CP411: Final Project

Amardeep Sarang - 160112080
WILFRID LAURIER UNIVERSITY

Instructions:

To run:

1. Make sure you have a webgl enabled browser.
2. Keep all files in the same structure they where in when they were downloaded.
3. Click “solar.html” to run the program.
4. Use controls mentioned blow to navigate the application.

Controls and gui:

Arrow keys: Use up and down arrow keys to move forward and back in the solar system. Use left and right arrow keys to pan left and right.

W/S keys: Use W/S keys to pan up and down in the solar system.

E, D, and R keys: Use E and D keys angle the camera in the Y axis. Use R to reset the angle to 0.

Time speed: Use this to increase and decrease the time scale which will allow you to observe the orbit and spin of the planets. By default (speed 1) 1 hour will pass approximately every second.

Distance scale: The distance between planets in the model is approximately to scale. To scale down the distance between the planets use this slider.

Move speed: This slider can be used to adjust to movement speed of the camera.

Ambient light: This slider can be used to adjust the amount of ambient light. This can be used to light up the dark side of the planet if this value is 0 then the only light will be the point light from the sun.

Orbit toggle: This button will toggle the orbit lines that appear on the model.

View: Select a plant from the drop-down menu to lock to camera to the planet. When the camera is locked to a planet a summary of the planet will be shown. To unlock the camera choose “solar system” from the menu or click the screen and press any key to unlock the camera.

Credits:

Libraries used:

- Three.js: https://threejs.org/
- dat.gui

Textures:

- Textures for planets and background stars sourced from: https://www.solarsystemscope.com/textures/

- Textures for Saturn's rings from: https://www.deviantart.com/alpha-element/art/Saturn-s-Rings-Stock-Image-297798529 by user Alpha-element

Planet information:

- Planet summary sourced from NASA Spaceplace: https://spaceplace.nasa.gov/
- Addition planet information regarding to size, orbit, and spin sourced from: https://www.wikipedia.org/