Final Project Report - Summarizing the Project

The Subject-Matter/Industry:

* The European Space Agency Database and Information System Characterizing Objects in Space https://discosweb.esoc.esa.int/
* The Center for Orbital and Reentry Debris Studies CORDS Reentry Database. https://aerospace.org/reentries

Three Questions

1. What is the average Mass of the objects in orbit?
2. What Object Class has the most entities?
3. What objects have the largest and smallest mass?

Datasets selected - what are their sources, what are they? Why are they important?

* The European Space Agency Database and Information System Characterizing Objects in Space <https://discosweb.esoc.esa.int/>
  + This is the European Space Agency’s DISCOS database. It is built to be a single-source reference for over 40000 objects in orbit of earth.
  + This data set is important because it is used to track all objects in orbit of earth. This data is primarily used by satellite manufacturers in collision avoidance systems.
* The Center for Orbital and Reentry Debris Studies CORDS Reentry Database. <https://aerospace.org/reentries>
  + This dataset is used to document objects and payloads that have reentered earth’s atmosphere since 2000
  + This dataset I sued to would be used to supplement data from my primary dataset
  + One of the issues with have thousands of entries in orbit is the potential for reentering earths atmosphere and not burning up on reentry.

Tools Used

1. Pandas
   1. Used to manipulate the data and parse through it. Making it usable for graphs and diagrams and answering question
2. Requests
   1. Used to pull and filter the data being requested via an API
3. matplotlib.pyplot
   1. Used to make visualizations of the data stored in pandas
   2. I used it to make a couple bar graphs and view a histogram
4. Seaborn
   1. Used to make a histogram
5. Pprint
   1. This is used to make reading json in a terminal understandable.

How do you expect that the answers that can be found in your BI Dashboard can further influence your selected Subject-Matter/Industry?

I asked simple questions that I feel like help to generalize the dataset. I asked what the average mass is of objects in orbit. I also asked what are the largest and smallest objects in orbit by mass. These two questions when paired together help to someone to understand the overall size of the objects in orbit but also the wide range of objects. The average mass is 2703.05grams and the largest object is 132931.0 grams and the smallest is 0.284. This is a very large distribution of data but since the average is closer to the smaller object rather then the large it shows most objects tend to have a smaller mass. I wanted to also understand the types of objects in orbit. This is why I asked what object class has the most entities. The answer was payloads at 1539. I also showed a bar graph to help understand the data. The next closes object is rocket bodies at almost half payload.

I think asking simple questions is great for complex and massive datasets. We need to be able to generalize, explain, and visualize data so we can ask better and more complex questions.