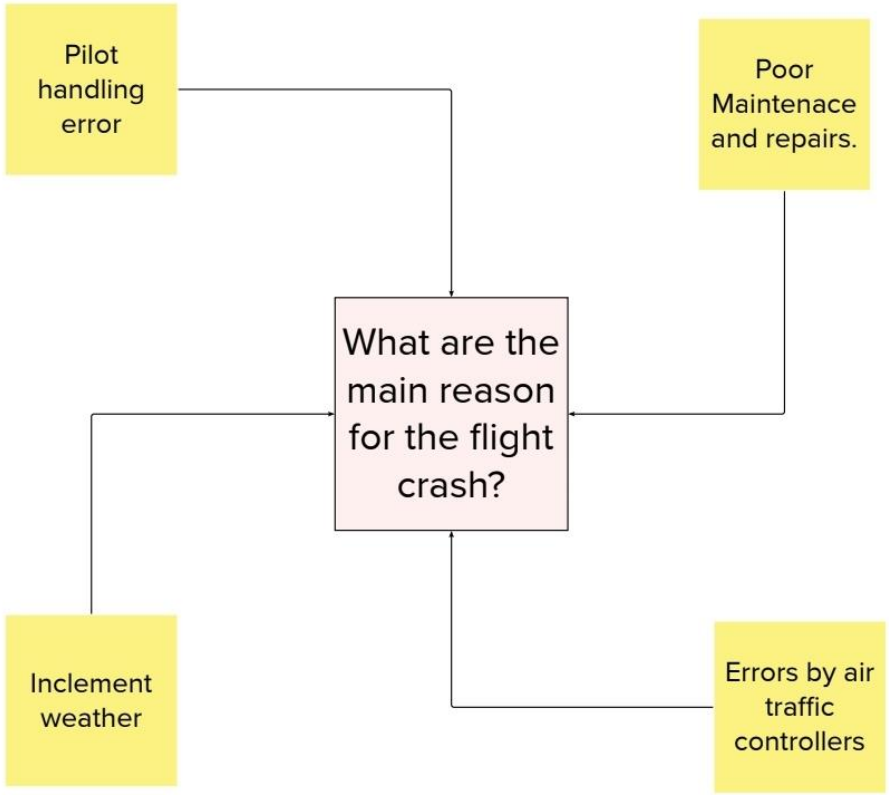
Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

20 minutes

TIP

Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

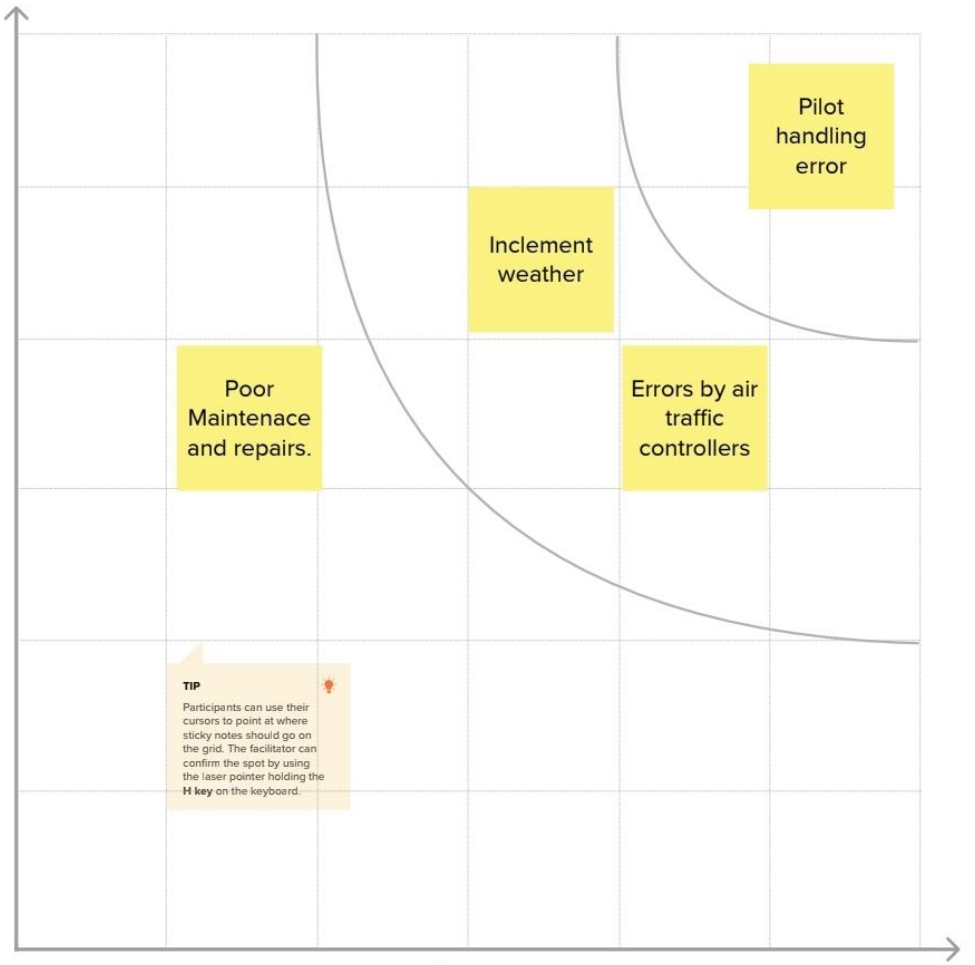


4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes



Importance

If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?

TIP

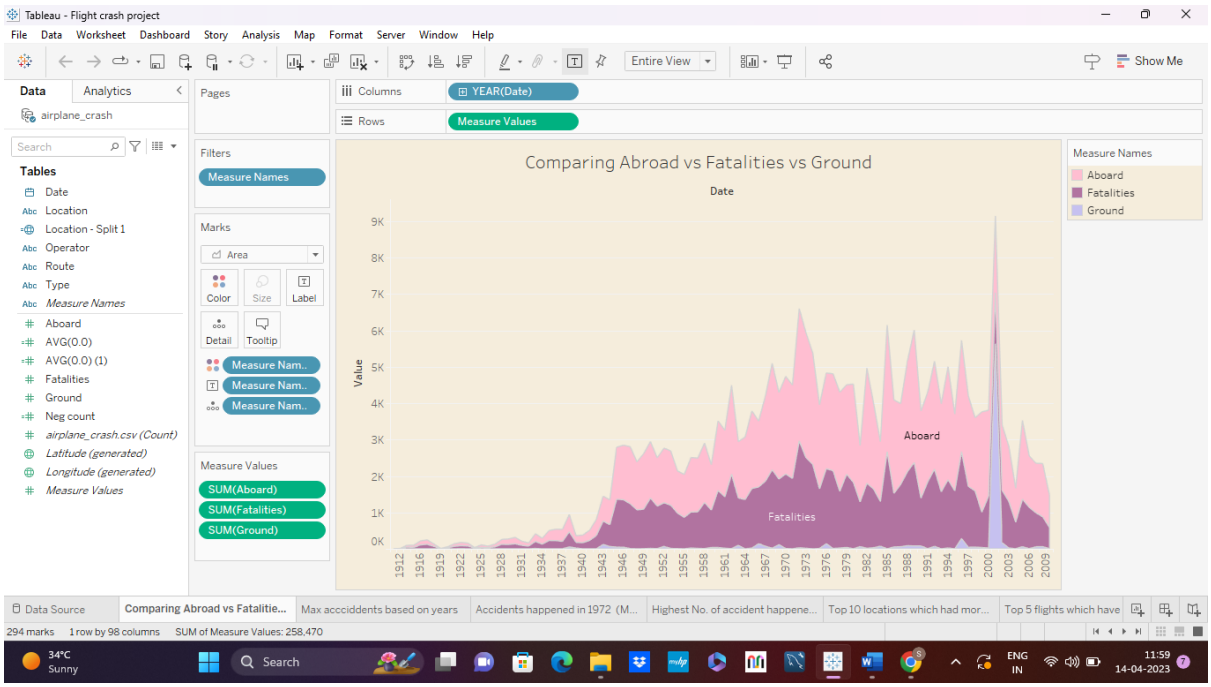
Participants can use their cursors to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the **H key** on the keyboard.

Feasibility

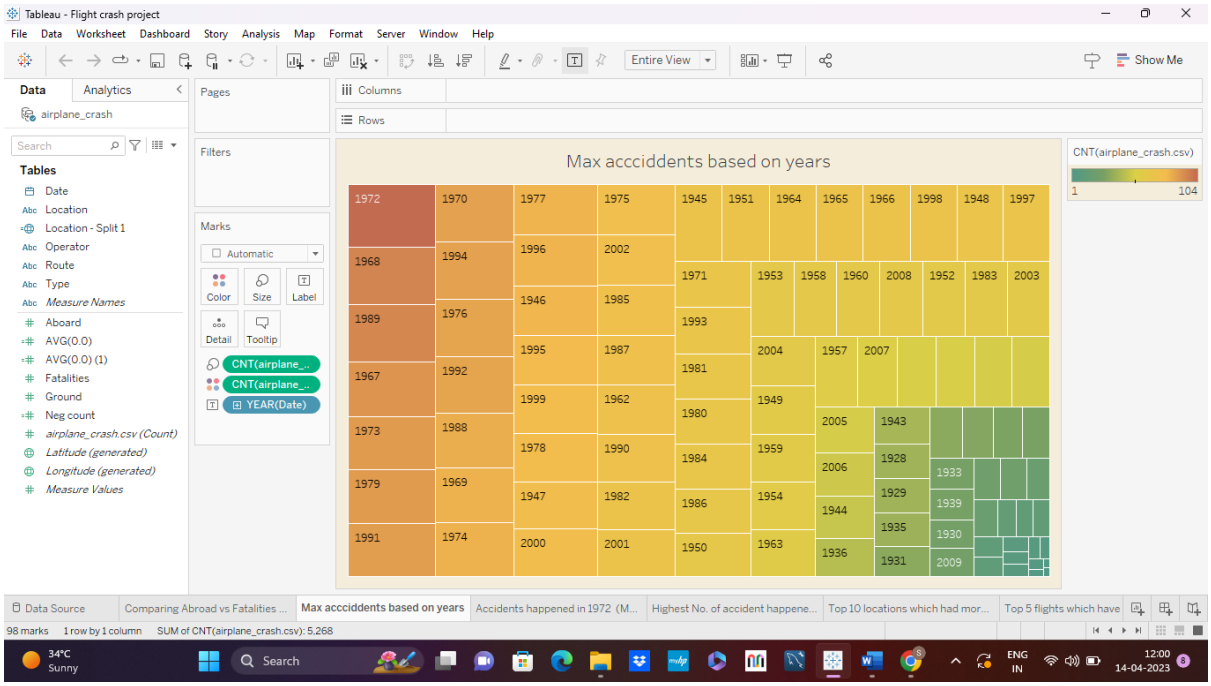
Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)

3. RESULT

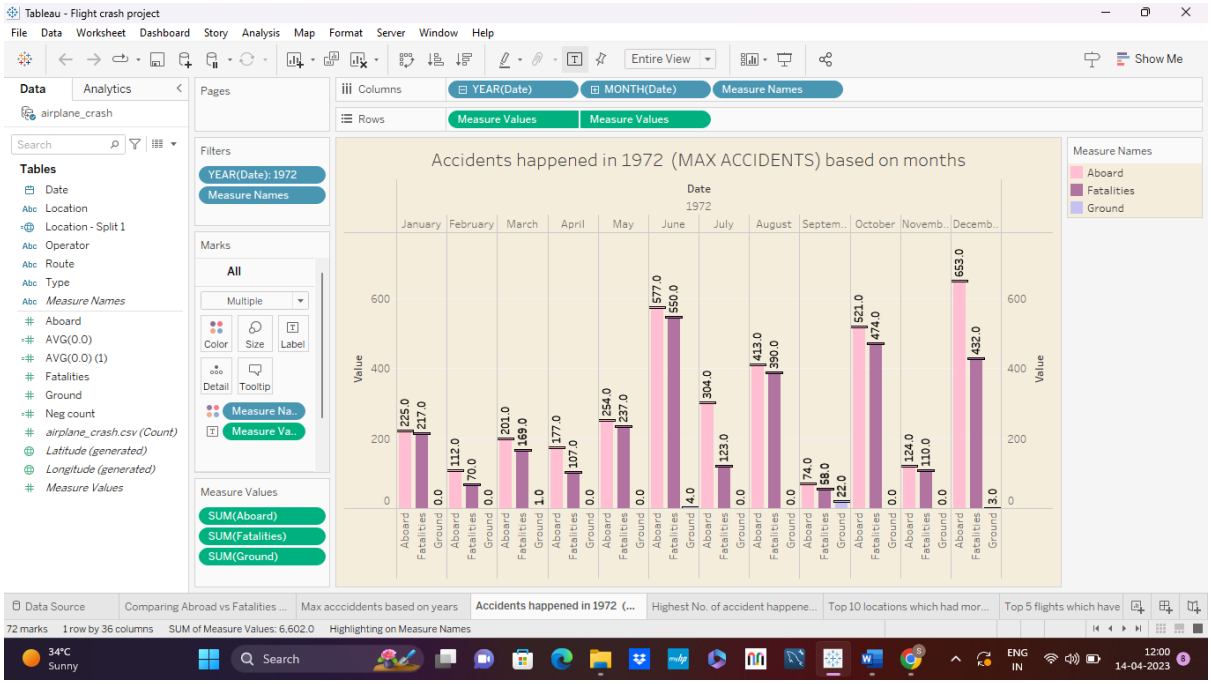
Comparing Abroad vs Fatalities vs Ground



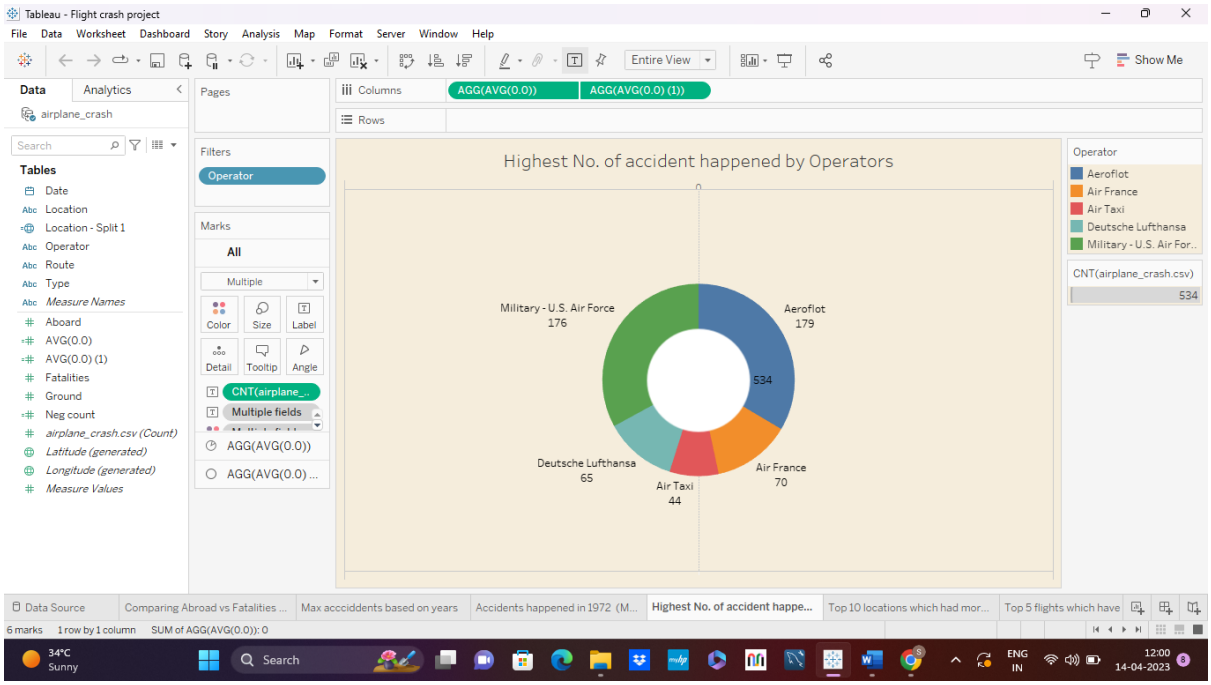
Max accidents based on years



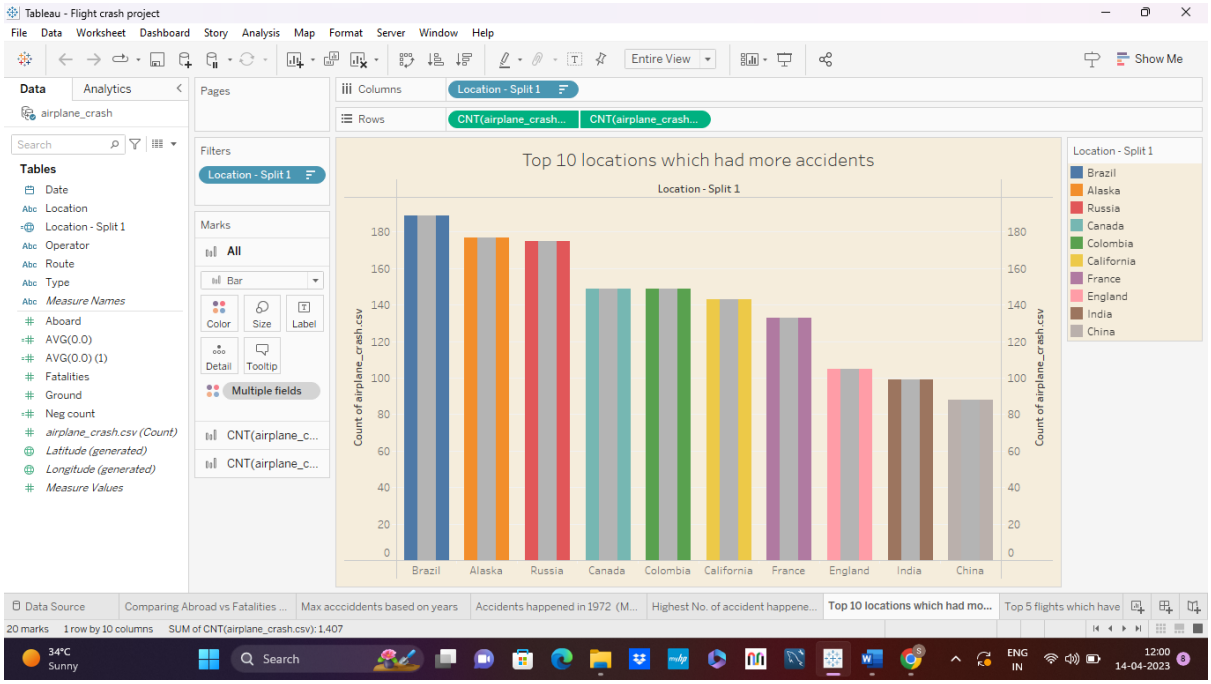
Accident happened in 1972 (MAX ACCIDENTS) based on months



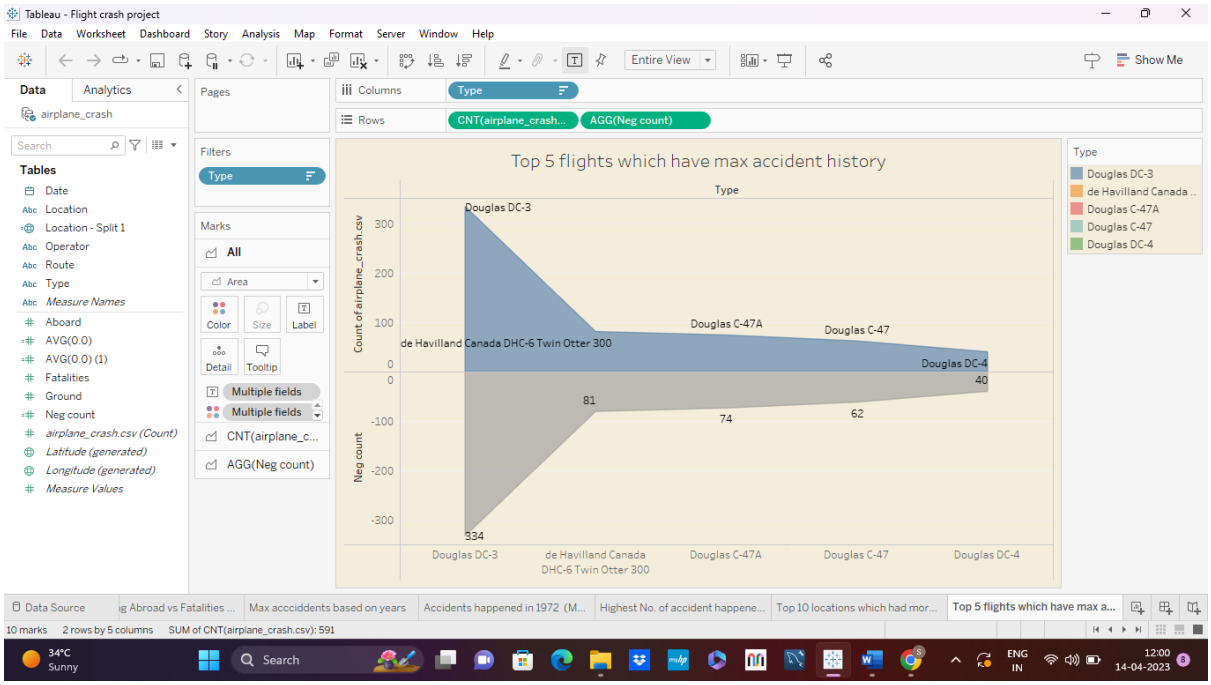
Highest No. of accidents happened by Operators



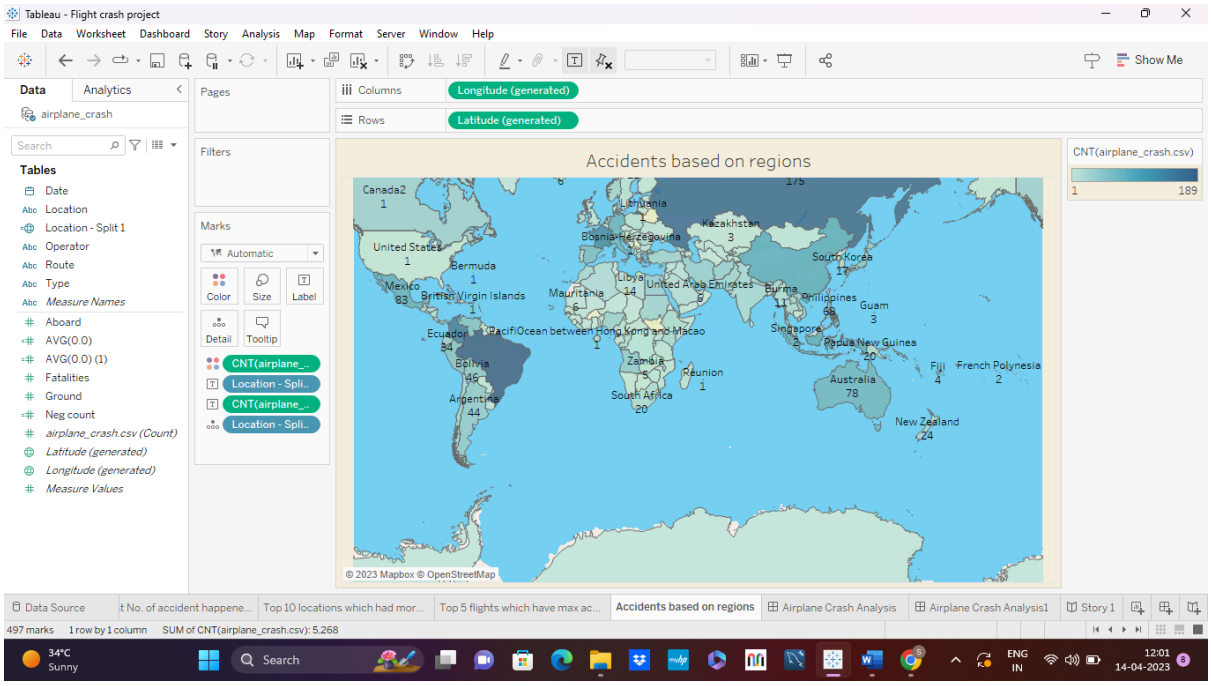
Top 10 locations which had more accidents



Top 5 flights which have more max accident history



Accidents based on regions



4. ADVANTAGES AND DISADVANTAGES

ADVANTAGES:

- The analysis identifies the relation between the accident and incident data and finds the patterns of casual and contributory factors which are significantly associatively with the aircraft accident.
- Improvement of aircraft accident investigation through expert systems.
- It can also help to improve public confidence in the aviation industry by identifying and addressing any safety issues that may have contributed to the incident.
- It would aim to identify any unique challenges or opportunities that to overcome crash.
- This aims to address the gap in knowledge by examining the training needs of air accident investigators in order to develop more integration in accident investigations.

DISADVANTAGES:

- The analysis can have significant business implications for the airline and aircraft manufacturer involved in the incident.
- If the analysis finds that the crash was caused by mechanical or design issues, the manufacturer may be liable for damages and may face significant financial losses.
- The airline may also face legal claims and reputational damage.
- The tough combination of constant airplane configuration changes, having to navigate the plane, communicating with Air Traffic Control, and keeping an eye on ever-changing weather conditions increases the potential for unanticipated events which sometimes leads to a crash.

5. APPLICATIONS

Aviation accident investigation cover a myriad of areas and try to discover the trend of accidents.

The database has wide application to aviation safety analysis, being a source of factual data regarding the evacuation process.

Air crash analysis can be used to better predict the occurrence of airplane crashes which can help lead to their prevention.

Improved design of equipment and procedures can support a more error tolerant system during flight.

6. CONCLUSION

An aircraft accident or incident provides evidence of hazards or deficiencies within the aviation system. A well-conducted investigation should identify all immediate and underlying systemic causes and/or contributing factors of the accident or incident. The investigation may also reveal other hazards or deficiencies within the aviation system not directly connected with the causes of the accident.

In this project we have analysed about the Comparing Aboard vs Fatalities vs Ground, Max accidents based on years, Accidents happened in 1972 (MAX ACCIDENTS) based on months, Highest No. of accident happened by Operators, Top 10 locations which had more accidents, Top 5 flights which have max accident history, accidents based on regions. It helps us to analyse about flight crash. It enables us to avoid aviation accidents in future.

7. FUTURE SCOPE

The analysis of an aircraft accident is a daunting task that could be almost unlimited in scope. The future scope of this project is to pursue a thorough analysis of the aircraft accident investigation, followed by identifying areas where significant improvements could be achieved, and finally demonstrating an expert system tool for improving investigation outcomes. The understanding of airplane crash analysis is then translated into design training policies or programs to help humans perform better.