Planet Project Documentation - by Emily Thomas

The goal of this project was to make a way for a user to change attributes about a planet. The attributes change the habitability which is then reflected to the user in the bottom left with notes about why it is or is not habitable. Supposed to be more for something like a video game, so facts may not be entirely realistic. I am classifying habitability on whether a human could live on that planet.

--Project Description—

This project is defined by changing attributes about a planet and its surrounding sun (If there is one).

There are four attributes that you can change: Atmosphere, Amount of Water, Type of terrain/ defining ground feature, and distance from a sun/ no sun.

The options for Atmosphere are no atmosphere, has an atmosphere, and has a poisonous atmosphere (Like Venus).

The options for Water are no water, some water, half the planet is composed of water, and the planet is covered in majority water.

The options for Terrain are Normal (Rock/Solid ground), Gaseous (Like Jupiter), and Lava (A newly forming planet/ an overly active volcanic planet (Kind of like Jupiter's moon Io).

The options for Sun are SafeDistance (Like a distance equivalent of the Earth from our Sun), no sun, a far sun, and a close sun.

Every time you change some attribute about the planet it has a chance of changing the habitability of said planet.

Different combination produces different kinds of planet with different environments. For example, a planet produced with an atmosphere, majority water, and a close sun will create something like Earth's early conditions, with majority of life being in the ocean, this planet would be hot. A planet like this would be classified as uninhabitable.

Every option can produce something new. Descriptions are given at the bottom of the page about the habitability of each planet and some reasons why it may or may not be habitable.

A planet with no atmosphere will always be uninhabitable.

A planet with a poisonous atmosphere will always be uninhabitable.

A gaseous planet will always be uninhabitable.

A lava planet will always be uninhabitable.

A planet with no sun will always be uninhabitable.

A planet with a close sun will always be uninhabitable.

Changing the distance of the sun will affect the temperature of a planet which will affect its habitability. In my program I reflect the distance of the sun with the intensity of a point light. A planet with a close sun will appear much brighter than a planet with a safe distance sun or a far distance sun.

--Running the Program--

All the assets for the planet are contained within the folder. To use my program, you simple just change the attributes of the planet. You can do this by using the gui in the top right corner. All the attributes have a drop down to pick your options. Each choice changes something about the planet (or not if it is too similar conditions). The description for its habitability can be found in the bottom left. It changes as you change the attributes. Needs to be hosted or run locally due to assests.