

Tragedy of Flight – A comprehensive Crash Analysis

Project Report Template

Done by:

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1-INTRODUCTION:

1.1 OVERVIEW ABOUT PROJECT:



- ❖ 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 analyze a database of past accidents in order to prevent an accident from happening.
- ❖ To effectively discover the hazard that led to the accident and to prevent their recurrence in future accident or incident. In the course of that investigation, additional hazards which increased damage and injury (inadequate crashworthy systems, system safeguards, rescue team response, etc.)
- ❖ A root cause analysis is performed as a reaction to risk management processes as defined in your aviation SMS manual. This analysis is to understand the factors that trigger safety performance with a particular event.

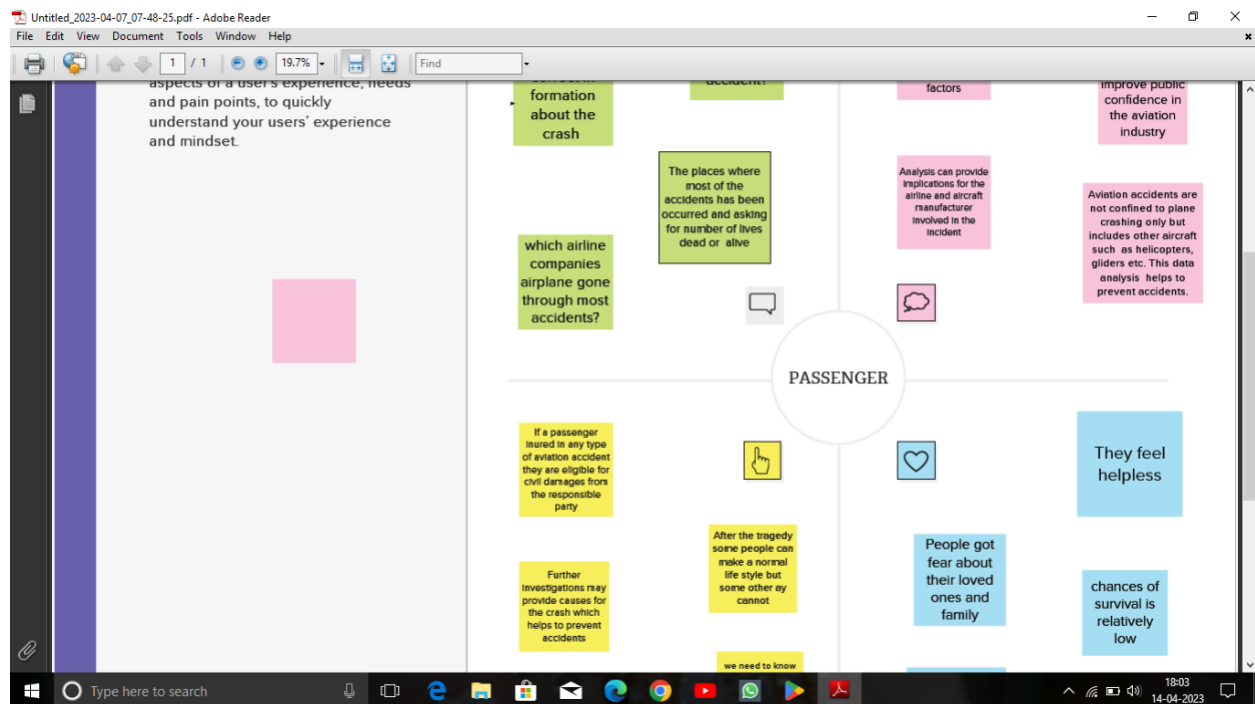
1.2 PURPOSE OF THE PROJECT:

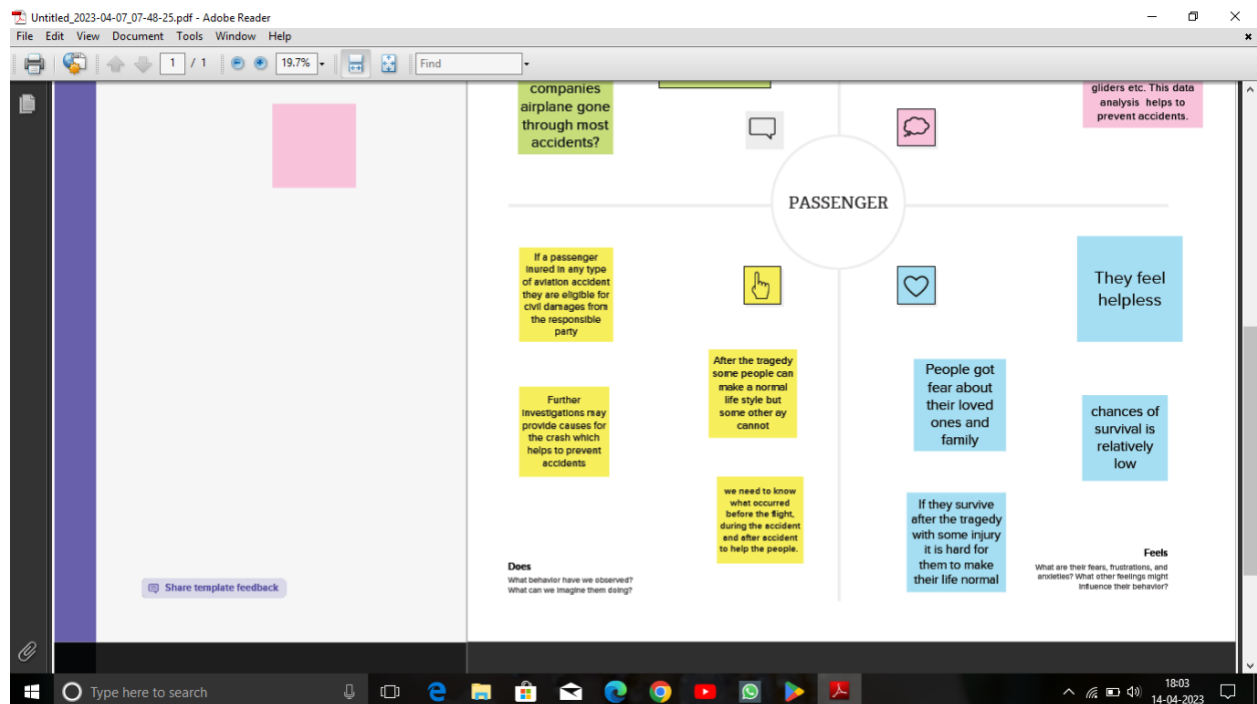
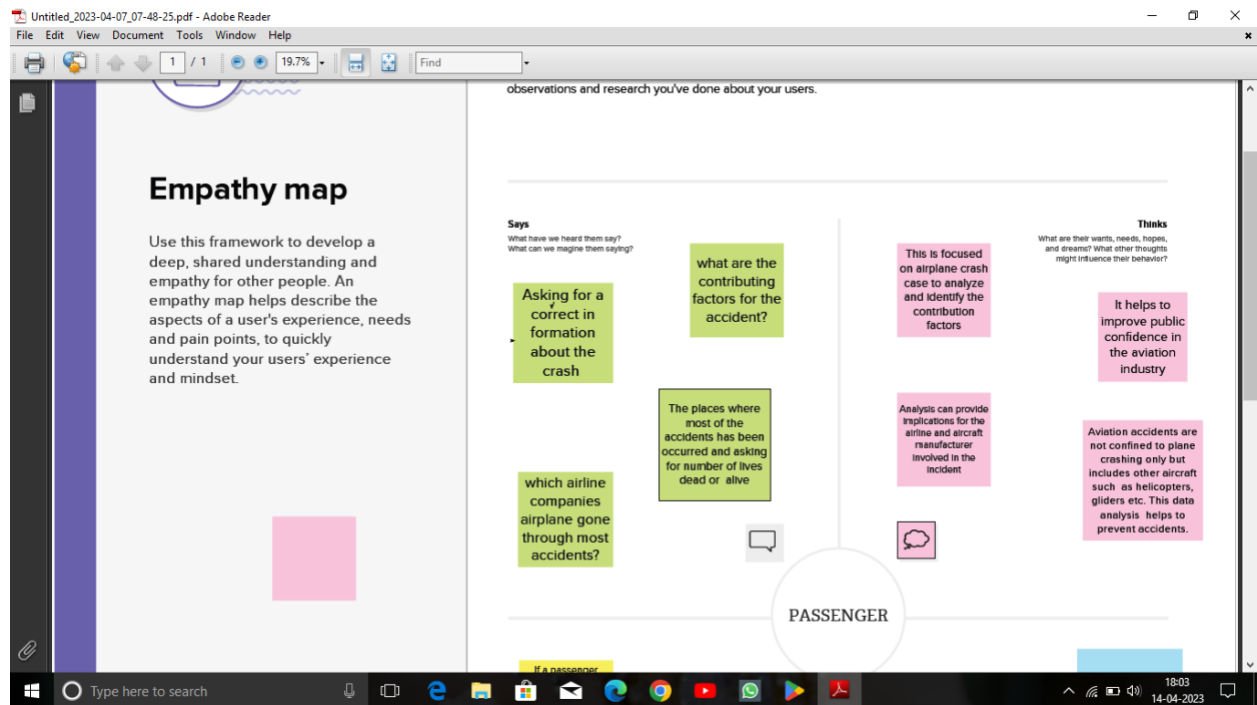
- ❖ The main purpose of accident analysis is to prevent accidents in future. This statement is not a trivial as it looks to many the objective is to identify those were responsible, or simply to fulfill a legal requirement.
- ❖ This is focused on airplane crash case to analyze and identify the accident contributing factors.

- ❖ It helps to improve public confidence in the aviation industry.
- ❖ Analysis can provide implications for the airline and aircraft manufacturer involved in the incident.
- ❖ Aviation accident analysis is an important part in aviation safety research.
- ❖ This involves bringing in other expert witness including engineers, metallurgists and meteorologists to analyze the entire case about the crash.

2- PROBLEM DEFINITION AND DESIGN THINKING:

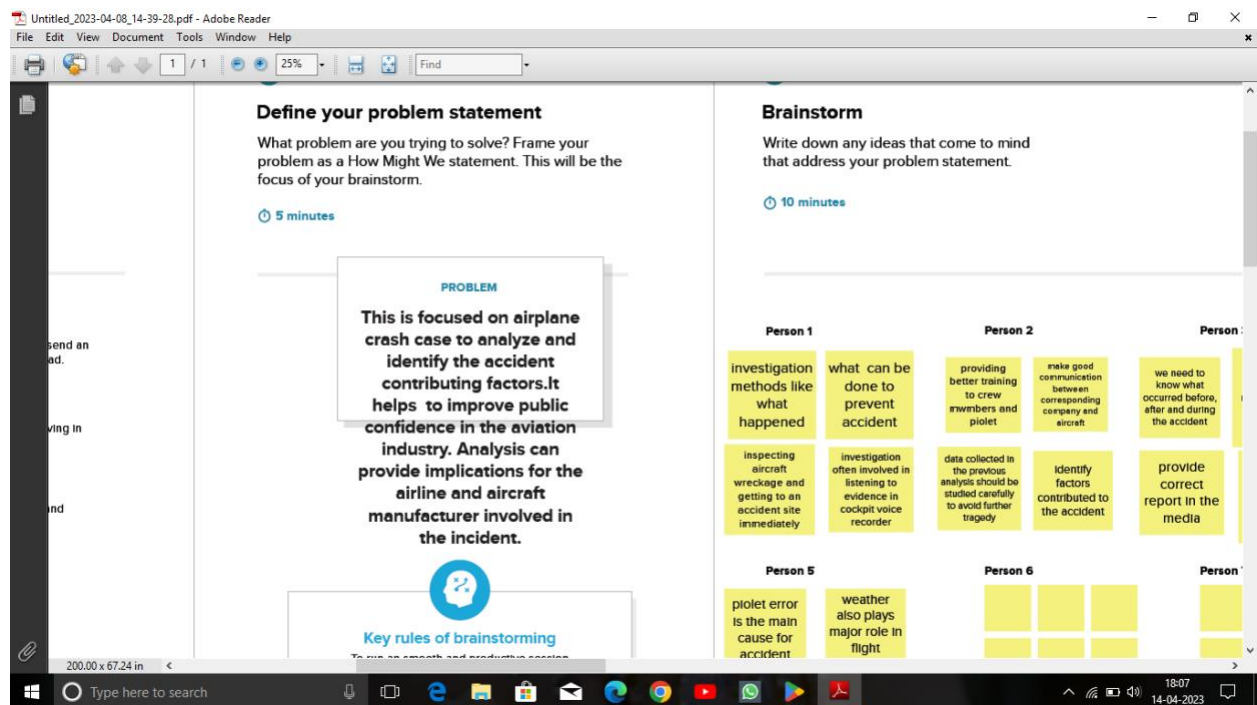
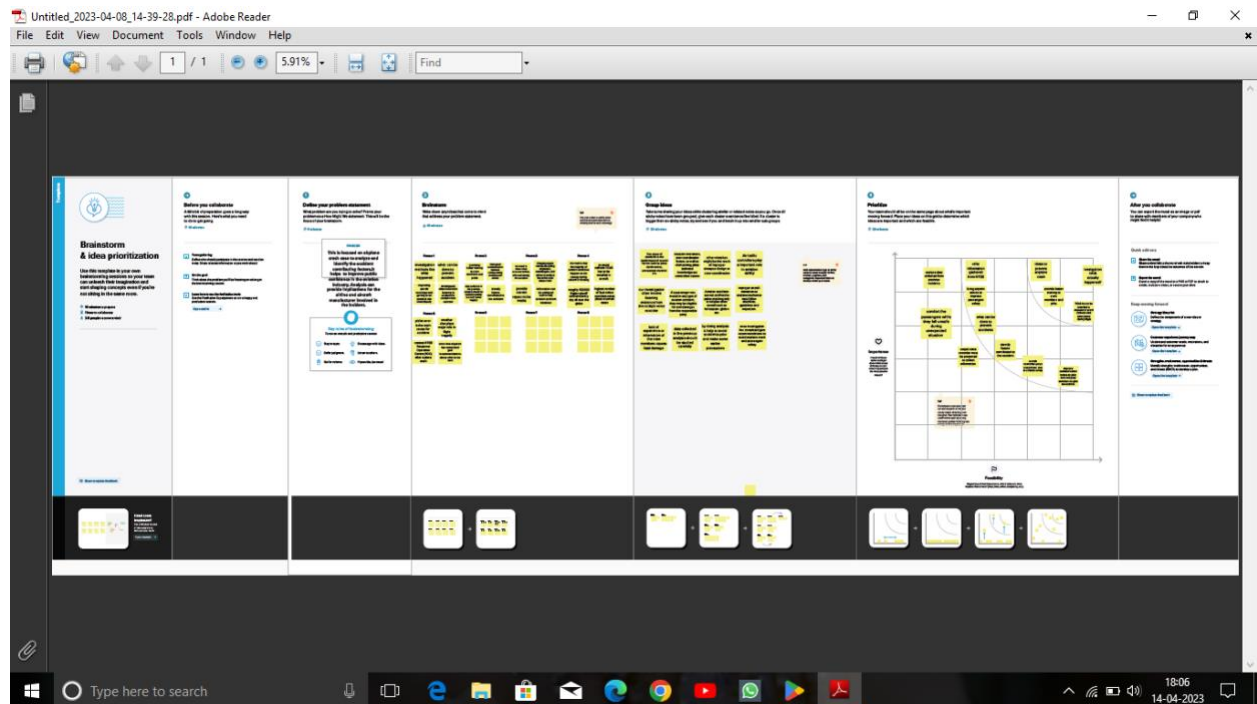
2.1 EMPATHY MAP:





- ❖ This empathy map tells us says, thinks, feels and does about our project and what are the steps to implement the project.

2.2 IDEATION AND BRAINSTORMING MAP:



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PROBLEM

Based on airplane accidents, we need to analyze and identify the factors that led to the accident. It is important to improve public safety in the aviation industry. Analysis can be conducted for the causes of the accident and aircraft involved in the accident.

Brainstorming

Encourage wild ideas.
Listen to others.
If possible, be visual.

Person 1

- Investigation methods like what happened
- what can be done to prevent accident
- inspecting aircraft wreckage and getting to an accident site immediately
- Investigation often involved in listening to evidence in cockpit voice recorder

Person 2

- providing better training to crew members and pilot
- data collected in the previous analysis should be studied carefully to avoid further tragedy
- Identify factors contributed to the accident

Person 3

- we need to know what occurred before, after and during the accident
- bring expert witness including engineers, metallurgists, and others to analyze the entire case about crash
- provide correct report in the media
- Information can be gathered from NTSB aviation accident database

Person 4

- the truth is that the majority of aviation accidents happen on the runway during takeoff or landing
- to avoid collision TCAS has to be installed in aircraft
- roughly 100,000 flights takeoff and land every day all over the globe
- highest number of fatal airline accidents takes place in United States

Person 5

- pilot error is the main cause for accident
- weather also plays major role in flight tragedy
- contact NTSB Response Operation Centre (ROC) after a plane crash
- once investigation has completed give recommendations about what to do next

Person 6

Person 7

Person 8

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Person 4

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- roughly 100,000 flights takeoff and land every day all over the globe
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Person 8

- lack of experience or information of the crew members causes fatal damage
- data collected in the previous analysis should be studied carefully
- by doing analysis it help to avoid accidents prior and make some earlier precautions
- once investigation has completed give recommendations to avoid airplane crash and passengers safety

Person 1

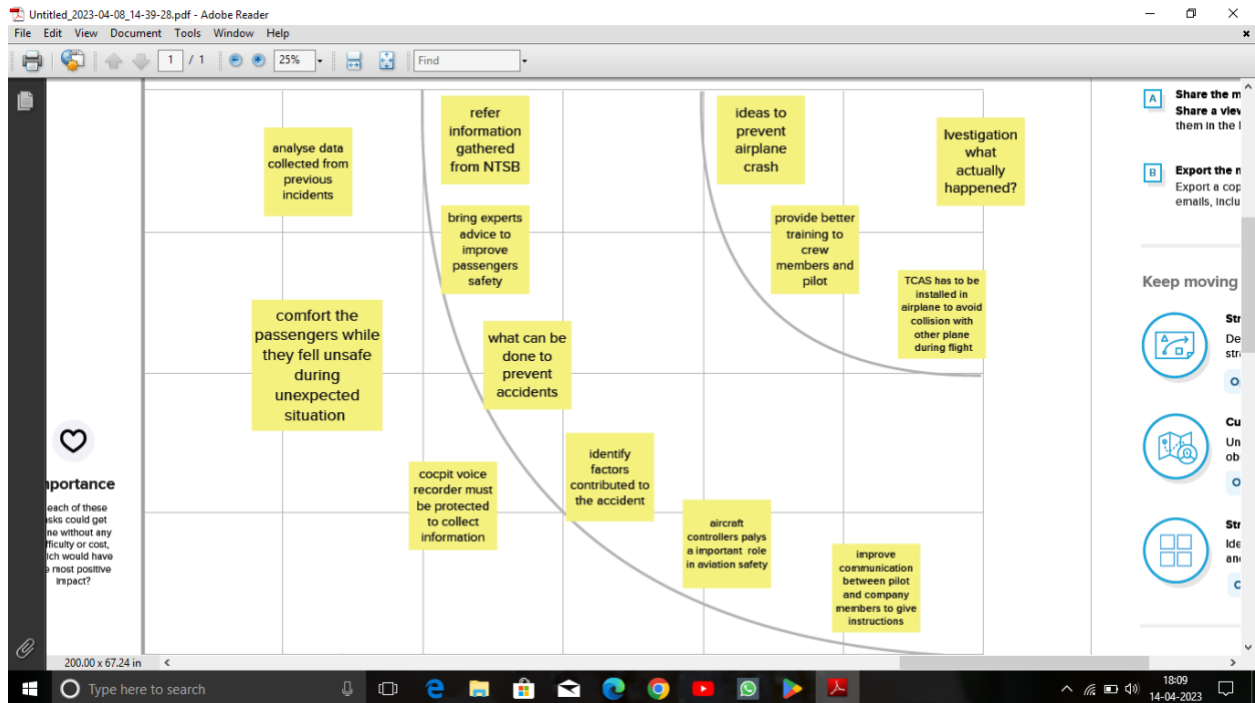
- The cause of accidents is the combination of several factors such as pilots carelessness, unexpected situation etc.
- situation awareness, crew coordination factors, as well as shortcomings pilots technical knowledge are some other causes
- other mistakes might be the result of improper airspace design or crew coordination
- Air traffic controllers play a important role in aviation safety

Person 2

- our investigation often involve listening evidence from the cockpit voice recorder
- if a passenger was injured in any type of aviation accident, they may be eligible for civil damages from the responsible party
- Aviation accidents are not confined to plane crashing only it includes other aircraft such as helicopters, gliders etc.
- Improper aircraft maintenance airplane mechanics must follow checklists, guidelines and inspection.

TIP

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

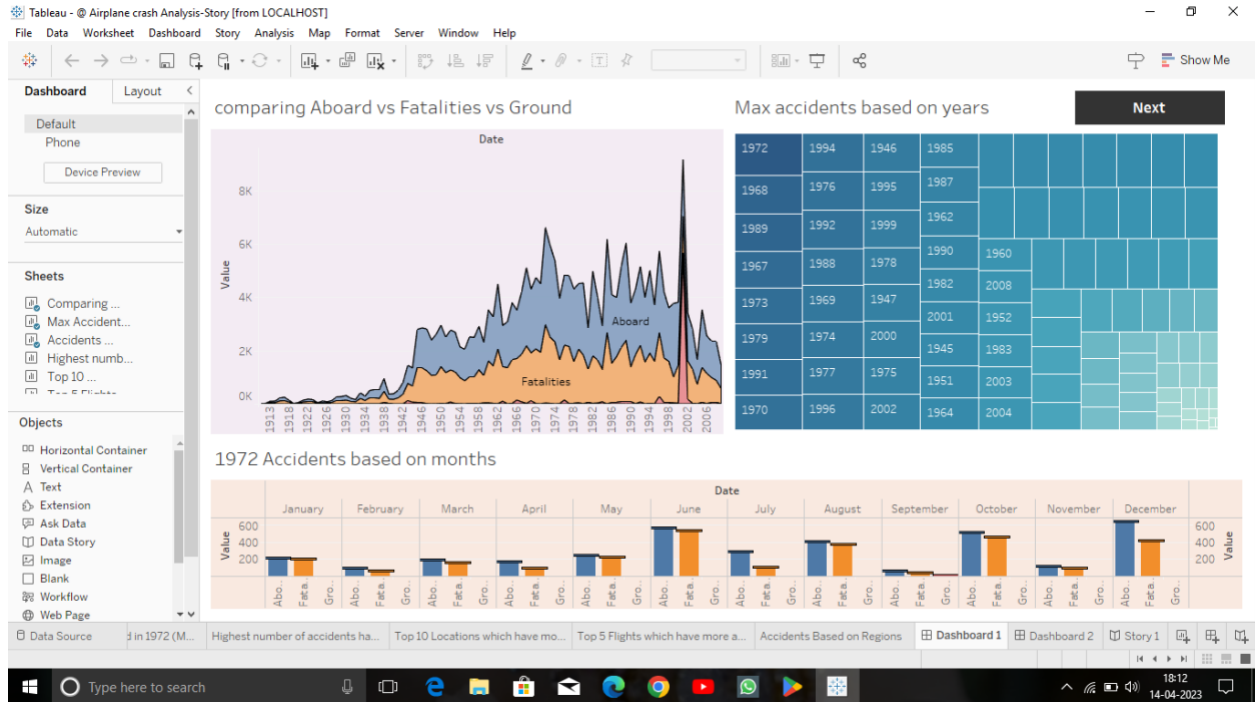


- ❖ The above template represents what the problem is , what we are trying to solve, what are the ideas of each team member, group ideas and which should be traced out first or prioritize first.
- ❖ It shows our thoughts about the project.

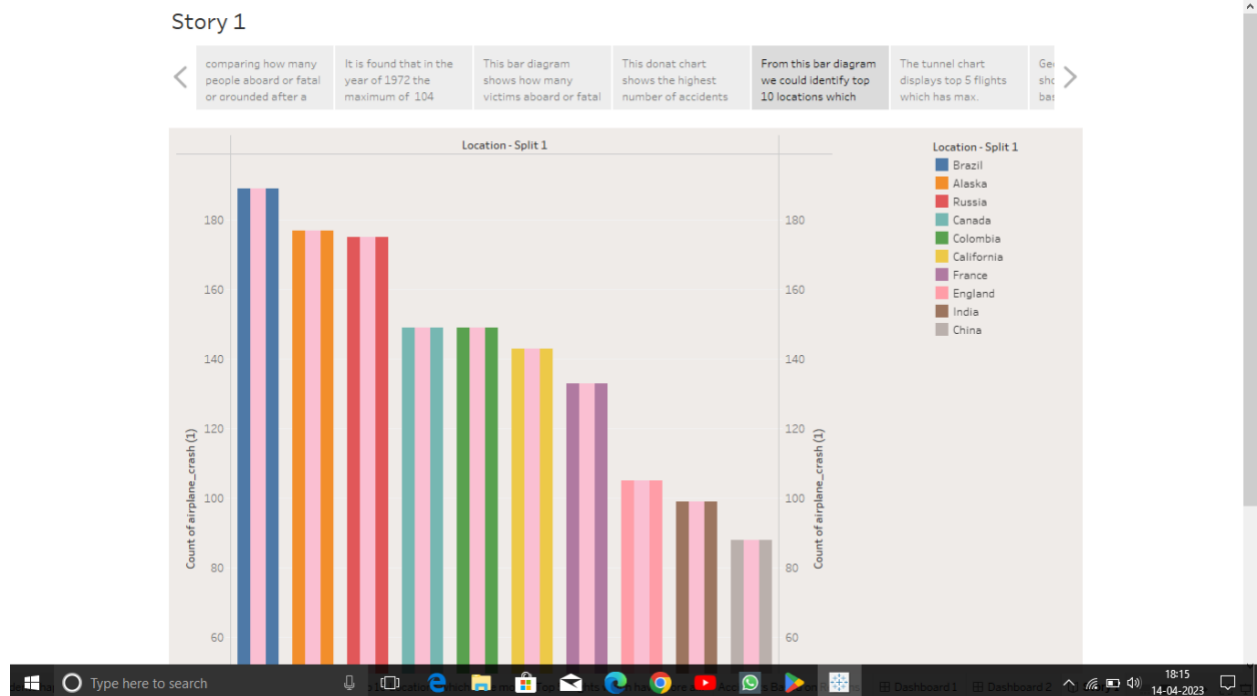
3 -RESULTS:

- ❖ Here are the final outlook of our project like dashboards, story and the web integration we have created.

3.1 DASHBOARD:

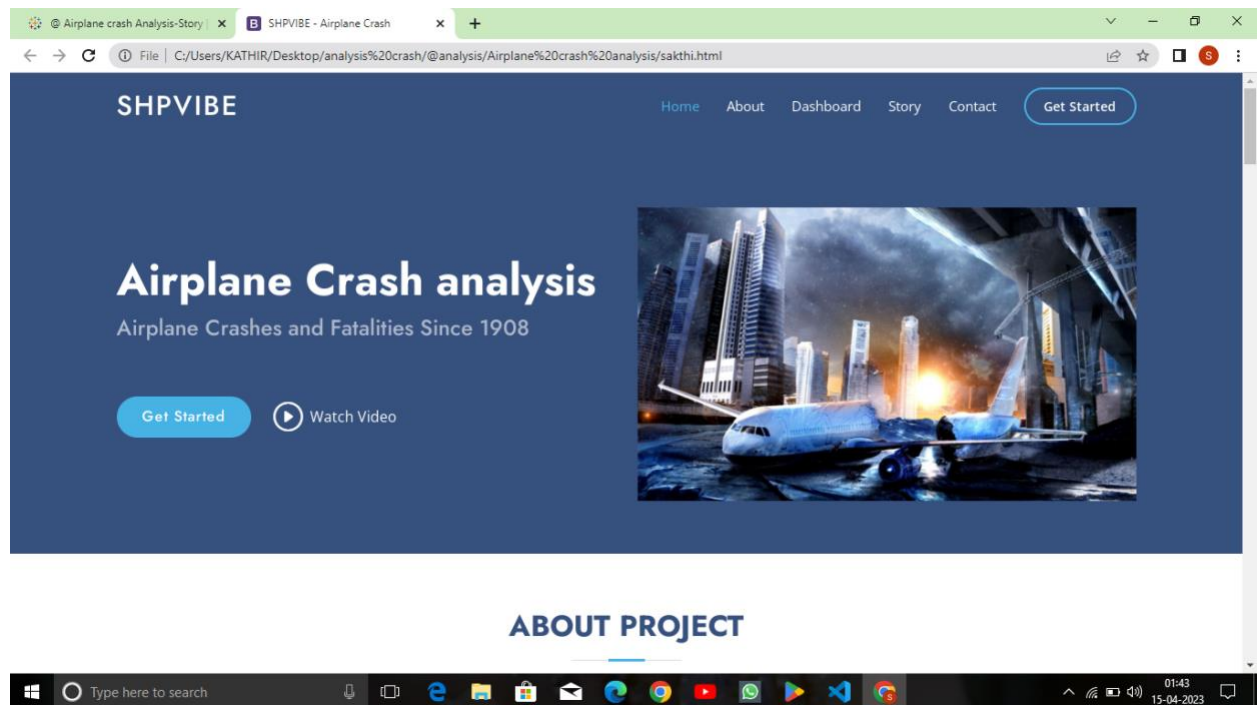


3.2 STORY:



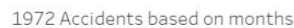
3.3 WEB INTEGRATION RESULTS:

❖ In this area we shown the web integration we made through HTML.



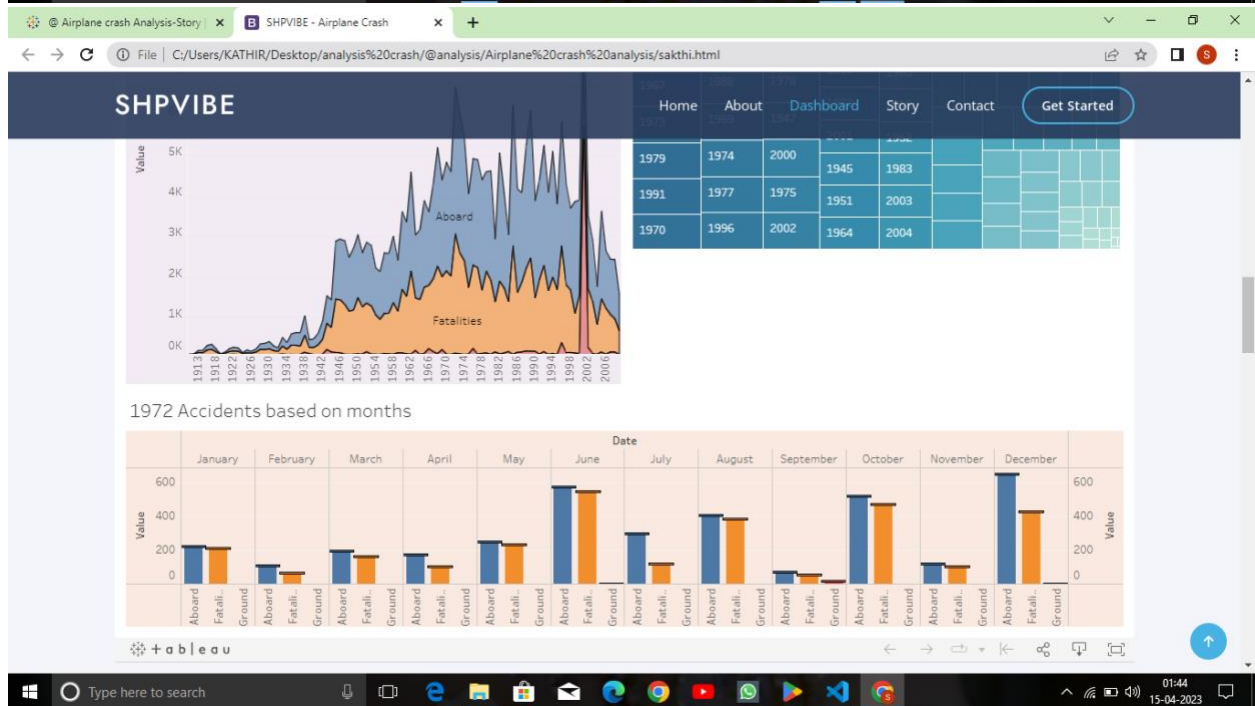
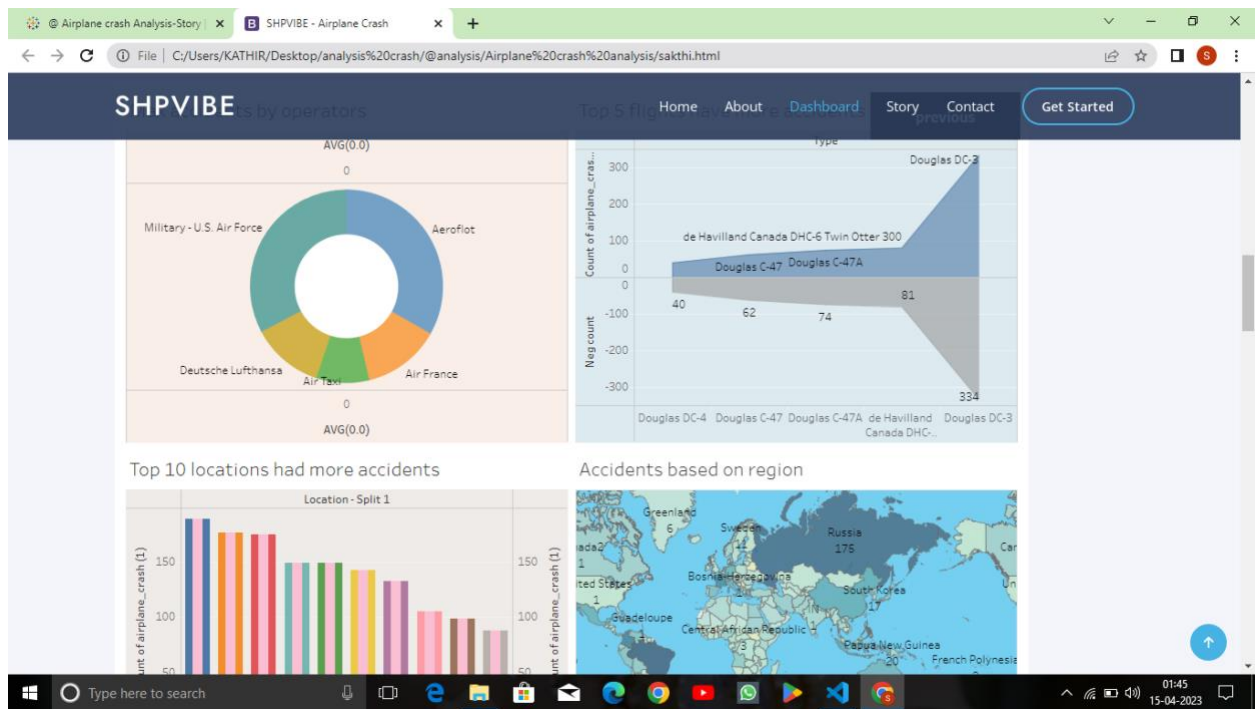
- ✔ a) a person is fatally or seriously injured,
- ✔ b) the aircraft sustains significant damage or structural failure, or
- ✔ c) the aircraft goes missing or becomes completely inaccessible.

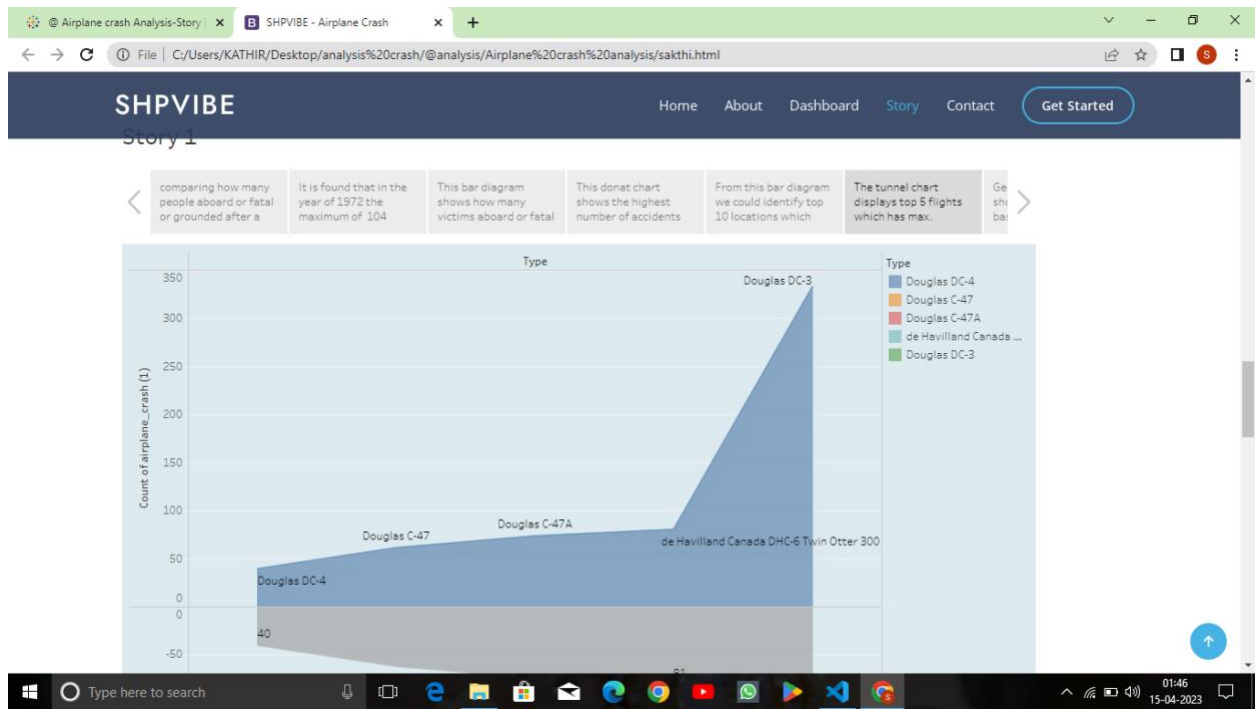
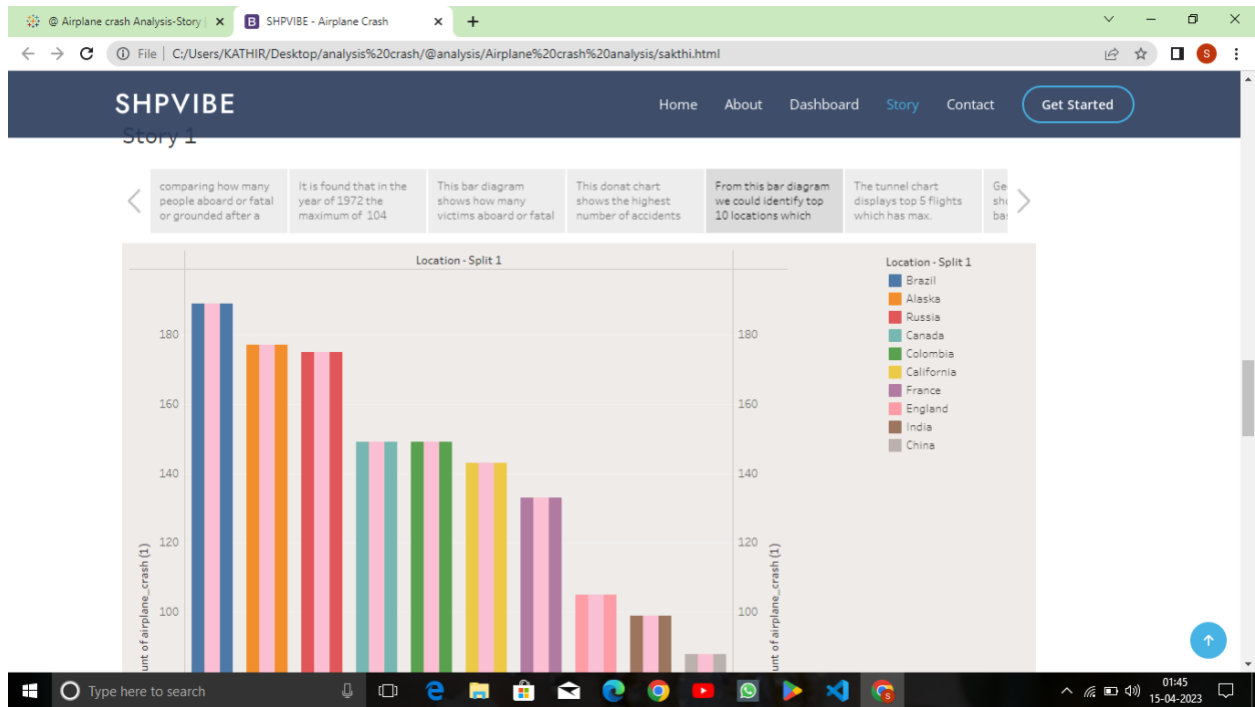
- ✔ All civil and commercial aviation accidents of scheduled and non-scheduled passenger airliners worldwide, which resulted in a fatality (including all U.S. Part 121 and Part 135 fatal accidents)
- ✔ All cargo, positioning, ferry and test flight fatal accidents.
- ✔ All military transport accidents with 10 or more fatalities.
- ✔ All commercial and military helicopter accidents with greater than 10 fatalities.
- ✔ All civil and military airship accidents involving fatalities.
- ✔ Aviation accidents involving the death of famous people.

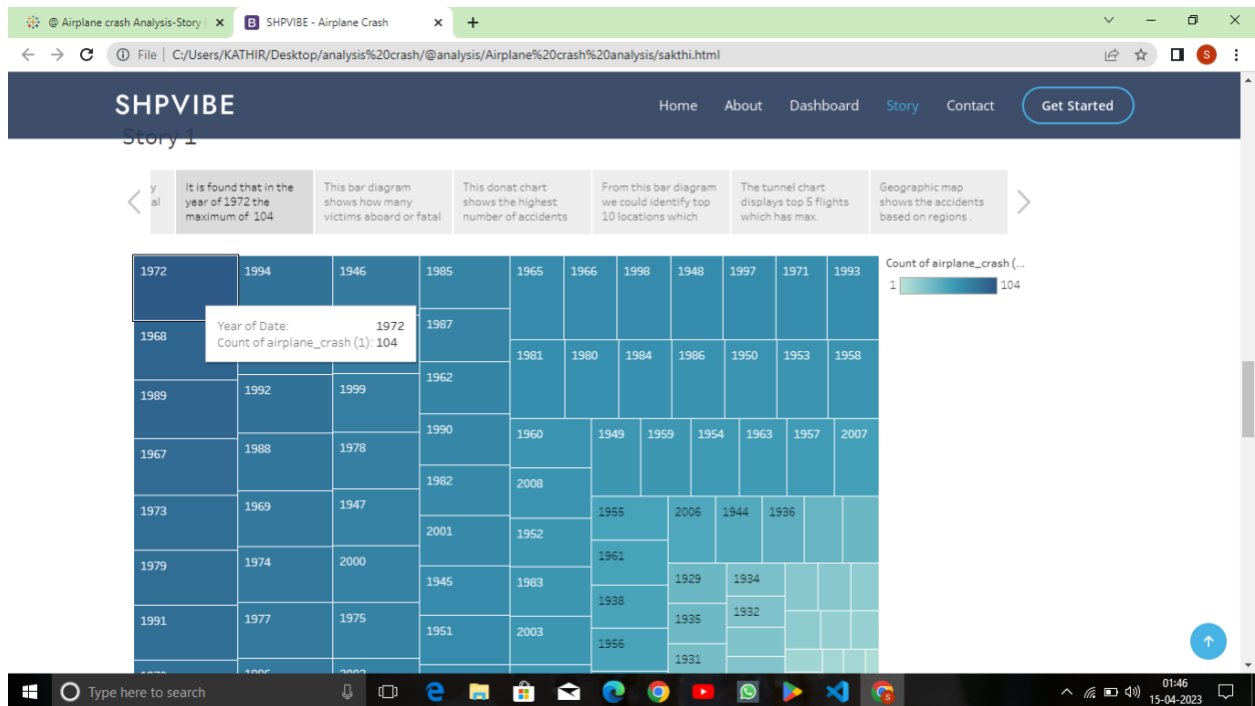
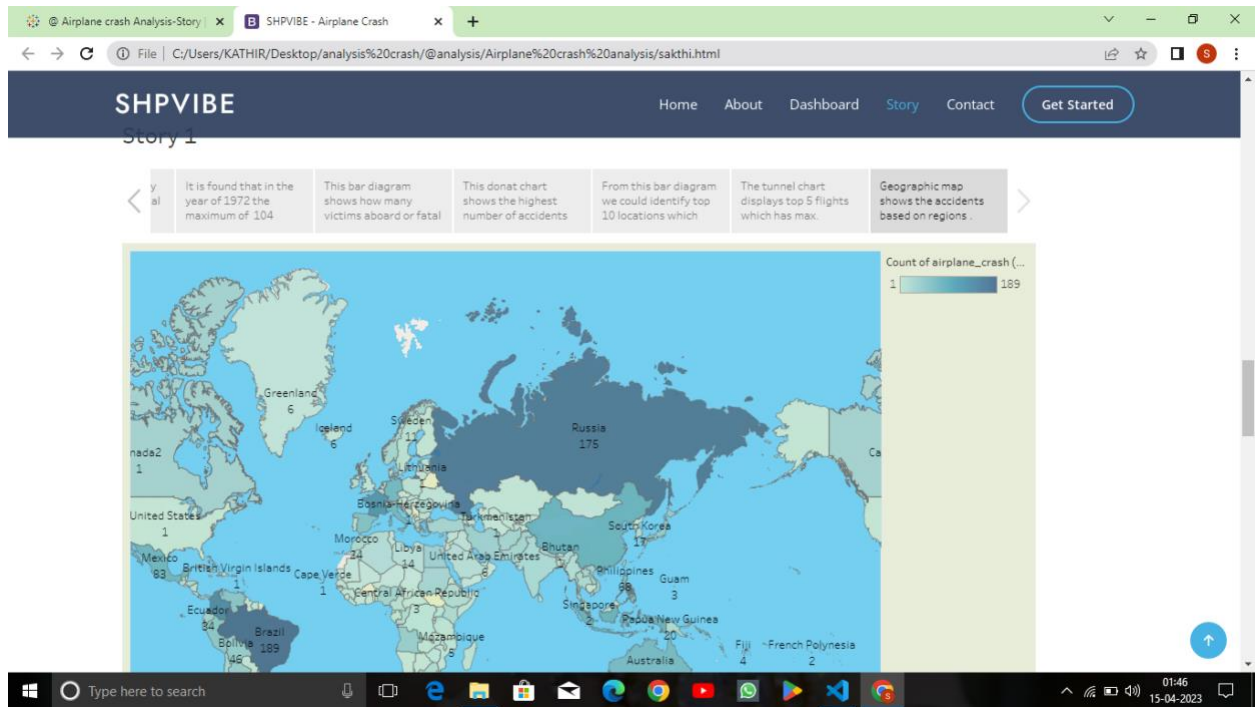


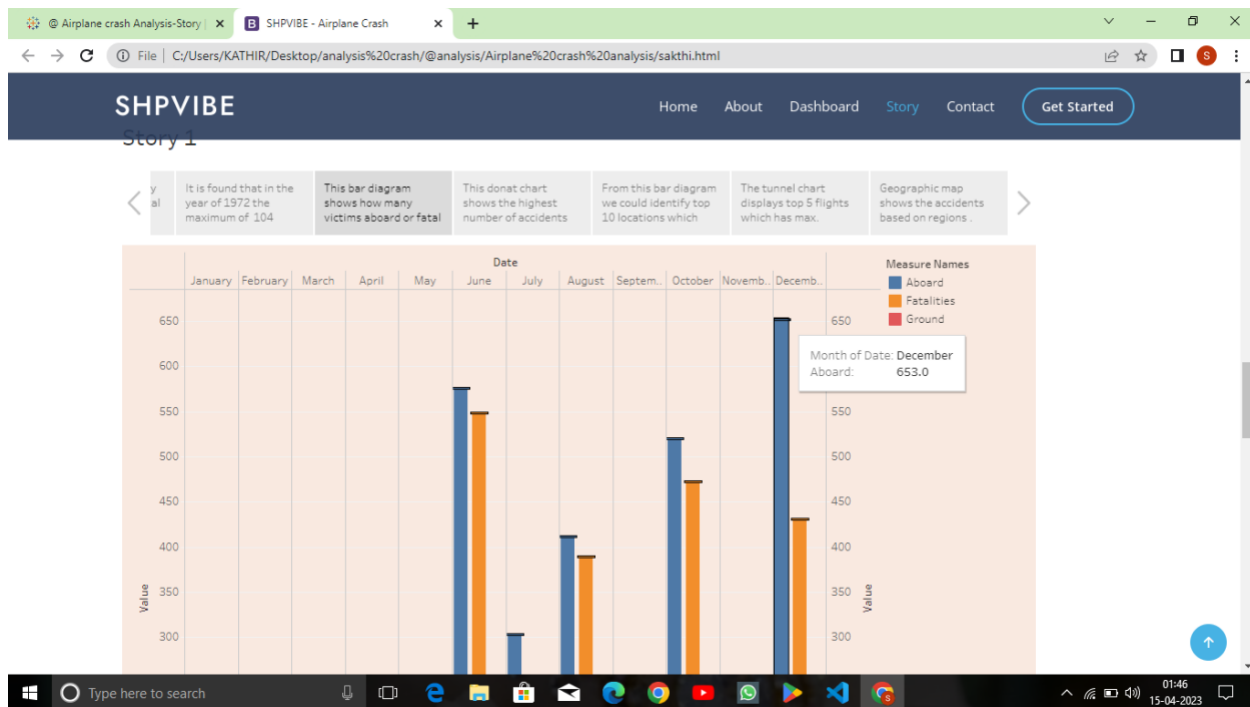
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4- ADAVANTAGES AND DISADVANTAGES:

ADVANTAGES:

- To effectively discover the hazards that led to the accidents and to prevent their recurrence in a future accident of incident.
- It helps to track the cause for the accident.
- It helps to improve public confidence in the aviation industry.
- Once investigation had completed there may be a chance of providing some recommendations of what to do next.
- It helps to prevent accidents in future.

DISADVANTAGES:

- The survey is not accurate.
- There is some problem with getting information from the cockpit.
- Lack of maintenance of airplane cause more accidents.
- Hard to indentify the place where the plane had crash.

- Collecting information from crew members, pilot and grounded people is hard.

5 -APPLICATIONS:

- Analytics provides insights into the performance of an application by producing real-time analysis through visualization of data.
- Real analysis is an area analysis that studies concepts such as sequence, continuity etc.
- Mathematics analysis is useful in many branches of mathematics, mechanical engineering, electrical engineering and in quantum theory.
- Analysis is therefore identifying the key components and using the component skills associated with them to solve the problem.
- Data analytics provides utmost security to the organization.
- Improving safety purpose.
- Trace out causes for the accident.
- Identify what was the real reason for the crash
- Main purpose is to protect people from accidents.

6- CONCLUSION:

- ❖ This is focused on airplane crash case to analyze and identify the accident contributing factors. From our analysis we have created visualizations, dashboards and story with tableau. Then we publish all those things in tableau public. And we have done web integration to our project through HTML. Hope this analysis will help to prevent accidents in future. This analysis revealed where maximum number of accidents had occurred, which flight gone through more accidents, number of victims aboard or fatal or ground and so on.

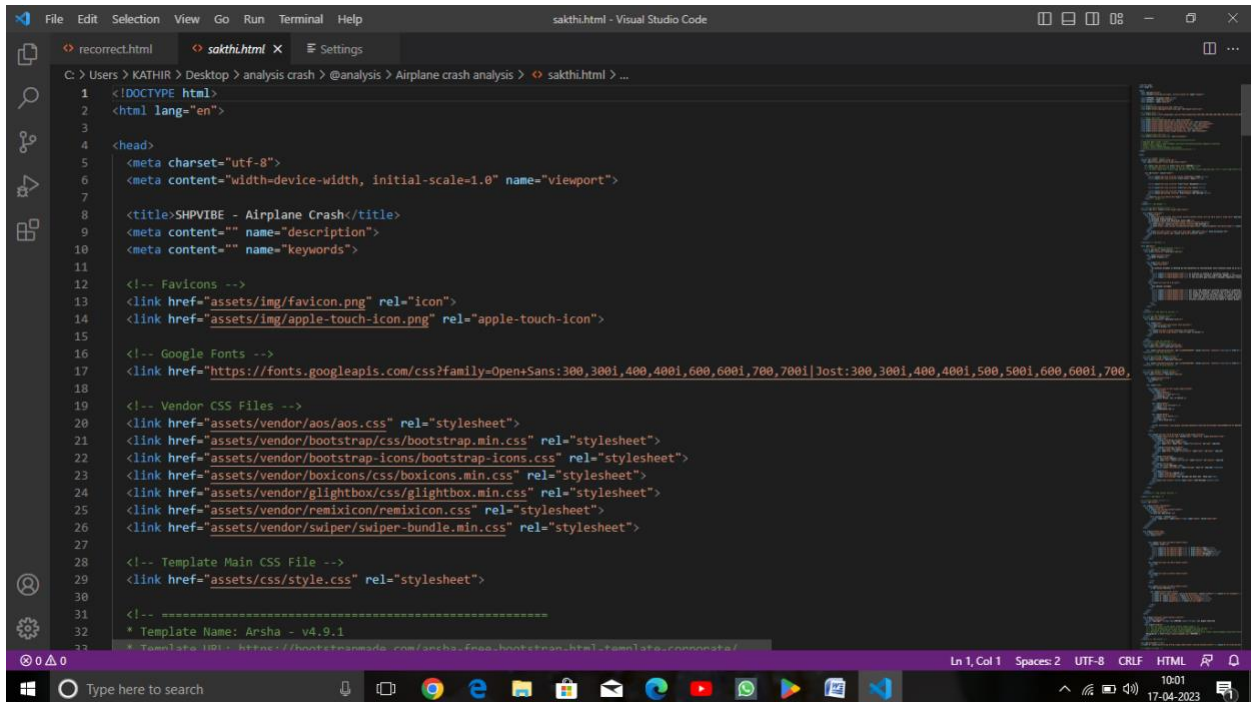
7- FUTURE SCOPE:

- ❖ This type of analysis plays an important role in developing new technology to prevent crashes. However pilot's presence of mind is important to handle unexpected situation. This is able to predict whether the airplane

will be safe or not. As a result the delays of ever airplane can also be predicted. One solution that could help reduce the number of crashes in technological advancement. For example, the development and implementation of Automatic Dependent Surveillance-Broadcast technology (ADS-B) will help reduce the risk of airplane collisions and weather related accidents, provide more efficient routes under adverse weather conditions, and improve situational awareness of pilots. Advancement in technology will be the first step in preventing any future accidents.

8-APPENDIX:

SOURCE CODE:



```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5 <meta charset="utf-8">
6 <meta content="width=device-width, initial-scale=1.0" name="viewport">
7
8 <title>SHPVIBE - Airplane Crash</title>
9 <meta content="" name="description">
10 <meta content="" name="keywords">
11
12 <!-- Favicons -->
13 <link href="assets/img/favicon.png" rel="icon">
14 <link href="assets/img/apple-touch-icon.png" rel="apple-touch-icon">
15
16 <!-- Google Fonts -->
17 <link href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,600,600i,700,700i|Jost:300,300i,400,400i,500,500i,600,600i,700,700i" rel="stylesheet">
18
19 <!-- Vendor CSS Files -->
20 <link href="assets/vendor/aos/aos.css" rel="stylesheet">
21 <link href="assets/vendor/bootstrap/css/bootstrap.min.css" rel="stylesheet">
22 <link href="assets/vendor/bootstrap-icons/bootstrap-icons.css" rel="stylesheet">
23 <link href="assets/vendor/boxicons/css/boxicons.min.css" rel="stylesheet">
24 <link href="assets/vendor/glightbox/css/glightbox.min.css" rel="stylesheet">
25 <link href="assets/vendor/remixicon/remixicon.css" rel="stylesheet">
26 <link href="assets/vendor/swiper/swiper-bundle.min.css" rel="stylesheet">
27
28 <!-- Template Main CSS File -->
29 <link href="assets/css/style.css" rel="stylesheet">
30
31 <!-- =====
32 * Template Name: Arsha - v4.9.1
33 * Template URL: https://bootstrapmade.com/arsha-free-bootstrap-html-template-corporate/
```



```
File Edit Selection View Go Run Terminal Help sakthi.html - Visual Studio Code
C:\Users\KATHIR\Desktop> analysis crash > @analysis > Airplane crash analysis > sakthi.html > html > body > main#main > section#cta.cta > div.container > div.row > div.col-lg-9.text-center.te

249
250
251 <div class="col-lg-3 col-md-6 footer-links">
252 <h4>Useful Links</h4>
253 <ul>
254 <li><i class="bx bx-chevron-right"></i> <a href="#hero">Home</a></li>
255 <li><i class="bx bx-chevron-right"></i> <a href="#about">About</a></li>
256 <li><i class="bx bx-chevron-right"></i> <a href="#portfolio">Charts</a></li>
257 <li><i class="bx bx-chevron-right"></i> <a href="#team">Dashboard</a></li>
258 <li><i class="bx bx-chevron-right"></i> <a href="#pricing">Story</a></li>
259 </ul>
260 </div>
261
262 <div class="col-lg-3 col-md-6 footer-links">
263 <h4></h4>
264 <ul>
265
266 </ul>
267 </div>
268 <div class="col-lg-3 col-md-6 footer-links">
269 <h4></h4>
270 <ul>
271
272 </ul>
273 </div>
274
275 <div class="col-lg-3 col-md-6 footer-links">
276 <h4>Our Social Networks</h4>
277
278 <div class="social-links mt-3">
279 <a href="https://www.linkedin.com/in/hariprabu741/" class="linkedin"><i class="bx bxl-linkedin"></i></a>
280 <a href="#" class="twitter"><i class="bx bxl-twitter"></i></a>

Ln 132, Col 59 Spaces: 2 UTF-8 CRLF HTML 10:02 17-04-2023
```

```
File Edit Selection View Go Run Terminal Help sakthi.html - Visual Studio Code
C:\Users\KATHIR\Desktop> analysis crash > @analysis > Airplane crash analysis > sakthi.html > html > body > main#main > section#cta.cta > div.container > div.row > div.col-lg-9.text-center.te

309 <!-- Vendor JS Files -->
310 <script src="assets/vendor/aos/aos.js"></script>
311 <script src="assets/vendor/bootstrap/js/bootstrap.bundle.min.js"></script>
312 <script src="assets/vendor/glightbox/js/glightbox.min.js"></script>
313 <script src="assets/vendor/isotope-layout/isotope.pkgd.min.js"></script>
314 <script src="assets/vendor/swiper/swiper-bundle.min.js"></script>
315 <script src="assets/vendor/waypoints/noframework.waypoints.js"></script>
316 <script src="assets/vendor/php-email-form/validate.js"></script>
317
318 <!-- Template Main JS File -->
319 <script src="assets/js/main.js"></script>
320
321 </body>
322
323 </html>
324
325

Ln 132, Col 59 Spaces: 2 UTF-8 CRLF HTML 10:03 17-04-2023
```

- ❖ This is the HTML code we used to build our web integration. We downloaded it from the bootstrap file.