**\*Designate Person To display Slideshow\***

**Speaker 1:**

**Opening Slide - Tornados: A Force of Nature**

**Slide 2: Team members Introduction**

**Slide 3 : What is a Tornado?**

A tornado is a powerful and destructive weather phenomenon that occurs when there is a collision between strong winds and thunderstorms . It is a violently swirling column of air reaching from a thunderstorm to the ground. Although it is just simply air which normally can not be seen, we process of what a tornado is through the condensation funnel of water droplets, dust, and debris.

The collision of warm, moist air and cold, dry air causes tornadoes. When these two air masses meet, they create an area of low pressure, as the warm air rises through the colder air, which can cause the air to start spinning. As the rotating updraft draws in more warm air from the thunderstorm, its rotation speed increases. This spinning air turns into a tornado when it comes into contact with the ground.

**Slide 4: Tornados in the USA: Our What and Why**

Our objective was to analyze and graph tornado data in the USA. We believed it was important to identify the areas most prone to tornadoes and understand their impact on communities. The results will be visually displayed to raise awareness and promote informed decision-making.

**Speaker 2:**

Thanks Gavin,

**Slide 5:** I will now talk about the thought process for our project which was to tell the user a story using our dashboard that visually shows key information about tornadoes to help them make an informed decision. We started with the Data to find out what data points are important to our data story. We extracted the WHERE, WHEN, WHAT, and HOW. We divided the Dashboard into 3 easy and intuitive sections. Chart, Map and Distribution with hyperlinks. Ultimately we wanted to get across the message that the data was telling us. That Tornadoes seem to be increasing in frequency in the US according to the data, they seem to be concentrated in certain areas of the US for planning purposes and point out the times and places they occur the most often. The project was literally a brick by brick process of trying to think of the best way to present data in a meaningful way to the user even considering Web Content Accessibility Guidelines (WCAG) 2.1 standards.

**Slide 6: Displays our EF Scale**

We have a Drop Down Bar to select desired year or cycle through them with your keyboard.

The HTML, D3 and JS code for the Tornado Dashboard visualizes tornado data from 1950 to 2021 in the United States. The Dashboard displays the total number of tornadoes, fatalities, and injuries that occurred for a selected year or period, along with a bar graph that shows the magnitude of the Tornadoes over time.

- JavaScript code that uses the Plotly library to create an interactive bar chart showing the number of tornado events by magnitude in the United States with respect to years. The code defines several functions that are used to filter, group, and format the data, as well as to create and update the plot and interactive legend. Click the legend to further explore the data.

Now Pryia, will talk about the Map, The Top 10 States Chart and Calendar Cards. Take it away Pryia.

**Speaker 3:**

**Slide 7: Displays our plotted map visual**

In the second visual we have plotted tornado information that has occurred in We have all this information starting from the 1950’s all the way to 2021. You will be able to see where the majority of the tornados take place as you scroll the various years. Each Tornado point can be clicked to view which state, the EF Scale level of magnitude, the length and the width of the tornados. We found this visual the best representation of where the cluster of tornados occur.

**Slide 8: Displays our Charting Distribution of States and Month**

We took it a step further in our third visual to gather a more accurate breakdown. Here we were able to list the top 10 states that experienced the most Tornados for every year, and you will be able to see exactly the frequency as you hover over the orange bars. In the bottom portion we have created a monthly distribution graph to demonstrate which experience the most amount of tornados.

**Speaker 4:**

**Slide 9: Limitations**

As data analyst students we encountered limitations and challenges in completing this project.

One of the challenges being understanding how the various components, tools, programs can be brought and linked together to create a dashboard.

We also had to undergo a few discussions on how to approach and tackle the various requirements and components to building it piece by piece.   
  
Because tornados have been around for a long time, our data set was between 1950-2021, we had to decide if we wanted to break down this data to make a smaller representation such as only one decade, multiple decades or the entirety of the dataset. We had to figure out how 55, 000 sets of data points might not take a away from the story we are trying to illustrate, because otherwise it would look like one giant cluster.

**Slide 10: Conclusion & Real Life Connection**

With the information we have gathered and graphed through means of our dashboard, with a high degree of certainty we can say that the majority of tornados that occur take place in the Southern part of Central United States. Through the completion of this project, we were able to attain the knowledge that the months that experienced the most amount of tornados in Central United States was between April-June, with Texas being the State which had the most occurrence.   
  
For you and I, this information can help us in the real world as time of going on vacation or even buying property.   
  
This can be translated into big picture concepts such as Public Safety and Emergency Response in catastrophic events. Urban planning, in terms of how to minimize losses when a tornado strikes, with also other factors such as agricultural impacts, risk management and pollution effects.

**Slide 11: Questions**