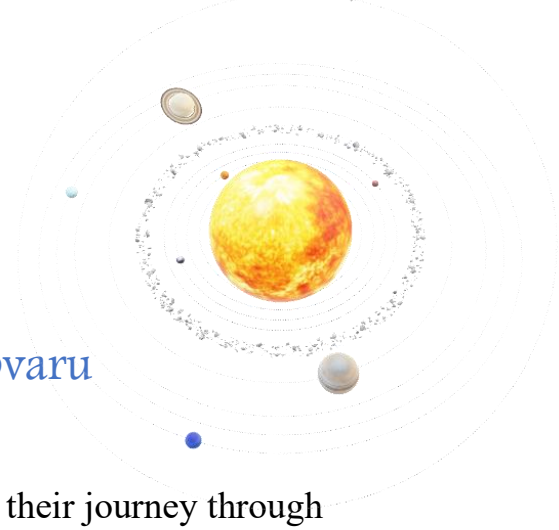

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DATA VISUALIZATION PROJECT I

Presented by:
Esmeralda Quenum and Vimbainashe Mabvaru
Coach: Ashley Pattammady

Meteorites are extraterrestrial objects that survive their journey through Earth's atmosphere to reach the planet's surface. These fragments originate from asteroids, comets, or other celestial bodies in space. Meteorites provide valuable insights into the composition of the early solar system and the processes that shaped celestial bodies. They come in various types, each offering unique scientific significance. The purpose of our data visualization project was to comprehensively analyze the meteorite characteristics that have landed on Earth over time and the geolocation of their founding. Through meticulous data collection from the meteorite Landings dataset of The Meteoritical Society on NASA, we were able to get an insightful perspective on the mass, localization, counts and found / fell pattern associated with meteorite landings.

Data Collection:

Our data was sourced from The Meteoritical Society on NASA's Open Data Portal, ensuring accuracy and reliability. It included information on meteorites that both fell or were found, detailing their locations by Latitude and Longitude, mass, and count by year. Due to the high number of meteorites founds, and with our goal to make it understandable to a target completely new to this, we decided to not include null values and to narrow down our data year scale for the best visualization possible.

Visualization Techniques:

We employed diverse visualization techniques to convey nuanced information effectively. The Data we had was straightforward to be honest. We first wrote down the possibilities of information we could take from the data we had. We were giving names and measures, all we had to do was plugged in to get a graph. At least that is what we taught haha! The challenge came from working with tableau. It was the first time both of us encountered the software and we were just telling each other, "We just have to play around with it," and eventually, it worked. We were provided with video from our coach Ashely and did some research on our own about how to use it. In the end it was really like a game. The more we explored and plugged in data, the more understanding we started to have of the

software. Honesty, it felt great when we finally mastered it. Now it was time to work on our own to make the dashboard.

Esmeralda's Dashboard

I ended up with those graphs:

1. **Geo localization Chart Mapping of Meteorite Landings Worldwide between 1950 and 2020**

To present the spatial distribution of meteorite incidents. Latitude and longitude coordinates were mapped to highlight precisely where meteorites fell or were found. I colored fell as blue and found as orange to mark the difference. This allowed for a visual exploration of the landing of meteorite. I noticed a higher meteorite activity in the United States precisely at the New Mexico and Texas border. I also included the mass of the meteorite with their respective names. What really surprised me is that some meteorites weighed 9,500,000 in mass which is incredible.

2. **Data Visualization Illustrating the Meteorite landings count between 1950 and 2020.**

A line chart depicted the annual count of meteorite incidents from 1950 to 2020. This visualization provided insights into identifying periods of increased or decreased activity. I noticed that before 1974 we had less than 80 counts but after that period the count increased significantly. In fact, in 2003 we recorded the highest count of 3323 meteorites. I wondered what happened in that year and came to the hypothesis that the advances in technology, particularly in astronomical observation might have contributed to a higher detection rate at that period.

3. **Side-by-Side Bars Graph - Fell vs. Found:**

The side-by-side bars graph eased a comparative analysis of meteorites that fell versus those that were found each year. This visualization allowed proportion from observed falls versus those discovered later. The number of falls was low compared to those discovered.

Vimbainashe's Dashboard

1. **Meteorite Landings around The World**

The map showed where meteorites have fallen over the years and how much they weigh. The bigger and darker the “bubble” appears, the heavier and bigger the meteorite is. It was also remarkably interesting to see which meteorites were the heaviest. Xifu, which landed in North America and Al Hagggouria, which landed in Southeast Asia were the heaviest at three million grams.

2. **Names and Mass (g) of meteorites fell from 2000 to 2013**.

This bar graph highlighted some of the meteorites that have fallen between the years 2000 and 2013. The heaviest meteorites had a mass of 3 million grams (about the weight of an elephant).

3. **Count of Meteorites between 2000 and 2013**

The analysis done on the number of meteorites that have landed on earth over the last 20 years and saw that the numbers have decreased since the highest value of 3000 meteorites found in 2003, and even more so from 2006 onwards, reaching a minimum value of about 200 in 2012.

Conclusion

Overall, we really enjoyed working on this project. It was an enjoyable experience to learn mor about meteorites and how abundant and unique they are. We have developed a newfound appreciation for the art of data storytelling working with tableau. We are profoundly grateful for all the advice and guidance we received from our coach Ashley Pattammady.

Esmeralda’s Dashboard-
https://public.tableau.com/app/profile/esmeralda.quenum/viz/shared/5QGX525QC

Vimbainashe’s Dashboard-
https://public.tableau.com/app/profile/vimbainashe.marrian.mabvaru/viz/AnanalysisofMeteoritelandingsbetween2000and2013/Dashboard1?publish=yes