

Evaluation of Exoplanets Data Visualization

Data

I chose to visualize data collected for confirmed exoplanets. The data I pulled from [kaggle](#) contains a row for each planet and numerous fields containing properties that describe them. For my purposes, I utilized their masses, radii, orbital periods, orbital radii, and host star names.

Approaches

I began with a radial plot because that is how we typically visualize our own solar system. I chose a parallel coordinates plot as my second visualization because I was unaware of this data visualization technique prior to this course and find it to be a very interesting and effective way of visualizing a potentially limitless number of properties simultaneously.

I chose to use sliders because they are an efficient and intuitive way to filter data that I had not considered prior to your recommendation. I was also excited to build them from scratch once I realized that Processing does not have any built in.

The use of buttons seemed the most natural way to switch between plots/'modes' and to reset the slider values. And again, I enjoyed implementing my own custom buttons, which I believe I built in a decently object oriented fashion that should allow me to use them for other projects in the future (same for the sliders!).

Clicking a planet to view a solar system seemed like a nifty little addition, although I admit it is more of a hidden feature, as I did not include any method of informing the user of this functionality (perhaps I should have added a tooltip popup by the mouse when hovering over a planet?).

Evaluation

Utility

I believe my visualization could be very useful to astronomers, although I am sure numerous programs with similar and/or much greater functionality already exist. Nevertheless, it seems to be a valid foundation for a professional astronomy tool, as it clearly demonstrates [Kepler's third law of planetary motion](#).

Ideas for further development include functionality to support altering the number of axes in the parallel coordinates plot and what properties they display, changing the units in which values are plotted/displayed, making the horizontal sliders ranged, incorporating detection type and elemental composition, and, of course, including more types of plots.

Aesthetics

I believe my visualization excels aesthetically. All components are framed, bounded, and spaced well. All text is informative and readable. All values are presented with units. Colors do not clash and are not abrasive. The plots present data in a manner that is understandable and never confusing. Data points are distinguishable from one another. Component locations and functionality are consistent throughout.

The only thing I would consider aesthetically questionable is the location of the "planets in range" text on the radial plot.