THE TRAGEDY OF FLIGHT: A COMPREHENSIVE CRASH ANALYSIS

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1.INTRODUCTION

1.1.OVERVIEW

An airplane crash analysis is a detailed investigation into the causes of an aviation accident. The goalof an airplane crash analysis is to identify any factors that contributed to the accident, with the ultimategoal 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.

This data is typically collected from Kaggle. 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. These recommendations may be implemented by the relevant authorities or industry organizations.

1.2.PURPOSE

The process of aircraft accident and serious incident investigation is the basis for understanding the underlying causes of these events. The sole objective of the investigation is making safety recommendations intended to prevent recurrences. Following the international standards and recommended practices as described in ICAO Annex 13 - Aircraft accident and incident investigation, it is possible to obtain and understand factual information about the accident/incident and to develop measures which could mitigate and/or reduce future risks. This paper deals with the results of an investigation of the accident of Flight 1153 from Bari (Italy) to Debra (Tunisia) that was simulated in order to get insight into the possible errors and their potential avoidance. Obtained results could serve as an important factor in identifying hazards that led to the accident, one of the primary purposes of the aviation safety management system.

2. PROBLEM DEFINITION & DESIGNTHINKING

A business requirement for a comprehensive crash analysis of The Tragedy of Flight would likely include the following elements:

● Detailed information about the crash, including the date, time, location, and weather conditions at the time of the incident.

● A thorough analysis of the events leading up to the crash, including any mechanical failures or human errors that may have contributed to the incident.

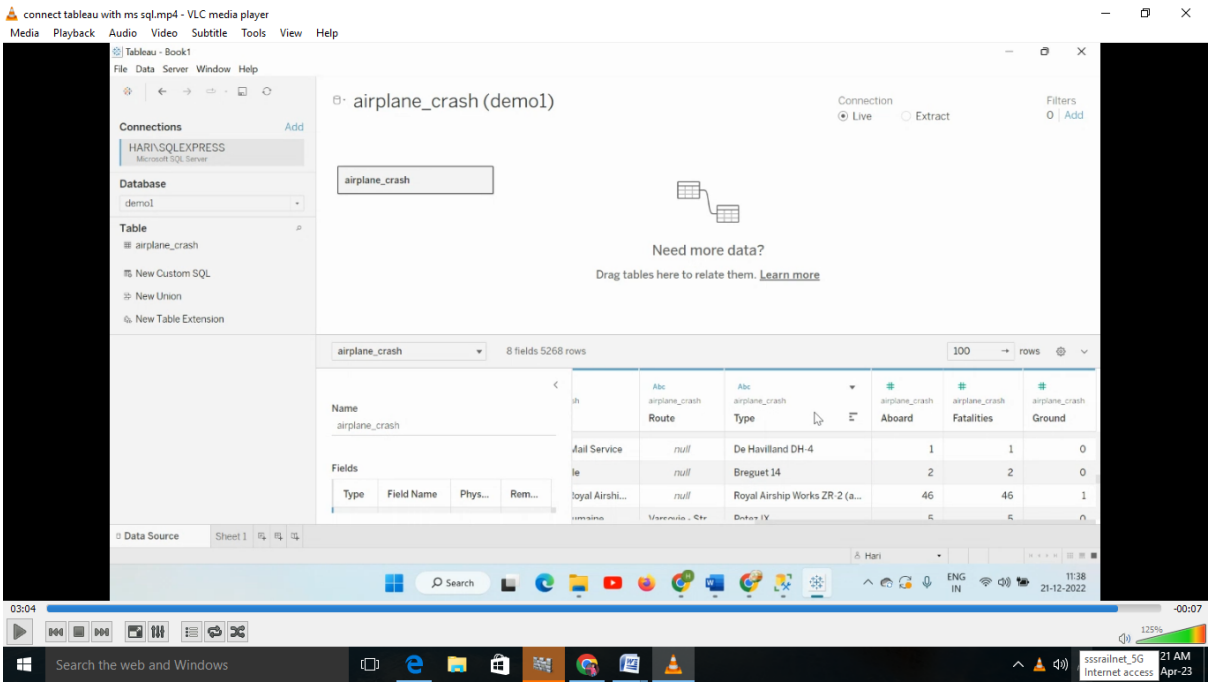
● A review of the flight data and cockpit voice recordings to gather additional information about the events leading up to the crash.

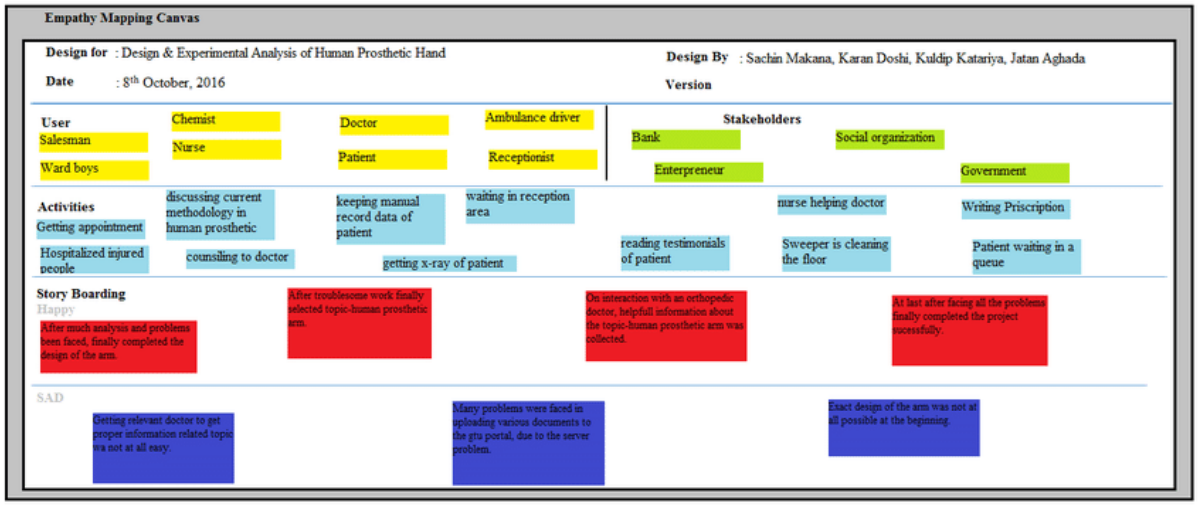
● Interviews with the flight crew, passengers, and any witnesses to the crash to gather additional information about the incident.

● Social Impact: The analysis can provide closure to the families and loved ones of the victims of the crash, as well as to the broader public. 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.

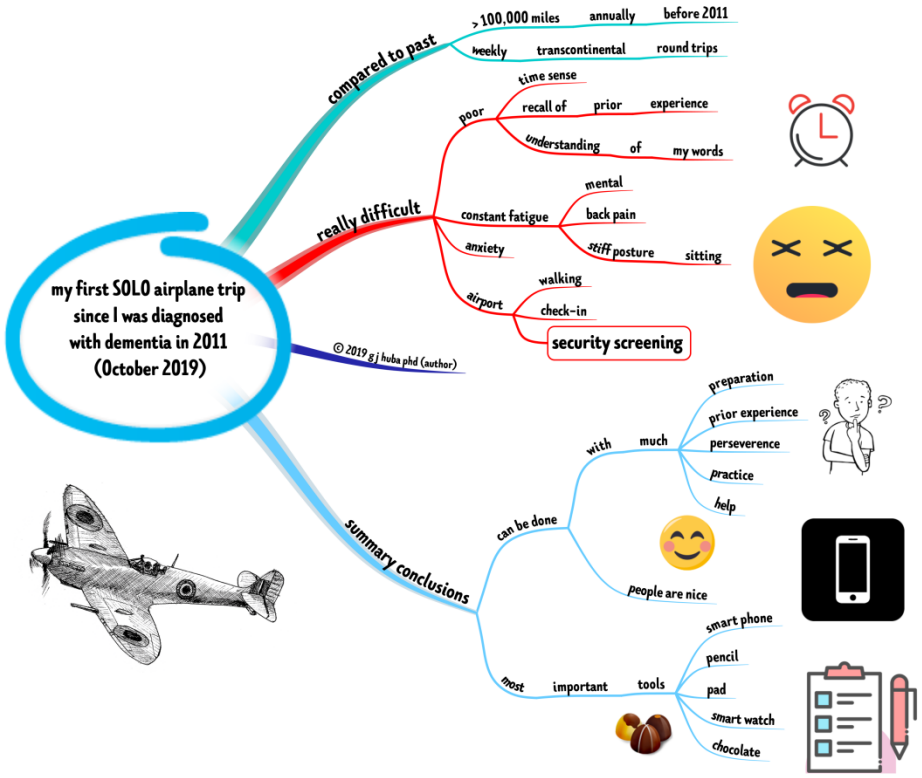
● Business Impact: The analysis can have significant business implications for the airline and aircraft manufacturer involved in the incident. If the analysis finds that the crash was caused by mechanical or design issues, the manufacturer may be liable for damages and may face significant financial losses. The airline may also face legal claims and reputational damage.

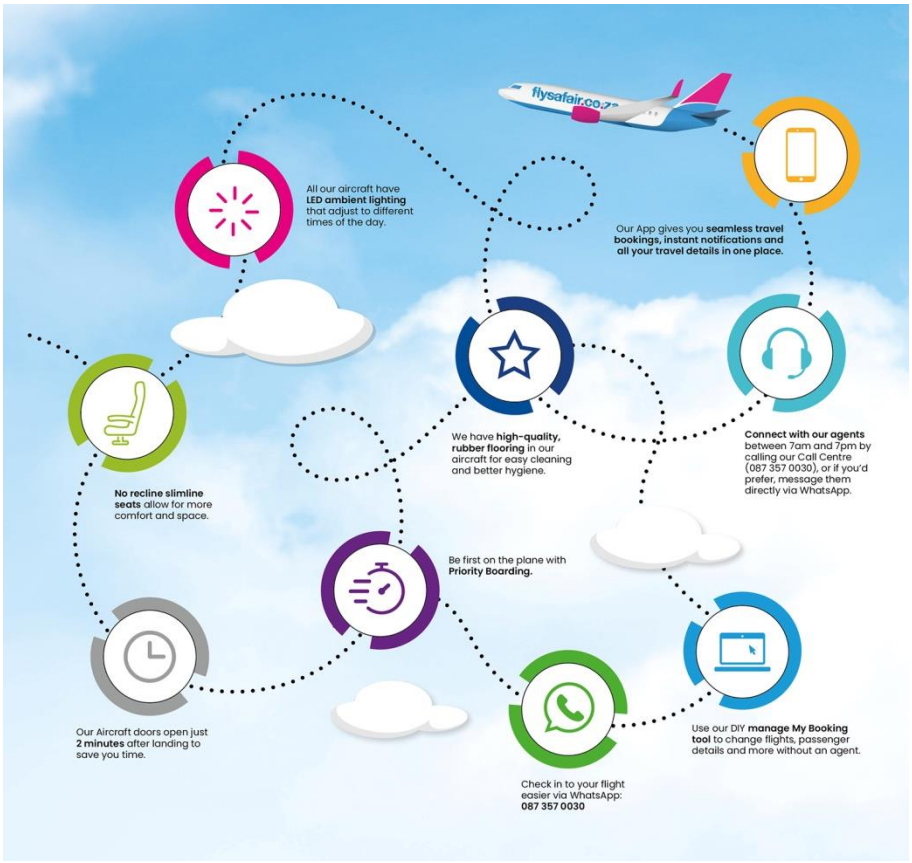
2.1 EMPATHY MAP





2.2. IDEATION AND BRAINSTORMING MAP





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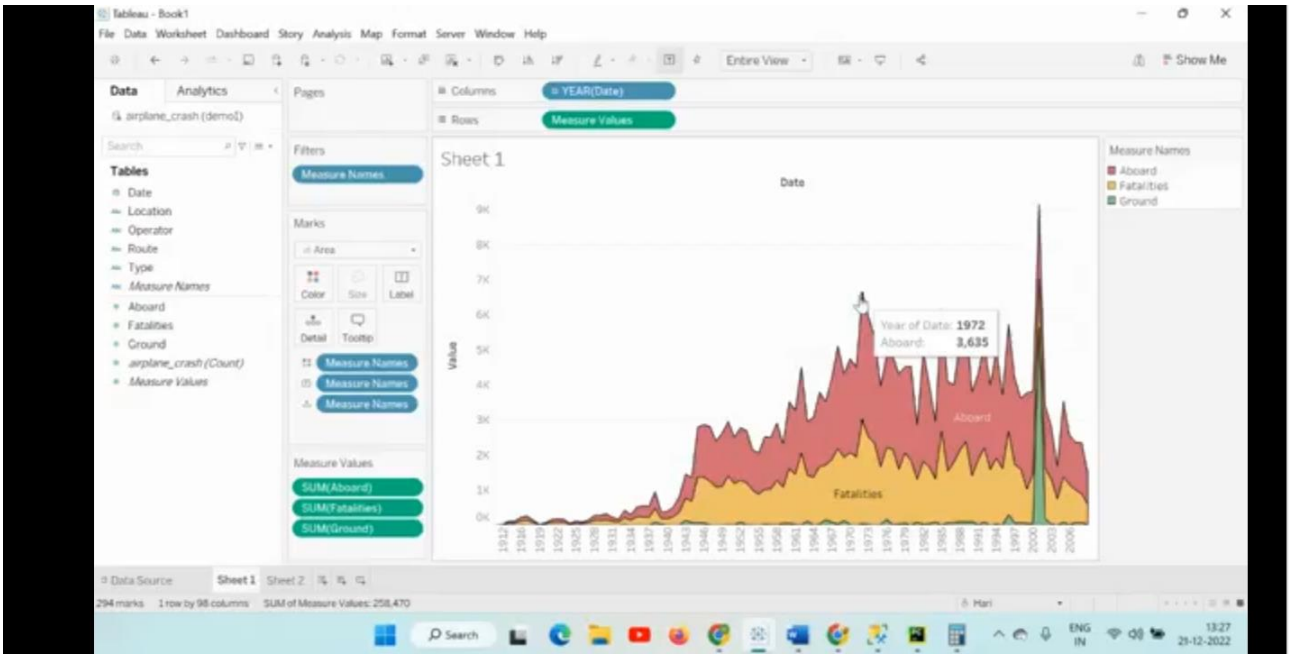


Tableau - Book1
File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
Data Analytics
airplane_crash (demo1)
Tables
Date
Location
Operator
Route
Type
Measure Names
Aboard
Fatalities
Ground
airplane_crash (Count)
Measure Values
Pages
Filters
Measure Names
Marks
Area
Color Size Label
Detail Tooltip
Measure Names
Measure Names
Measure Names
Measure Values
SUM(Aboard)
SUM(Fatalities)
SUM(Ground)
Columns
YEAR(Date)
Rows
Measure Values
Sheet 1
Date
Value
Year of Date: 1972
Aboard: 3,635
Aboard
Fatalities
Measure Names
Aboard
Fatalities
Ground
Data Source
Sheet 1
Sheet 2
294 marks
1 row by 98 columns
SUM of Measure Values: 258,470
Search
ENG
IN
13:27
21-12-2022

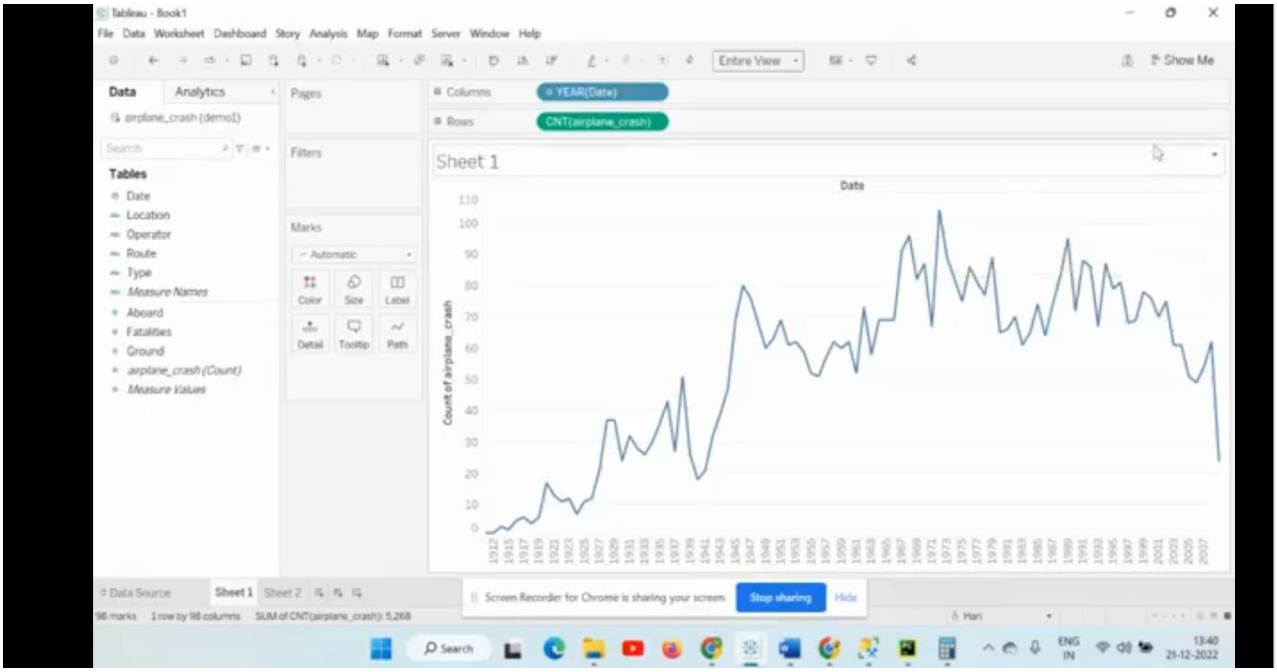


Tableau - Book1
File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
Data Analytics
airplane_crash (demo1)
Tables
Date
Location
Operator
Route
Type
Measure Names
Aboard
Fatalities
Ground
airplane_crash (Count)
Measure Values
Pages
Filters
Marks
Automatic
Color Size Label
Detail Tooltip Path
Columns
YEAR(Date)
Rows
CNT(airplane_crash)
Sheet 1
Date
Count of airplane_crash
Data Source
Sheet 1
Sheet 2
98 marks
1 row by 98 columns
SUM of CNT(airplane_crash): 5,268
Screen Recorder for Chrome is sharing your screen.
Stop sharing
Hide
Search
ENG
IN
13:40
21-12-2022

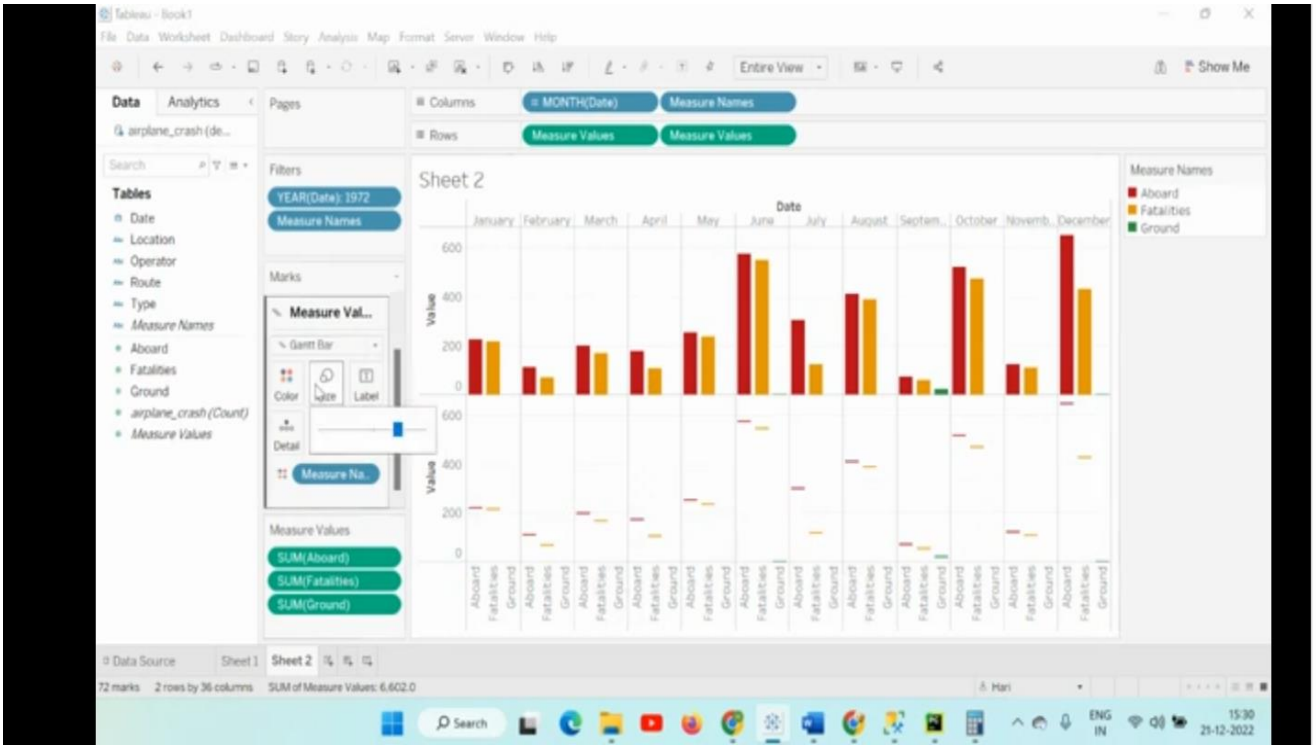


Tableau - Book1
File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
Entire View
Show Me
Data
Analytics
Pages
airplane_crash (de...
Search
Tables
Date
Location
Operator
Route
Type
Measure Names
Aboard
Fatalities
Ground
airplane_crash (Count)
Measure Values
Filters
YEAR(Date): 1972
Measure Names
Marks
Measure Val...
Gantt Bar
Color
Size
Label
Detail
Measure Na..
Measure Values
SUM(Aboard)
SUM(Fatalities)
SUM(Ground)
Columns
MONTH(Date)
Measure Names
Rows
Measure Values
Measure Values
Sheet 2
Date
January
February
March
April
May
June
July
August
Septem..
October
Novemb..
December
Value
600
400
200
0
Measure Names
Aboard
Fatalities
Ground
Data Source
Sheet 1
Sheet 2
72 marks
2 rows by 36 columns
SUM of Measure Values: 6.602.0
Mari
Search
ENG
IN
15:30
21-12-2022

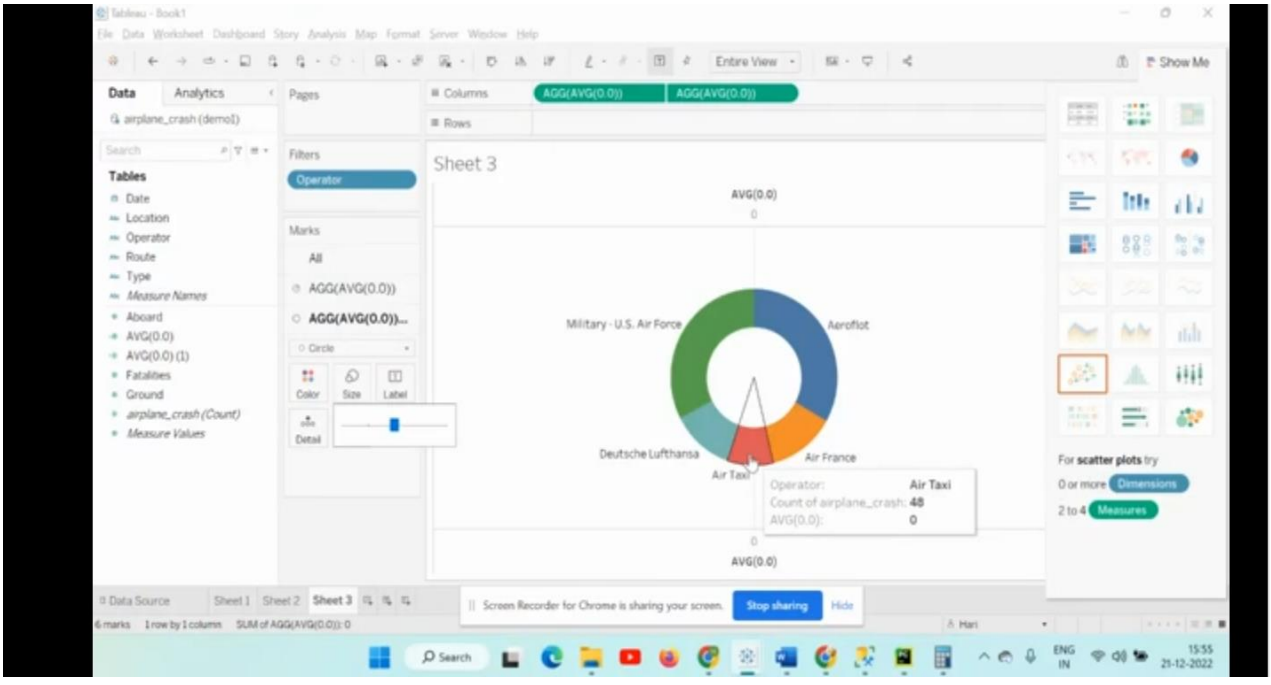


Tableau - Book1
File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
Entire View
Show Me
Data
Analytics
Pages
airplane_crash (demo1)
Search
Tables
Date
Location
Operator
Route
Type
Measure Names
Aboard
AVG(0.0)
AVG(0.0) (1)
Fatalities
Ground
airplane_crash (Count)
Measure Values
Filters
Operator
Marks
All
AGG(AVG(0.0))
AGG(AVG(0.0))...
Circle
Color
Size
Label
Detail
Columns
AGG(AVG(0.0))
AGG(AVG(0.0))
Rows
Sheet 3
AVG(0.0)
0
Military - U.S. Air Force
Aeroflot
Deutsche Lufthansa
Air France
Air Taxi
Operator: Air Taxi
Count of airplane_crash: 48
AVG(0.0): 0
For scatter plots try
0 or more Dimensions
2 to 4 Measures
Data Source
Sheet 1
Sheet 2
Sheet 3
Screen Recorder for Chrome is sharing your screen.
Stop sharing
Hide
6 marks
1 row by 1 column
SUM of AGG(AVG(0.0)): 0
Mari
Search
ENG
IN
15:55
21-12-2022

DASHBOARD

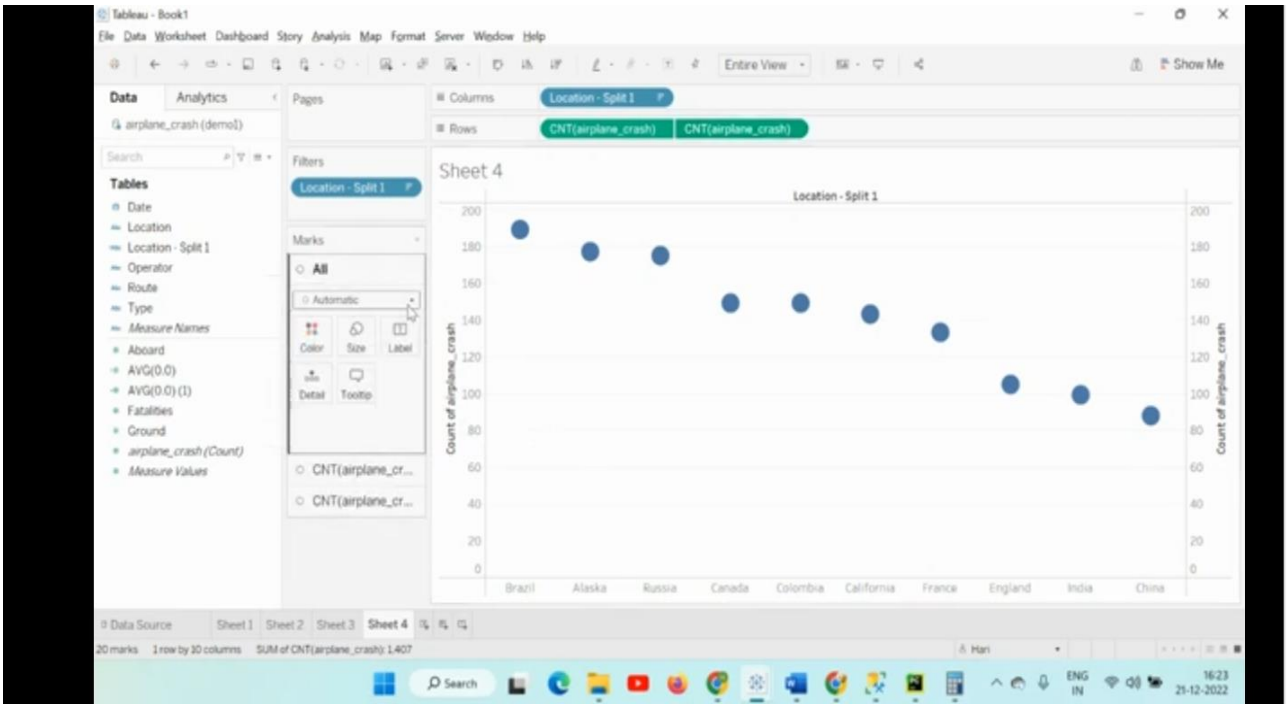


Tableau - Book1
Sheet 4
Location - Split 1
Count of airplane_crash
Brazil
Alaska
Russia
Canada
Colombia
California
France
England
India
China

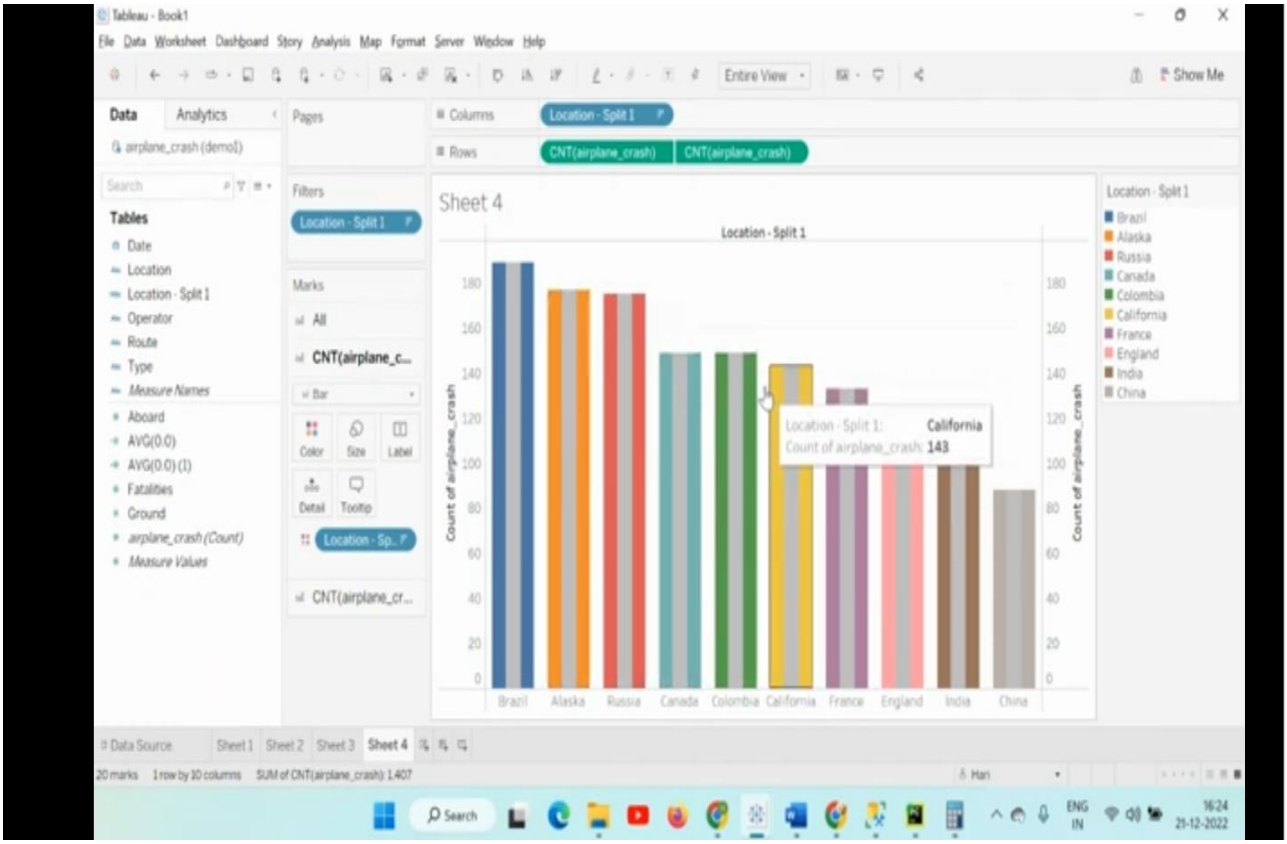
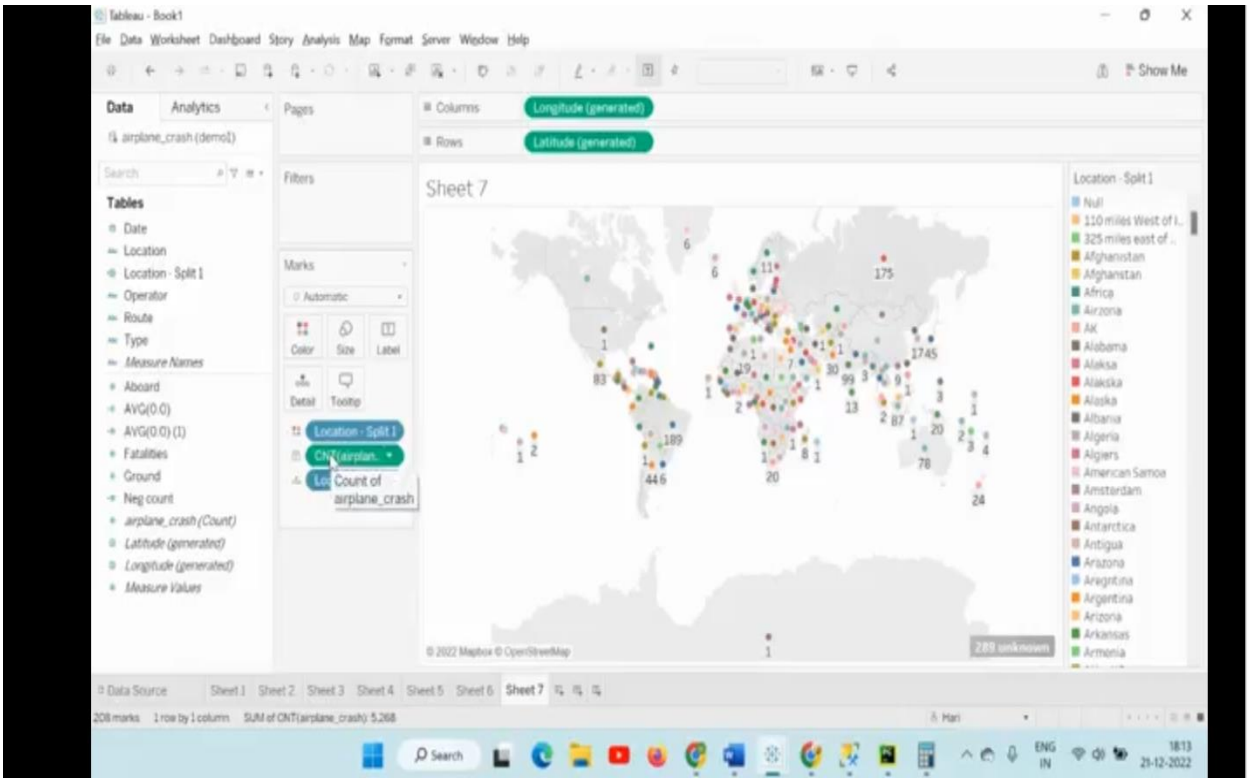


Tableau - Book1
Sheet 4
Location - Split 1
Location - Split 1: California
Count of airplane_crash: 143
Count of airplane_crash
Brazil
Alaska
Russia
Canada
Colombia
California
France
England
India
China

STORY



4. ADVANTAGES AND DISADVANTAGES

4.1.Advantages

- There are many different ways to get from one place to another. When it comes to traveling long distances, air transport is the fastest and most efficient way to go. Let's take a look at the main advantages of traveling by air transport.

- Air travel is the fastest way to travel long distances. This is because it cuts down on the time it would take to travel by car or train. For instance, if you're traveling from New York to Los Angeles, you can cover the distance in just a little over six hours by plane.

- Air travel is also the most efficient way to travel long distances. This is because it uses less fuel than other methods of transport, such as cars or trains.

- Another advantage of air travel is that you can fly to many different places. This is because there are thousands of airports around the world, which makes it easy to get from one place to another.

4.2.Disadvantages

- The first disadvantage of air travel is that it can be expensive. This is because ticket prices can vary depending on the route and the time of year.

- Another disadvantage of air travel is that you might have to fly at unsociable hours. This is because flights are often scheduled for the early morning or late at night.

- Another disadvantage of air travel is that you might have to fly in a middle seat. This is because most planes have three seats in each row and the aisle and window seats are usually taken first.This can be uncomfortable if you're not used to it, but it's usually not a big deal for short flights.

- Finally, one more disadvantage of air travel is that the journey can be long if you have stopovers.For example, if you're flying internationally, you might have a stopover, or worst, multiple stopovers.

5. PREVENTIONS

5.1. Fly on Nonstop Routings

Most accidents occur during the takeoff, climb, descent, and landing phase of flight so flying nonstop would reduce exposure to these most accident prone phases of flight.

5.2. Choose Larger Aircraft

Currently, aircraft with more than 30 passenger seats were all designed and certified under the strictest regulations. Also, in the unlikely event of a serious accident, larger aircraft provide a better opportunity for passenger survival.

5.3. Pay Attention to the Preflight Briefing

Although the information seems repetitious, the locations of the closest emergency exits may be different depending on the aircraft that you fly on and seat you are in.

5.4. Keep the Overhead Storage Bin Free of Heavy Articles

Overhead storage bins may not be able to hold very heavy objects during turbulence, so if you or another passenger have trouble lifting an article into the bin, have it stored elsewhere.

5.5. Keep Your Seat Belt Fastened While You are Seated

Keeping the belt on when you are seated provides that extra protection you might need if the plane hits unexpected turbulence.

5.6. Listen to the Flight Attendants

The primary reason flight attendants are on an aircraft is for safety, so if one of them asks you to do something like fasten your seat belts, do it first and ask questions later.

5.7. Don’t Bring Any Hazardous Material

There are rather long lists of hazardous materials that are not allowed, but common sense should tell you that you shouldn’t bring gasoline, corrosives, poisonous gases, and other such items on the aircraft unless they were allowed by the airline and shipped in a proper container.

5.8. Let the Flight Attendant Pour Your Hot Drinks

Flight attendants are trained to handle hot drinks like coffee or tea in a crowded aisle on a moving aircraft, so allow them to pour the drink and hand it too you.

5.9. Don’t Drink Too Much

The atmosphere in an airliner cabin is pressurized to about the same altitude as Denver, so any alcohol you consume will affect you more strongly than at sea level. Moderation is a good policy at any altitude.

5.10. Keep Your Wits About You

In the unlikely event that you are involved in an emergency situation such as a precautionary emergency evacuation, follow the directions of the flight attendants and flight crew and exit the aircraft as quickly as possible.

6. CONCLUSION

The special committee On the nomenclature, subdivision, and classification of aircraft accidents, having studied in considerable detail the problem of classifying and, analyzing the causes of aircraft accidents, at its final meeting held on July 17, 1928, unanimously adopted a resolution approving this report and recommending that it be published by the National Advisory Committee for Aeronautics and that copies be transmitted to the War, Navy, and Commerce Departments with a recommends lion that the proposed method of analysis of aircraft accidents outlined in the report be adopted for use in their respective services. The special committee recommends further that copies of the report be transmitted also to the appropriate representatives of the various interested foreign governments with a request that they cooperate by contributing information from time to time in relation to aircraft accidents.

7. FUTURE SCOPE

- The hydrogen-powered planes could enter the market as soon as 2035, and those planes could carry hundreds more passengers per flight than traditional planes, with a cleaner energy source.

- With the economy growing and disposable income growing, there is a huge opportunity for Indians to travel abroad... This 75 million passengers is likely to go to 120-125 million over the next 7-10 years.

- Looking ahead, we can see that in 2050 aviation will fly 16 billion passengers and 400 million tonnes of cargo. We must be able to manage that with sustainable technologies and efficient infrastructure, while pleasing our passengers and rewarding our shareholders.

- The sector is expected to see significant growth in the coming years, particularly in the areas of international travel and cargo. The government's continued efforts to boost air connectivity and infrastructure development are expected to further drive the growth of the sector.