GRAPHIX MP DOCUMENTATION

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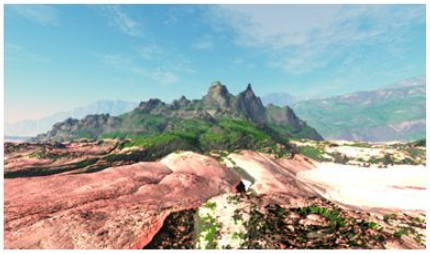
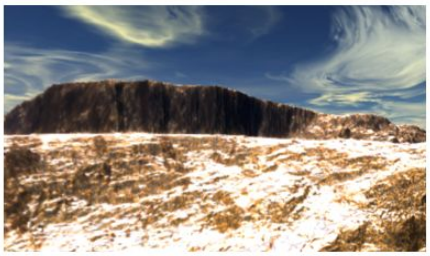
APRIL 20, 2018





I. PROJECT DESCRIPTION

Our project is called *Explorer* and it features the Solar System with emphasis on the sun and 9 different planets namely Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto. This project was inspired by our childhood dreams of becoming astronauts and the wish to reach the beautiful celestial bodies spread throughout the cosmos. We had hoped that this project will help us fulfill that youthful dream somehow.

It shows a visualization of the planets as they rotate and revolve around the sun. It also shows how the light from the sun affects the planets. Moreover, clicking on a planet will show you a 360 degree visualization of the planet's surface.

II. CONCEPTS YOU APPLIED

In our project, we made use of multiple sphere geometries to represent the different elements. The spheres have its own sizes and rotation values Along with this, the textures of these elements are of lambert mesh material. The spheres are rotating and revolving in its own orbit around the sun. In doing so, we used a separate javascript file to facilitate the orbit of the planets. We also incorporated an onclick listener function to redirect the user to the skybox once an element is clicked. In accomplishing this, the concept of raycasting was used. For the skybox, sets of images were mapped to a cube to allow it to have a different material for each face. Furthermore, directional light and spot light were used to light the cube. We also incorporated a torus geometry for the ring of Saturn as well as a spotlight for our light source.

III. RESOURCES THAT YOU BORROWED FROM THE PUBLIC DOMAIN

The javascript framework (Three.js) used to implement the project was taken from the website: threejs.org

All textures used in this project are from the website: solarsystemscope.com

The background image used in this project is from the website: solarsystemscope.com

The different skybox models used in this project are from the website: custommapmakers.org

The code used to implement the skybox feature was taken from the repository: github.com/SonarSystems/three.js-Crash-Course and was modified to suit the requirements set by the project

IV. REFERENCES

Skyboxes for download. *Custommapmakers.org*. Retrieved 19 April 2018, from http://www.custommapmakers.org/skyboxes.php

Solar System Scope. *Solar System Scope*. Retrieved 19 April 2018, from https://www.solarsystemscope.com/textures/

SonarSystems/three.js-Crash-Course. (2016). *GitHub*. Retrieved 19 April 2018, from https://github.com/SonarSystems/three.js-Crash-Course

three.js - Javascript 3D library. *Threejs.org*. Retrieved 19 April 2018, from https://threejs.org/