THE TRAGEDY Of FLIGHT: A COMPREHENSIVE CRASH ANALYSIS

Project Based Experiential Learning Program

The Tragedy of Flight: A Comprehensive crash analysis:

Milestone 1: Define Problem /Problem Understanding

Activity 1: Specify the business problem

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. 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

Activity 2: Business Requirement

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.

Activity 3: Literature Survey

Literature Survey (Student Will Write) A literature survey is a method of researching existing literature and studies related to a specific topic. In the context of analysing the airplane crash, a literature survey would involve reviewing studies and articles that have been published on the topic of airplane crash, as well as studies specific to crash analysis. The literature survey would include sources such as academic journals, industry reports, and online articles. The literature survey would also explore any existing research on airplane crash, and would aim to identify any unique challenges or opportunities that to overcome crash

Tragedy on Southwest Flight 1380: A crisis response analysis Crises come in many different forms, and their lasting impacts are just as varied as their events that cause them. Many organizational and communication theories attempt to explain how companies should handle crises and what factors affect the varying impacts that crises leave on organizations. Situational Crisis Communication Theory (Coombs, 2007) suggests what strategies organizational crisis managers should use to effectively respond to a crisis based on the specific circumstances of the event. This theory is a useful framework to understand Southwest Airlines' response to a recent in-flight tragedy and the impact that this crisis will have on the airline's reputation

media (Coombs, 2007). People hold favorable reputations of organizations when they believe that the organizations uphold societal values, care about their communities and customers, and are ethical. Unfavorable reputations result from stakeholders not perceiving an organization to meet these social standards. According to Coombs (2007), "Afavorableprior(precrisis) reputation is a buffer against the reputational capital lost during a crisis" (p. 165). Therefore, an unfavorable pre-crisis reputation can be a significant obstacle in the way of an organization's post-crisis face-saving attempts.

PRE-CRISIS SOUTHWEST

As stated above, the history of an organization is central to SCCT's model of crises. An organization's reputation is one of the two company-related factors that affect how a crisis is perceived and, therefore, should be managed. Southwest benefits from having a phenomenal reputation with its customers and in the airline industry. The company's mission statement "is dedication to the highest quality of customer service delivered with a sense of warmth, friendliness, individual pride, and company spirit" ("About," 2018), and the company has lived up to this mission. Southwest is known for its above-and-beyond customer service due to acts such as one employee driving hours to a different airport to promptly retrieve lost baggage, an employee sacrificing personal food for a pregnant customer in need of breakfast, and, as recently reported, having a free, instant replacement option for damaged luggage (Hyken, 2016)

holding forty-four years of consecutive profitability, and being ranked eighth on Fortune magazine's list of most admired companies in the world ("2016," 2017). Additionally, Forbes "named [Southwest] one of America's most just companies" ("2016," 2017, p. [3]). Southwest's fantastic reputation has laid a wonderful foundation for the company as it takes care of its reputation during a crisis

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Applying the principles of SCCT to this tragic incident, Southwest's pre-crisis reputation was phenomenal, giving a solid and helpful foundation to its reputationmaintaining process. However, because Southwest's crisis history includes a similar malfunction, this incident may hurt Southwest's reputation. But both Southwest's framing of the facts and the pending ruling about the cause of the 2016 incident may diminish this crisis's negative effects. This crisis seems to be predominantly considered in the accident category, though future media coverage and NTSB findings may alter this perception. Considering these factors about the situation, Southwest's response to the crisis was an advisable response following the SCCT pattern.

Crisis response strategies have three objectives relative to protecting reputations:

(1) shape attributions of the crisis,
(2) change perceptions of the organization in crisis and

(3) reduce the negative [effect] generated by the crisis" (Coombs, 2007).

kelly used the diminish strategy of crisis response to accomplish these goals. Using framing words to reframe the company's responsibility for the crisis is a main way to use the diminish strategy (Coombs, 2007). Kelly used the press conference well to frame the crisis as an "accident" and to shape the company to be perceived as caring for the customer – a reasonableperception given the organization's track record and reputation. Offering compensation and apologies, which the company did, are also effective diminish strategies (Coombs, 2007). Southwest has not used any bolstering strategies that are clear ways to rebuild the company's reputation but rather worked to support the reputation that it maintains, implying that the company recognizes using rebuilding strategies would make it look like it were more culpable for the incident.

PAN AM FLIGHT

Pan Am flight 103, also called **Lockerbie bombing**, flight of a passenger airliner operated by Pan American World Airways (Pan Am) that exploded over Lockerbie, Scotland, on December 21, 1988, after a bomb was detonated. All 259 people on board were killed, and 11 individuals on the ground also died.

About 7:00 PM on December 21, Pan Am flight 103, a Boeing 747 en route to New York City from London, exploded over Lockerbie, Scotland. The plane had reached a height of approximately 31,000 feet (9,500 metres) and was preparing for the oceanic portion of the flight when a timer-activated bomb detonated. The bomb, constructed with the odourless plastic explosive Semtex, was hidden in a cassette player that was stored in a suitcase. The blast broke the plane into thousands of pieces that landed in an area covering roughly 850 square miles (2,200 square km). All 259 passengers and crew members were killed. Falling wreckage destroyed 21 houses and killed an additional 11 people on the ground.

Although the passengers aboard the plane came from 21 countries, the majority of them were Americans, and the attack increased terrorism fears in the United States. Investigators believed that two Libyan intelligence agents were responsible for the bombing; many speculated that the attack had been retaliation for a 1986 U.S. bombing campaign against Libya's capital city, Tripoli. Libyan leader Muammar al-Qaddafi refused to turn over the two suspects. As a result, the United States and the United Nations Security Council imposed economic sanctions against Libya. In 1998 Qaddafi finally accepted a proposal to extradite the men. In 2001, after an investigation that involved interviewing 15,000 people and examining 180,000 pieces of evidence, Abdelbaset Ali Mohmed al-Megrahi was convicted of the bombing and sentenced to 20 (later 27) years in prison. The other man, Lamin Khalifa Fhimah, was acquitted. The Libyan government eventually agreed to pay damages to the families of the victims of the attack.

Activity 4: Social and business impact

*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.

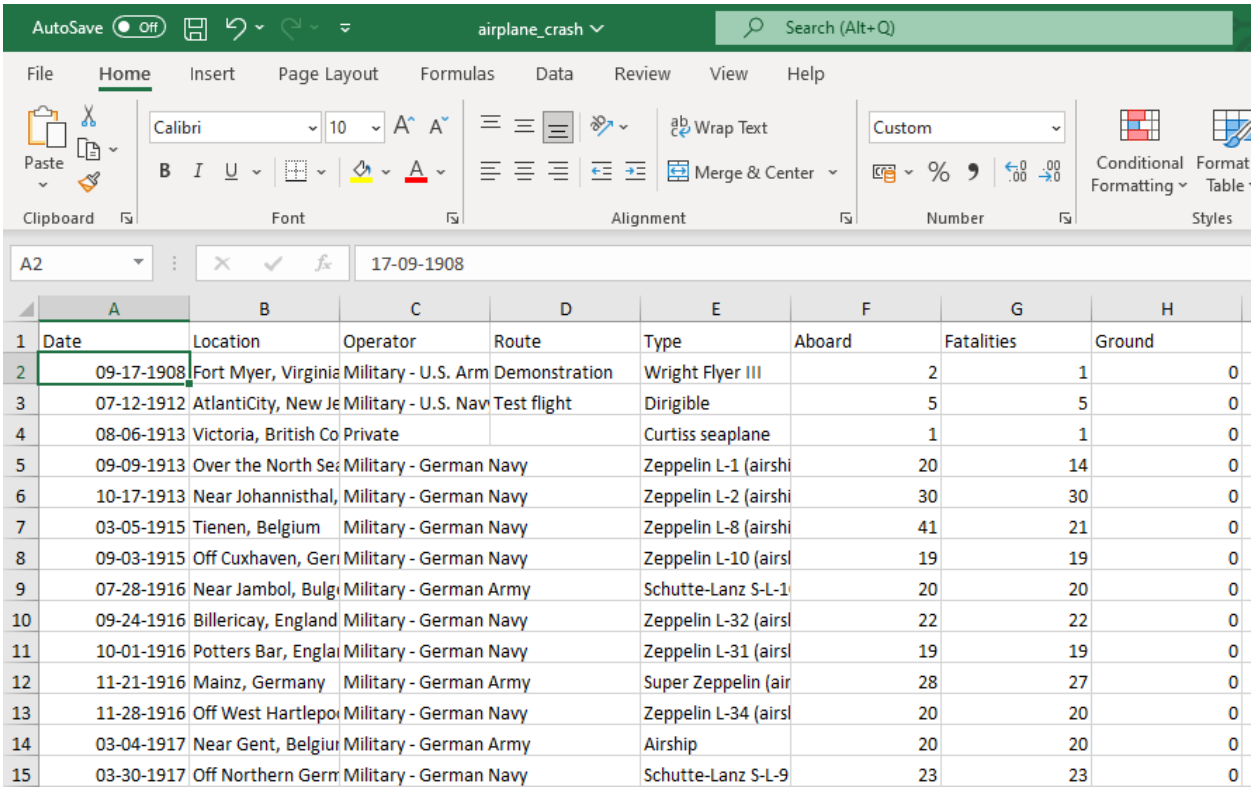
*Business Impact: The analysis can have significant business implications for the airline and aircraft manufacturer involved in the incident. If the analysis finds that the crash was caused by mechanical or design issues, the manufacturer may be liable for damages and may

face significant financial losses. The airline may also face legal claims and reputational damage.

Milestone 2: Data Collection & Extraction from Database

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes and generate insights from the data.

Activity 1: Collect the dataset



	A	B	C	D	E	F	G	H
1	Date	Location	Operator	Route	Type	Aboard	Fatalities	Ground
2	09-17-1908	Fort Myer, Virginia	Military - U.S. Arm	Demonstration	Wright Flyer III	2	1	0
3	07-12-1912	AtlantiCity, New Je	Military - U.S. Nav	Test flight	Dirigible	5	5	0
4	08-06-1913	Victoria, British Co	Private		Curtiss seaplane	1	1	0
5	09-09-1913	Over the North Sea	Military - German	Navy	Zeppelin L-1 (airshi	20	14	0
6	10-17-1913	Near Johannisthal,	Military - German	Navy	Zeppelin L-2 (airshi	30	30	0
7	03-05-1915	Tienen, Belgium	Military - German	Navy	Zeppelin L-8 (airshi	41	21	0
8	09-03-1915	Off Cuxhaven, Ger	Military - German	Navy	Zeppelin L-10 (airsl	19	19	0
9	07-28-1916	Near Jambol, Bulg	Military - German	Army	Schutte-Lanz S-L-1	20	20	0
10	09-24-1916	Billericay, England	Military - German	Navy	Zeppelin L-32 (airsl	22	22	0
11	10-01-1916	Potters Bar, Englar	Military - German	Navy	Zeppelin L-31 (airsl	19	19	0
12	11-21-1916	Mainz, Germany	Military - German	Army	Super Zeppelin (air	28	27	0
13	11-28-1916	Off West Hartlepo	Military - German	Navy	Zeppelin L-34 (airsl	20	20	0
14	03-04-1917	Near Gent, Belgiur	Military - German	Army	Airship	20	20	0
15	03-30-1917	Off Northern Germ	Military - German	Navy	Schutte-Lanz S-L-9	23	23	0

Activity 1.1:

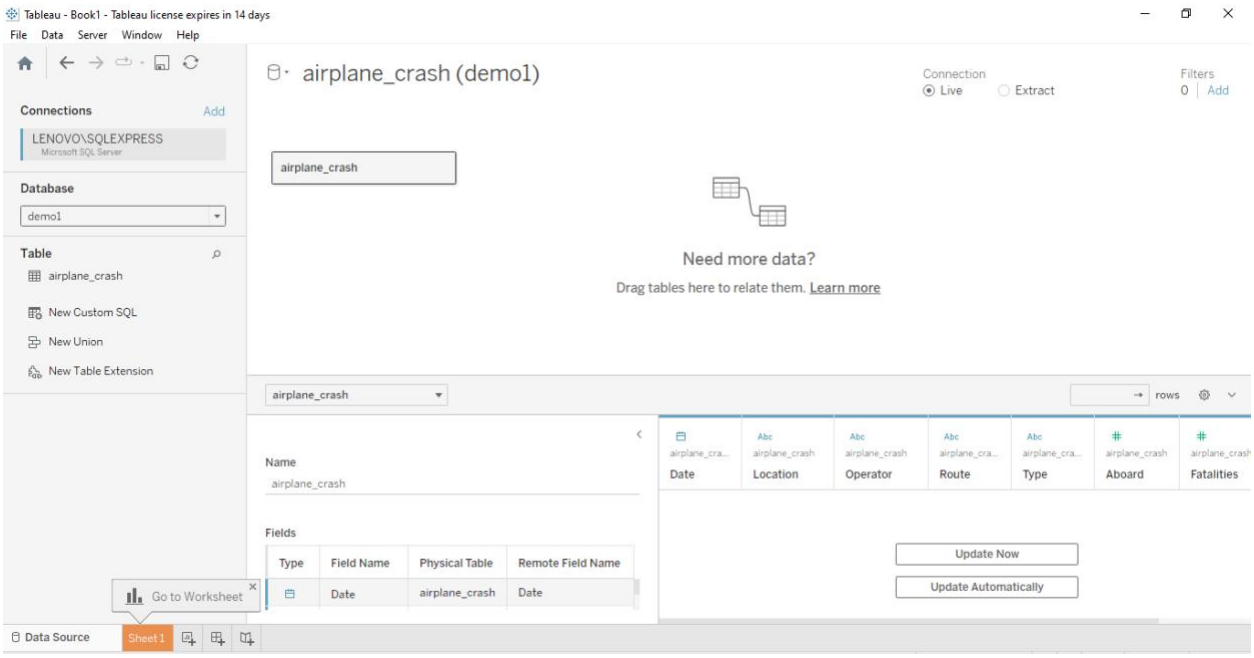
Understand the data Data contains all the meta information regarding the columns described in the CSV files.

we have provided 8 CSV files:

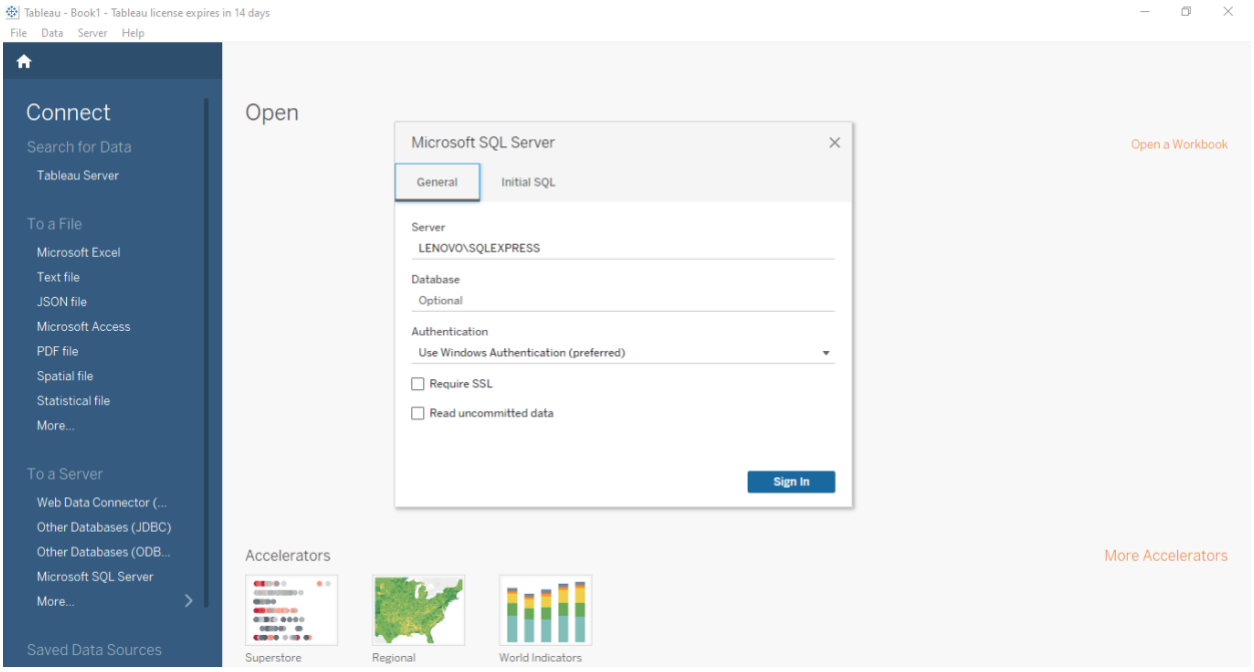
1. Date
2. Location
3. Operators
4. Route
5. Type
6. Aboard
7. Fatalities
8. Ground Column Description for Date:

1. date: This column represents the dates.
2. Location: This column represents the accident locations.
3. Operators: This column represents the accidents which made by operators.
4. Route: This column represents the airplane route.
5. Type: This column represents the airplane type.
6. Aboard: This column represents the count of people aboard.
7. Fatalities: This column represents the count of death.

Activity 2: Storing Data in DB & Perform SQL Operations



Activity 3: Connect DB with Tableau



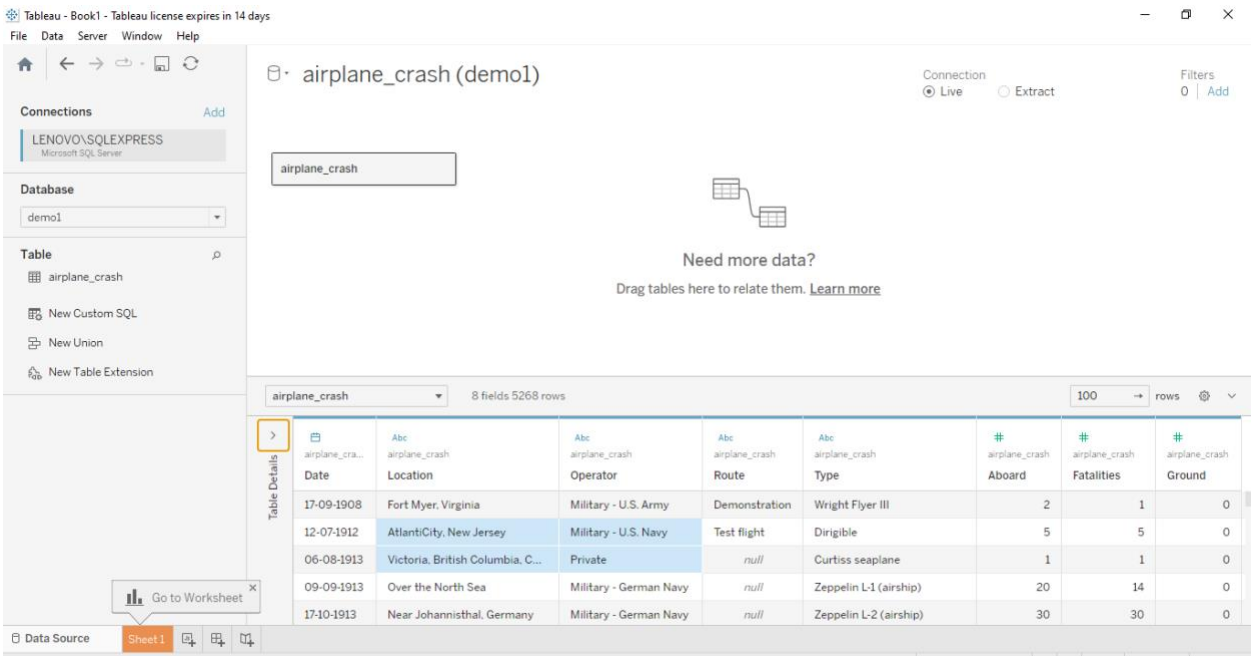
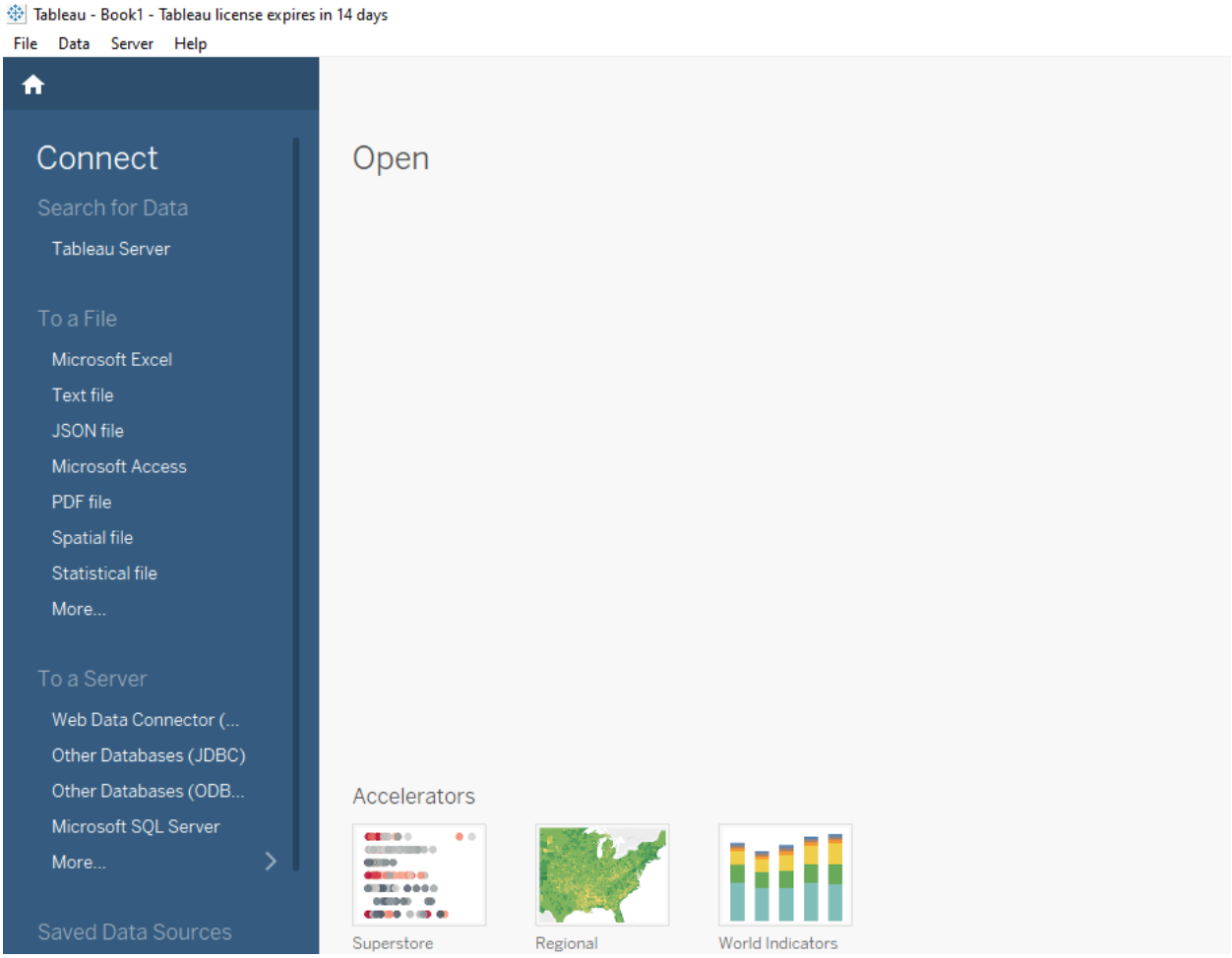


Tableau - Book1 - Tableau license expires in 14 days
File Data Server Window Help
airplane_crash (demo1)
Connection
Live
Extract
Filters
0 | Add
Connections
Add
LENOVO\SQLEXPRESS
Microsoft SQL Server
Database
demo1
Table
airplane_crash
New Custom SQL
New Union
New Table Extension
airplane_crash
Need more data?
Drag tables here to relate them. Learn more
airplane_crash
8 fields 5268 rows
100
rows
Table Details
Date
Location
Operator
Route
Type
Aboard
Fatalities
Ground
17-09-1908 Fort Myer, Virginia Military - U.S. Army Demonstration Wright Flyer III 2 1 0
12-07-1912 AtlantiCity, New Jersey Military - U.S. Navy Test flight Dirigible 5 5 0
06-08-1913 Victoria, British Columbia, C... Private null Curtiss seaplane 1 1 0
09-09-1913 Over the North Sea Military - German Navy null Zeppelin L-1 (airship) 20 14 0
17-10-1913 Near Johannisthal, Germany Military - German Navy null Zeppelin L-2 (airship) 30 30 0
Go to Worksheet
Data Source
Sheet 1



Milestone 3:

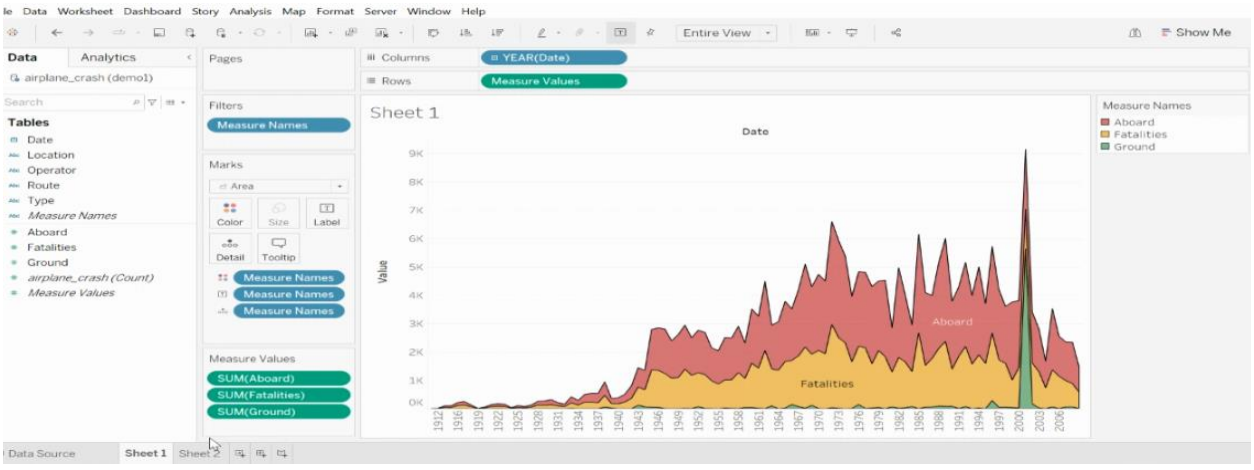
Data Preparation Activity 1: Prepare the Data for Visualization (Refer this video to understand about data preparation) Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring

the data is accurate and complete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency.

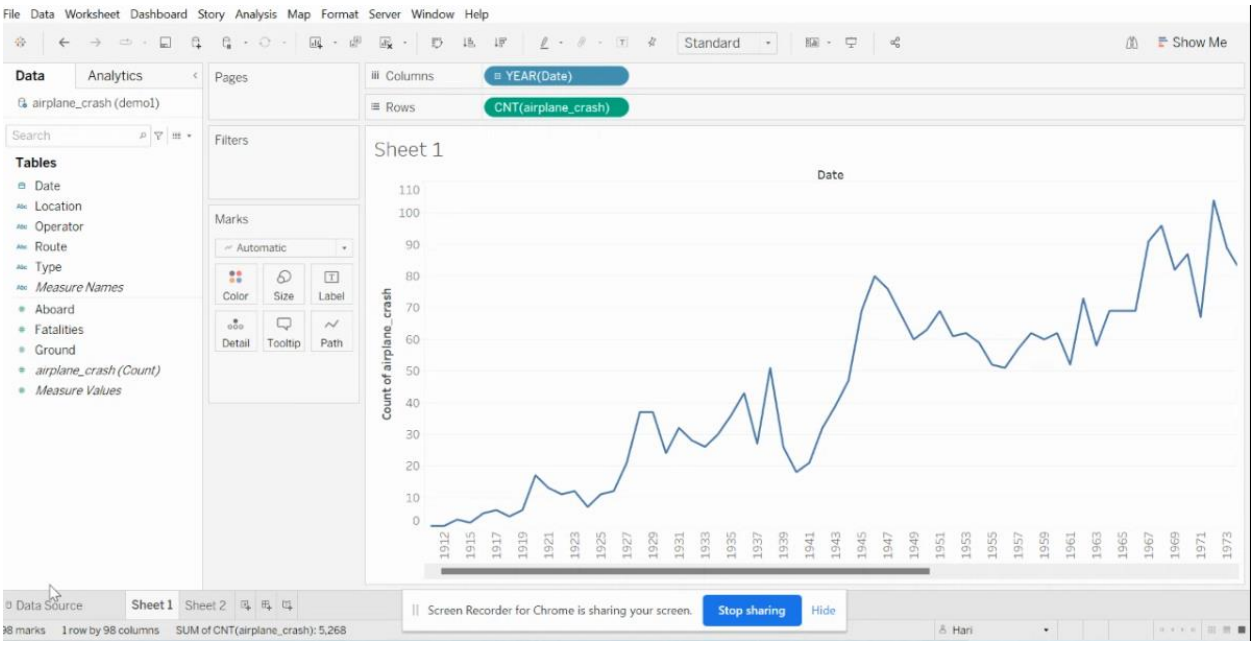
Milestone 4:

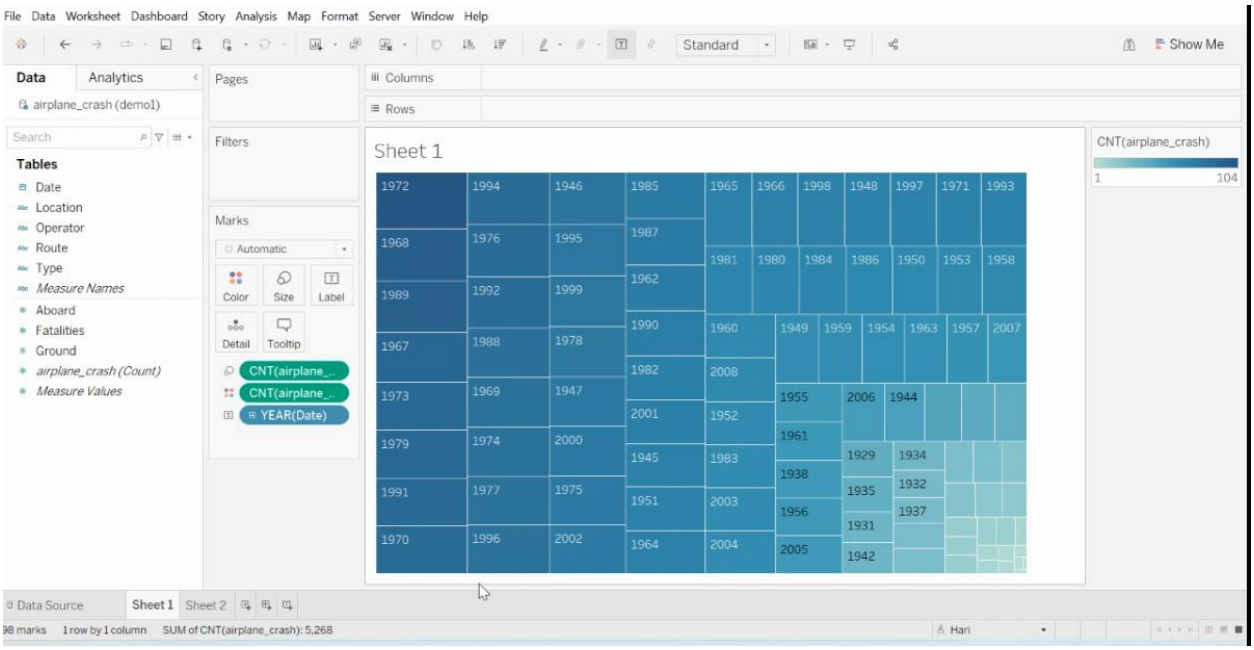
Data Visualization Data visualization is the process of creating graphical representations of data in order to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data.

Activity 1: Comparing Aboard vs Fatalities vs Ground

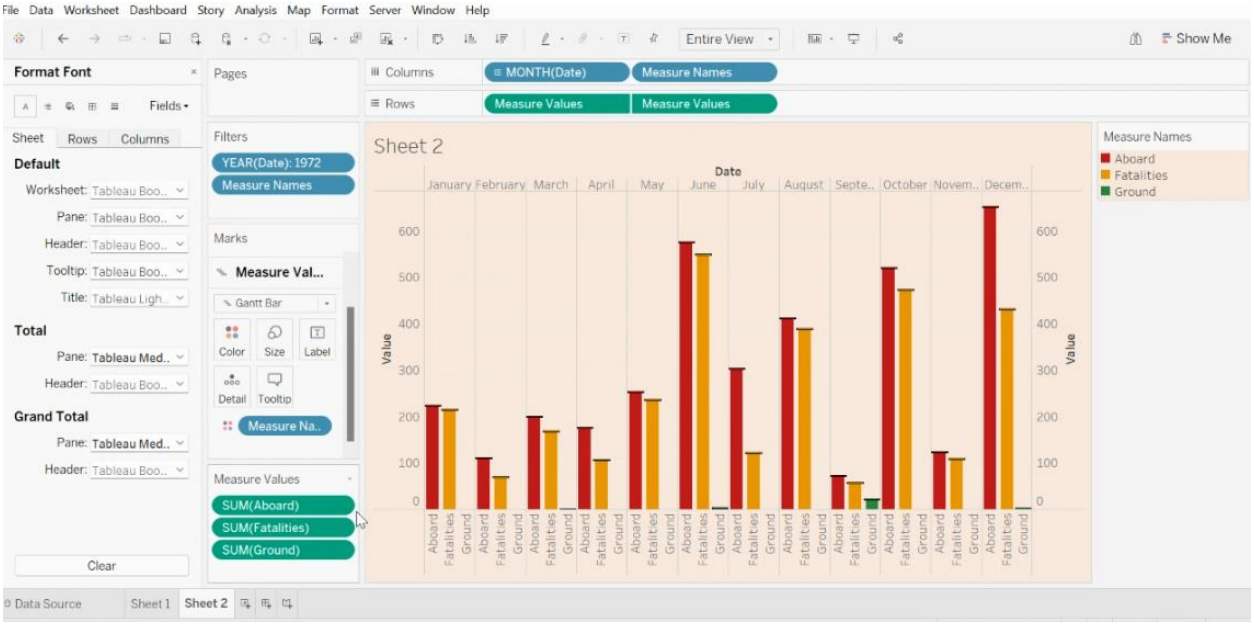


Activity 2: Max accidents based on years

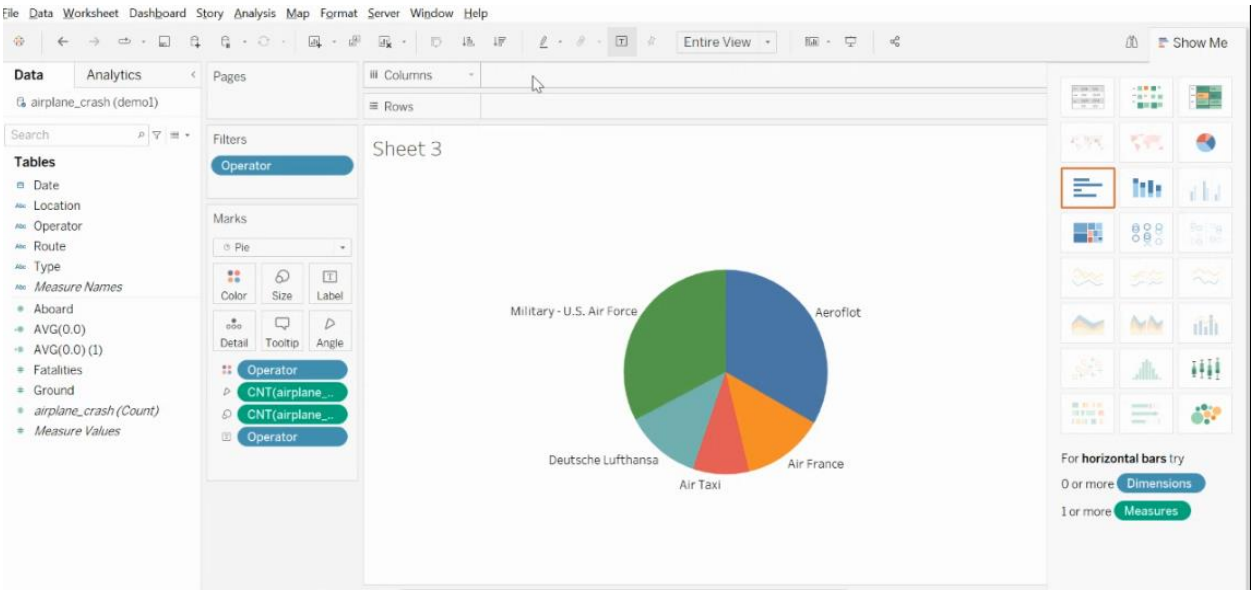




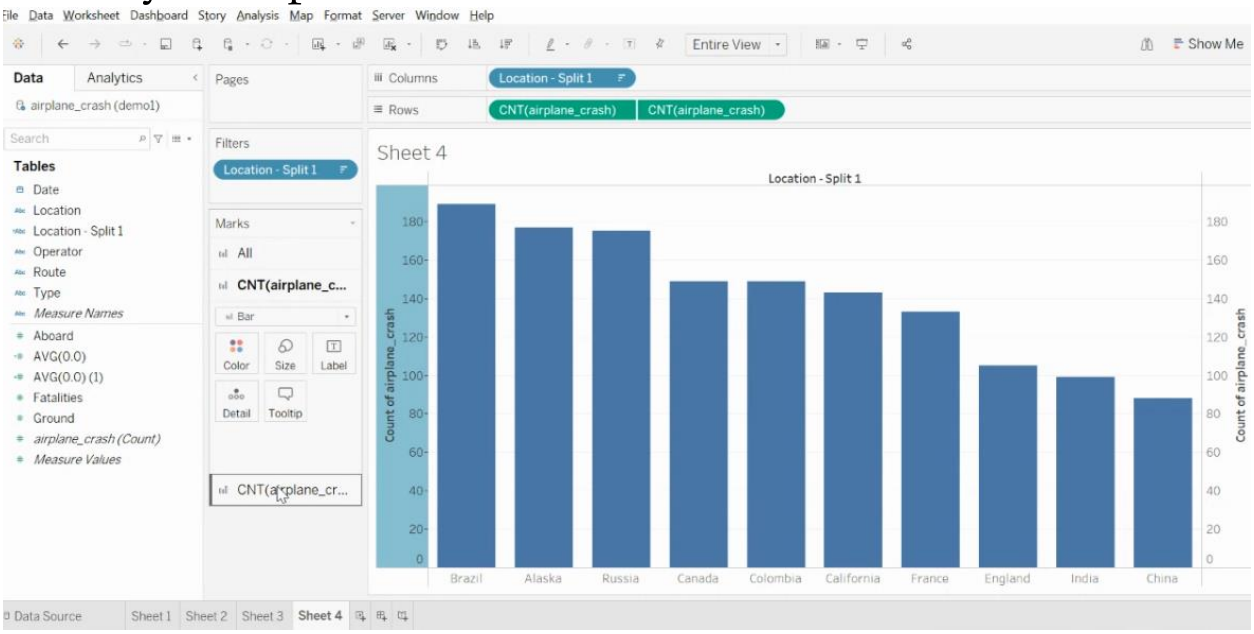
Activity 3: Accidents happened in 1972 (MAX ACCIDENTS) based on months



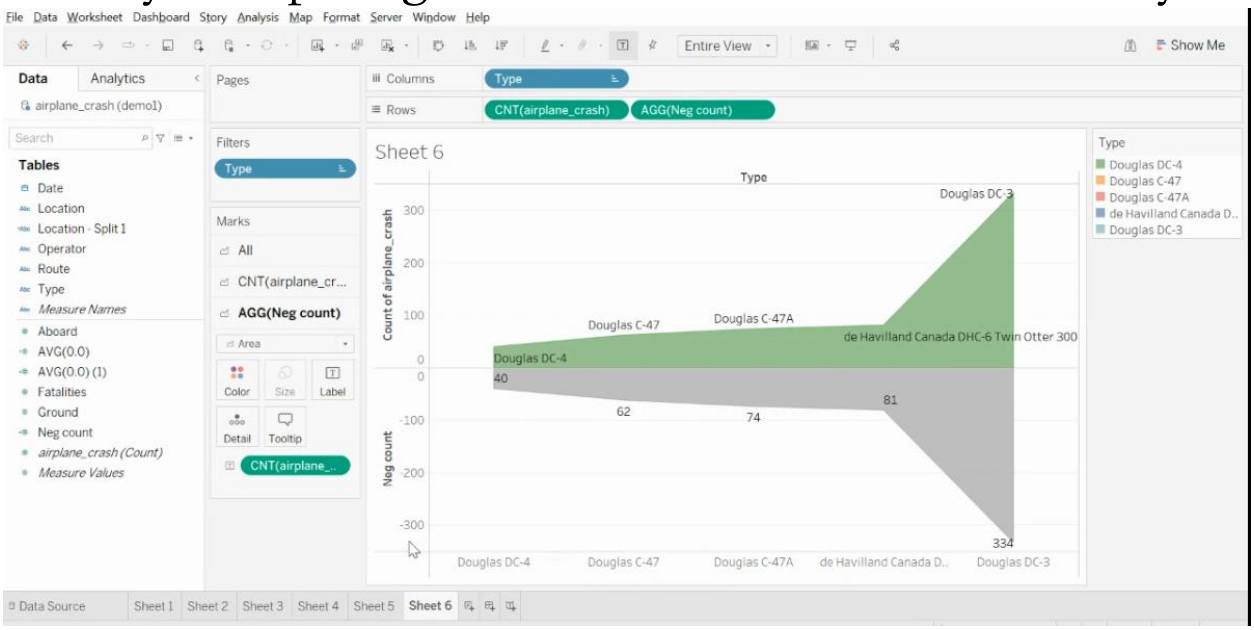
Activity 4: Highest No. of accident happened by Operators



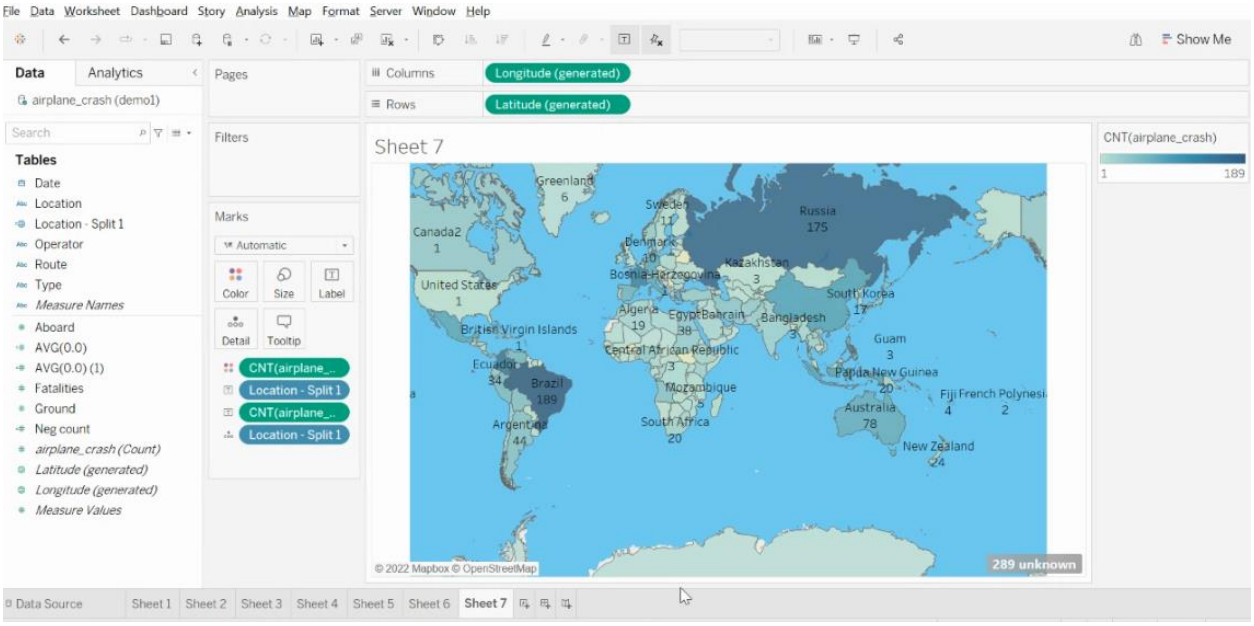
Activity 5: Top 10 locations which had more accidents



Activity 6: Top 3 flights which have max accident history



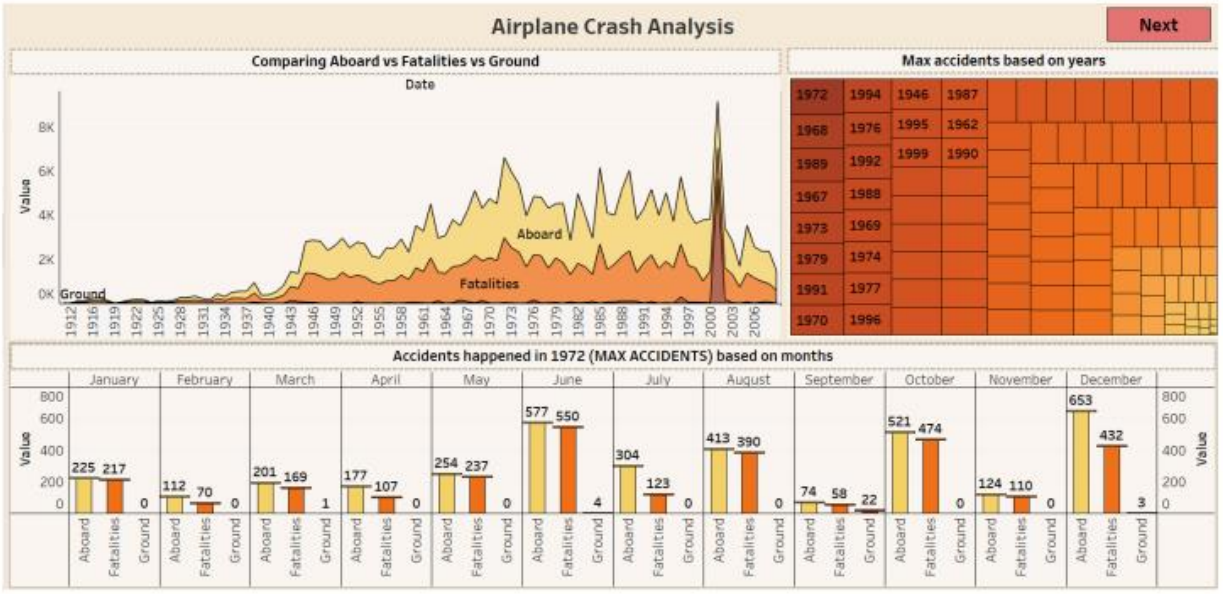
Activity 7: Accidents based on regions

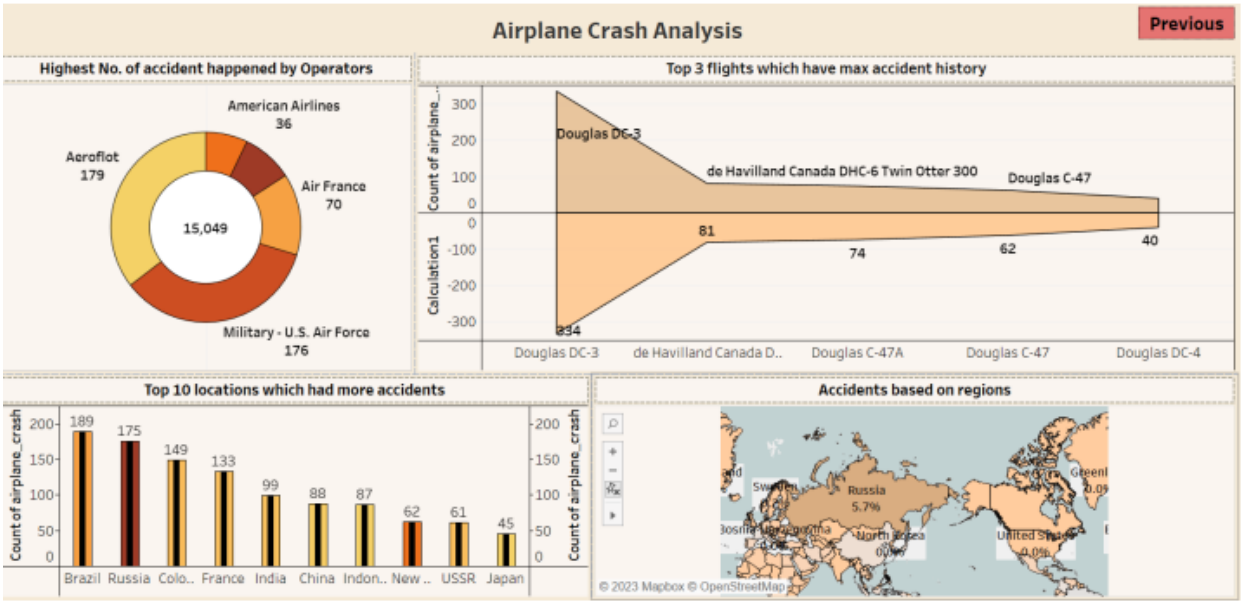


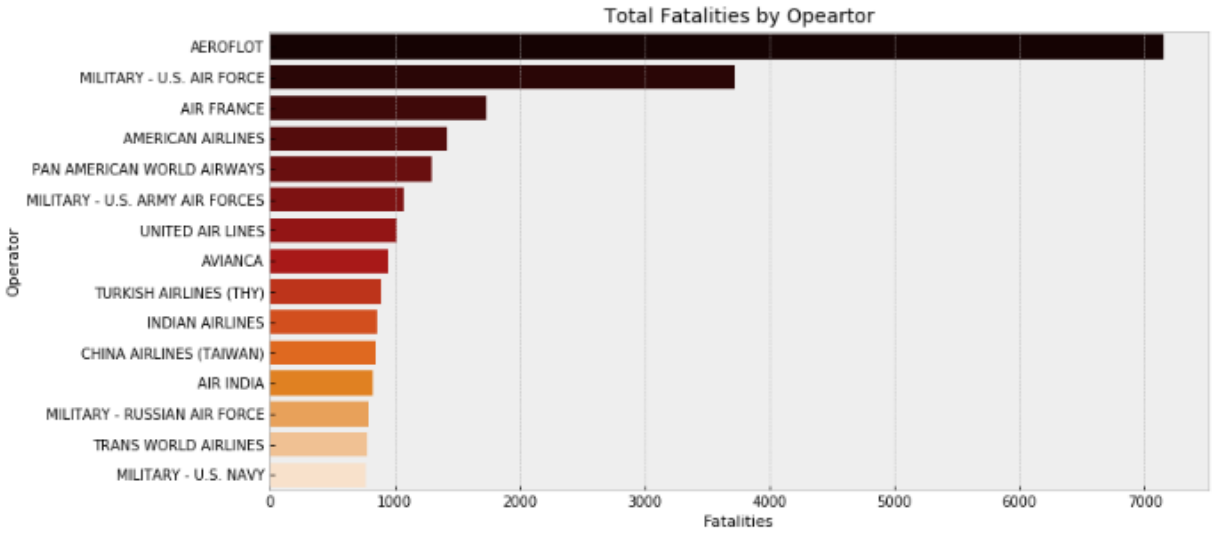
Milestone 5: Dashboard

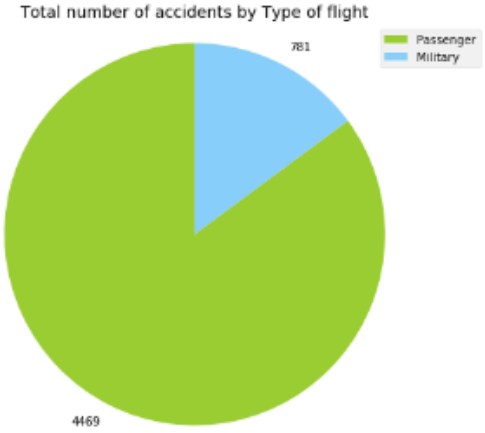
A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data, and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

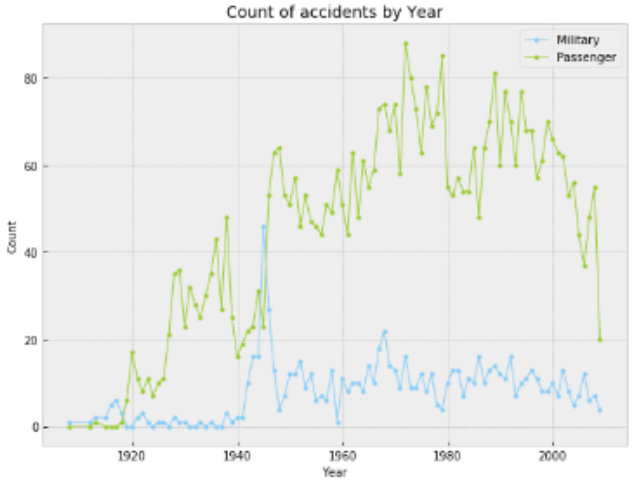
Activity :1- Responsive and Design of Dashboard

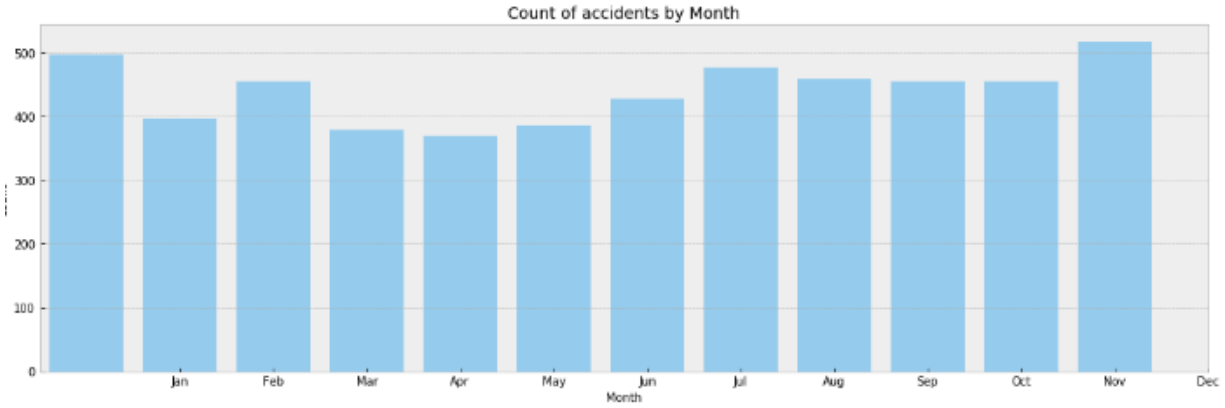


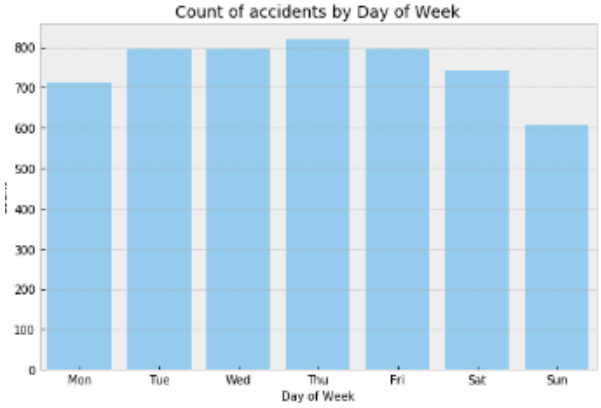


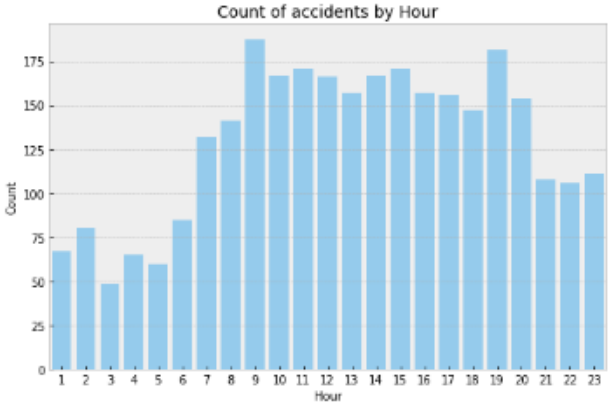

Total Fatalities by Opeartor
AEROFLOT
MILITARY - U.S. AIR FORCE
AIR FRANCE
AMERICAN AIRLINES
PAN AMERICAN WORLD AIRWAYS
MILITARY - U.S. ARMY AIR FORCES
UNITED AIR LINES
AVIANCA
TURKISH AIRLINES (THY)
INDIAN AIRLINES
CHINA AIRLINES (TAIWAN)
AIR INDIA
MILITARY - RUSSIAN AIR FORCE
TRANS WORLD AIRLINES
MILITARY - U.S. NAVY
Operator
0
1000
2000
3000
4000
5000
6000
7000
Fatalities

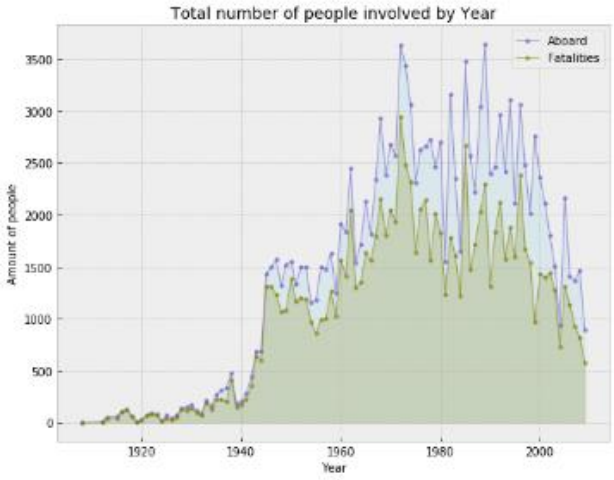

Total number of accidents by Type of flight
Passenger
Military
781
4469

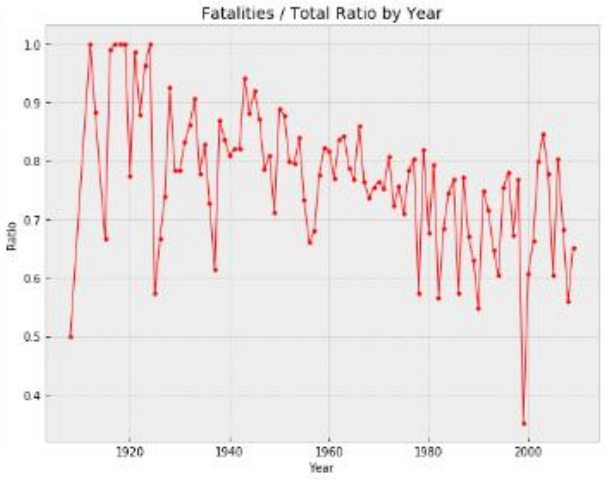

Count of accidents by Year
Military
Passenger
Count
0
20
40
60
80
1920
1940
1960
1980
2000
Year


Count of accidents by Month
Count
Month
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


Count of accidents by Day of Week
Count
Day of Week
Mon
Tue
Wed
Thu
Fri
Sat
Sun


Count of accidents by Hour
Count
Hour

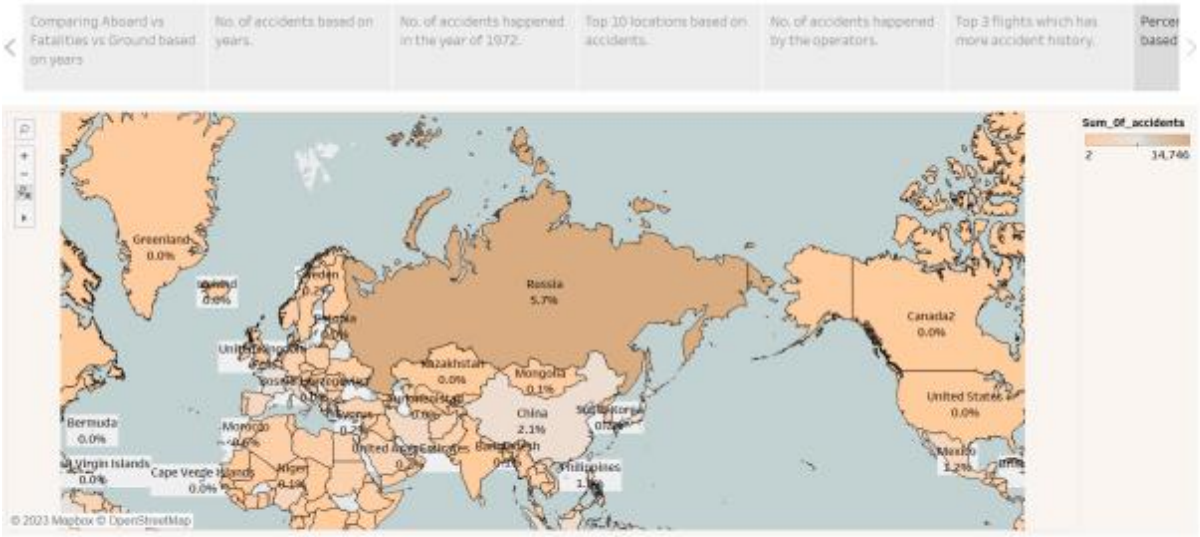

Total number of people involved by Year
Aboard
Fatalities
Amount of people
Year


Fatalities / Total Ratio by Year
Ratio
Year

Milestone 6:

Story A data story is a way of presenting data and analysis in a narrative format, with the goal of making the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos.

Activity:1- No of Scenes of Story



Milestone 7: Performance Testing

Activity 1: Amount of Data Rendered to DB

- The amount of data that is rendered to a database depends on the size of the dataset and the capacity of the database to store and retrieve data.
- Open the MySQL Workbench, go to the database then click to expand the tables,select the table and click on (i) button to get the information related to table such as column count,table rows etc.

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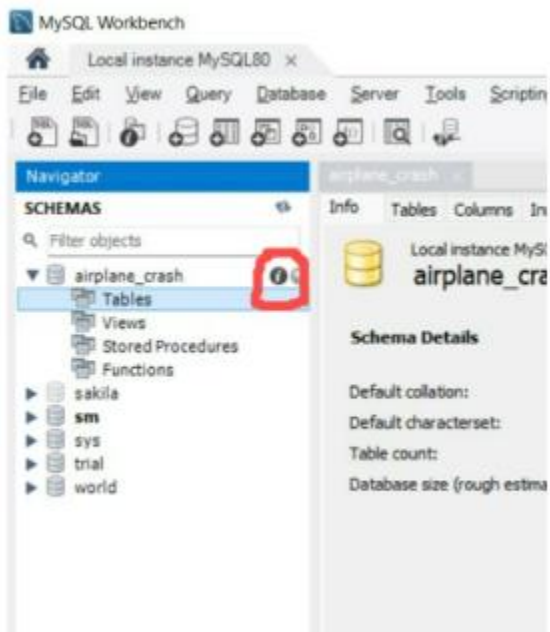
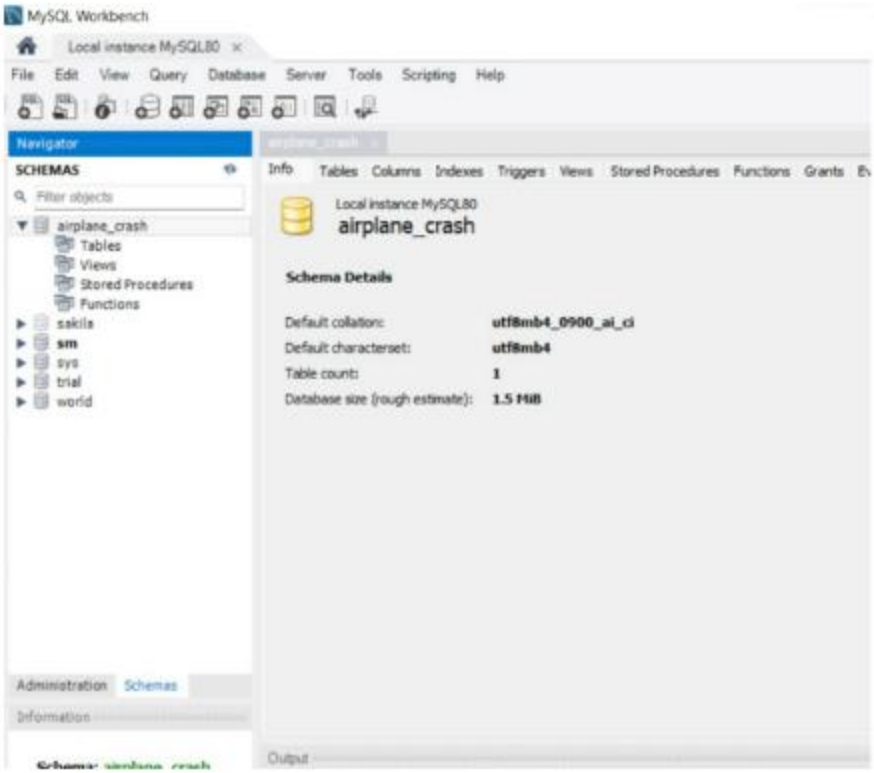
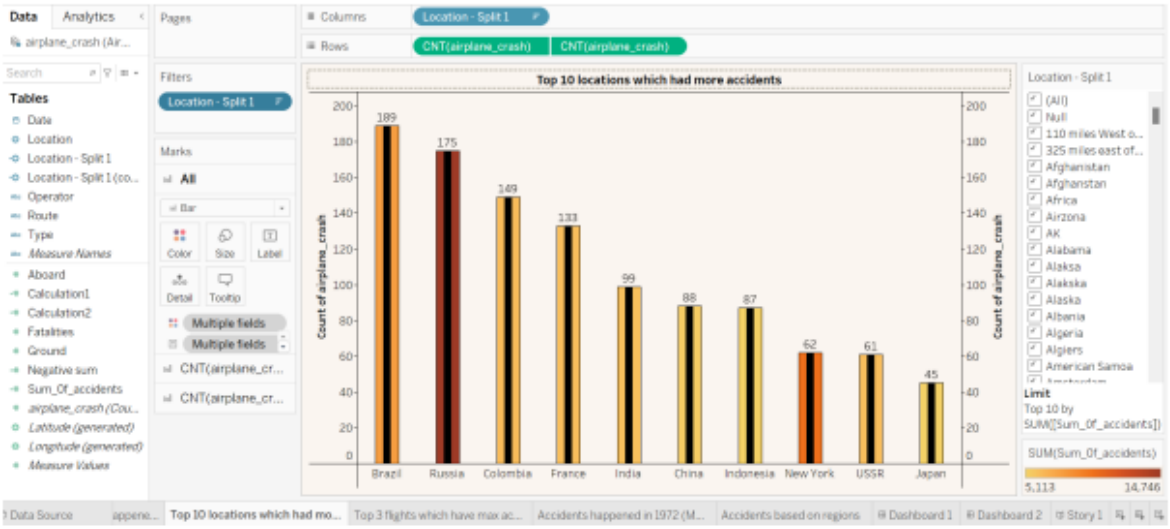
column count,table rows etc.





Activity 2: Utilization of Data Filters



Activity 3: No of Calculation Fields

*Date
* Location
* Location split 1
* Location split 1(co....
* Operator
* Route
* Type
* Measure Names
* Aboard
* Calculation 1
* Calculation 2
* Fatalities
* Ground
* Negative sum
* Sum_Of_accidents
* Airplane_crash(cou....
* Latitude(generated)
*Longitude(generated)
*Measure Values

Activity 4:

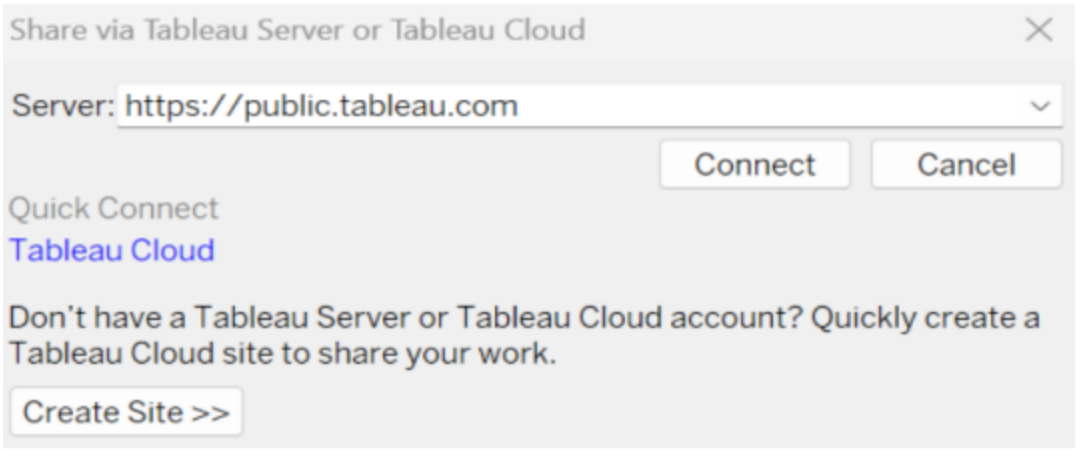
No of Visualizations / Graphs

1. Comparing Aboard vs Fatalities vs Ground
2. Max accidents based on years

3. Accidents happened in 1972 (MAX ACCIDENTS) based on months
4. Highest No. of accident happened by Operators
5. Top 10 locations which had more accidents
6. Top 3 flights which have max accident history
7. Accidents based on regions

Milestone 8:

Web integration Publishing helps us to track and monitor key performance metrics, to communicate results and progress. help a publisher stay informed, make better decisions, and communicate their performance to others.



Give the server address of your tableau public account and click on connect.

Step 2: Once you click on connect it will ask you for tableau public user name and password

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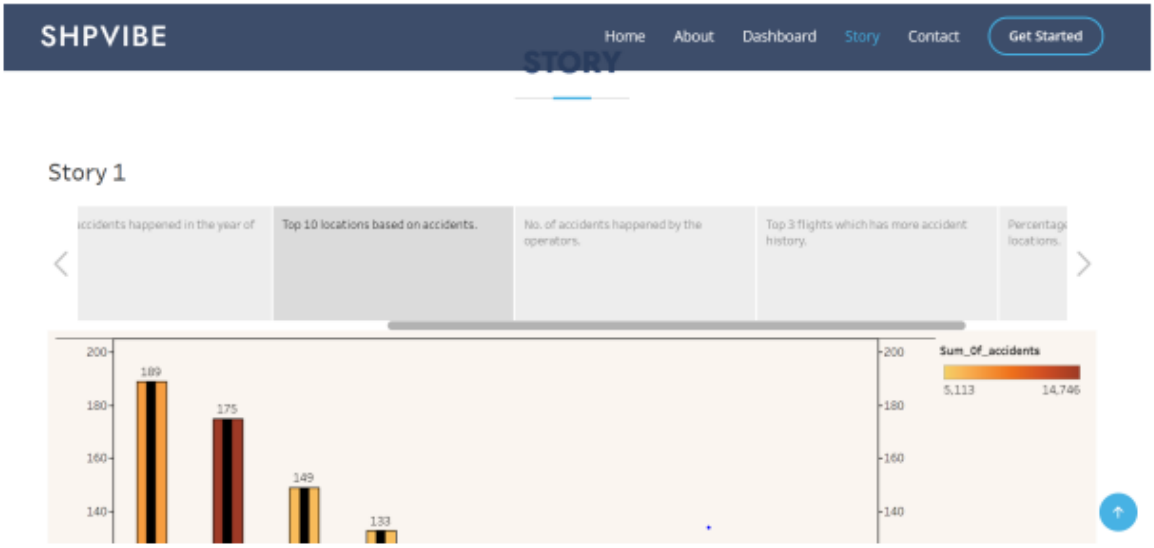
Once you login into your tableau public using thecredentials, the particular visualization will be published into tableau public


SHPVIBE
Home
About
Dashboard
Story
Contact
Get Started
Airplane Crash analysis
Airplane Crashes and Fatalities Since 1908
Get Started
Watch Video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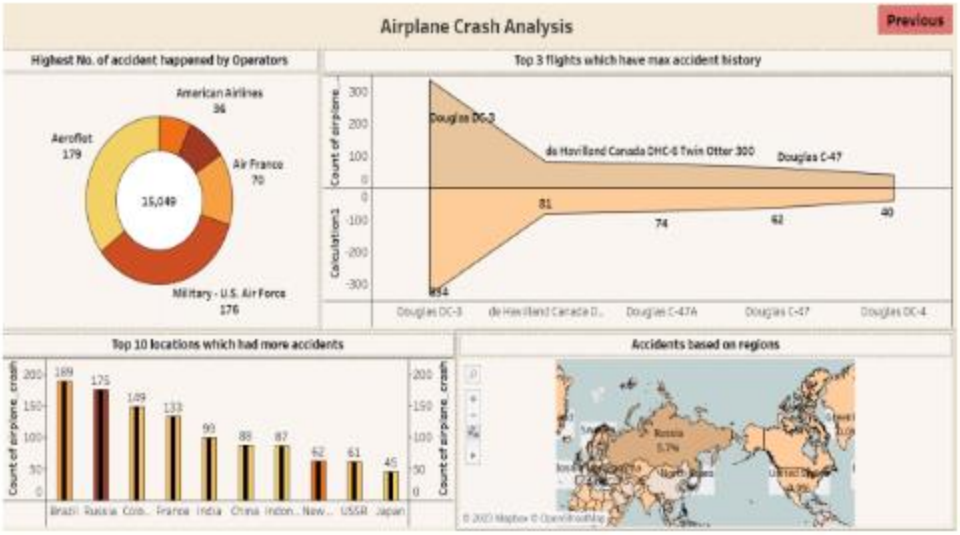
STORY
Story 1
ccidents happened in the year of
Top 10 locations based on accidents.
No. of accidents happened by the operators.
Top 3 flights which has more accident history.
Percentage locations.
200
180
160
140
189
175
149
133
Sum_Of_accidents
5,113
14,746



Milestone 9:

Project Demonstration & Documentation Below mentioned deliverables to be submitted along with other deliverables

Activity 1:- Record explanation Video for project end to end solution

Activity 2:- Project Documentation-Step by step project development procedure.