Unveiling the Mysteries of Meteorite Landings: A Data-Driven Exploration

Our project ignited with a shared fascination for meteorites, those celestial visitors offering a glimpse into our solar system's past. We embarked on this adventure armed with a comprehensive dataset (34,513 entries!) compiled by The Meteoritical Society. Each entry held a treasure trove of information: names, IDs, classifications, masses, fall status, landing years, and even geographical coordinates. Cleaning and processing this vast dataset using programming languages was crucial to ensure consistency for accurate analysis.

Data visualization tools like Tableau became our compass, guiding us through the exploration. We crafted a captivating world map, each dot representing a meteorite's landing site based on its latitude and longitude. This map unveiled hotspots of meteorite activity, sparking intriguing questions. Could these hotspots align with specific geological features or perhaps hint at the origins of larger celestial bodies shattering in the cosmos?

Next, we delved into the fascinating world of meteorite classifications. A bar chart revealed the most common types found on Earth, and we explored their unique characteristics. Understanding these classifications offered clues about the parent bodies these meteorites originated from. We further investigated the relationship between a meteorite's mass and its classification using a scatter plot. Did specific types tend to be larger or smaller? This analysis provided insights into the composition and formation processes of different meteorites.

Temporal patterns also piqued our curiosity. A line chart depicted the number of documented meteorites falls across different years. By analyzing these trends, we identified

periods of increased activity. Could these spikes be linked to specific meteor showers or the breakup of larger asteroids?

The data also revealed a valuable distinction: "observed fall" versus "discovered." Observed falls indicated the meteorite's descent was witnessed or heard, and the meteorite was recovered shortly after. Discovered meteorites were found without prior observation. This distinction highlighted potential biases in the data, as observed falls are likely more frequent than discoveries, especially in earlier periods.

Furthermore, the year of landing allowed us to construct a timeline, visualizing the evolution of documented meteorite falls. This analysis revealed how the documentation and discovery process has changed over time. Perhaps advancements in technology or increased public awareness played a role.

However, our project wasn't without its challenges. Data cleaning, troubleshooting technical visualization issues, and collaboration across time zones demanded teamwork and online research. Finding reliable data proved to be more difficult than anticipated. In hindsight, a topic with more readily available data would have been a smoother path. While our initial goal was to explore a unique topic, it presented unforeseen obstacles.

Uneven data access created a significant hurdle. While some team members successfully extracted information, others faced difficulties. This disparity hindered progress and caused frustration. Scheduling meetings across time zones presented another challenge, and communication wasn't always smooth. However, we persevere and overcome these challenges through open communication and collaborative research.

Despite a communication breakdown that delayed merging individual contributions until the very end, we persevered. Additionally, juggling summer classes added another layer of complexity. Initially, our group meetings were productive, and we were enthusiastic about our chosen topic. However, maintaining consistent meetings proved difficult. We created a WhatsApp group chat but struggled to find a time that worked for everyone to collaborate effectively.

Despite these challenges, we found alternative solutions. The lack of data led us to incorporate compelling visuals, interesting facts, and figures to bolster our project. We learned valuable lessons about data availability, communication, and time management.

In conclusion, our project demonstrated the importance of readily available data for successful project execution. By leveraging data analytics and visualization tools, we gained valuable insights into meteorite landings. While unexpected challenges arose, we learned the power of teamwork and perseverance in overcoming adversity. We hope our project serves as an inspiration for future research and analysis in this captivating field.