Alexandria University
Faculty of Engineering
Computer and Systems Engineering Department

CS 422 Computer Graphics
Assigned: Monday, 17/04/2023
Due: Tuesday, 23/05/2023

Course Project (Solar System Simulation)

Objectives

Apply the knowlegde acquired through the course to simulate Solar system.

Problem Statement

You are required to implement an application that simulate the solar system. Also, you should enable user from controlling space-craft to explore the solar system. You are required to use two view ports: One for space-craft and the other for the whole solar system (See figure 1 for more declaration).

In simulation you need to handle:

- Instantiation of Sun and 8 planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune)
- Solar system animation (spinning and rotation of planets around Sun and Moon around Earth)
- Space-craft movement.
- Lighting and emission.

You are free to choose the proper implementation of:

- Planet sizes (make sure it is sensible)
- Planet colors or (**textures**) (make sure it is sensible)
- Mouse and keyboard interaction (make sure it gives good user experience)

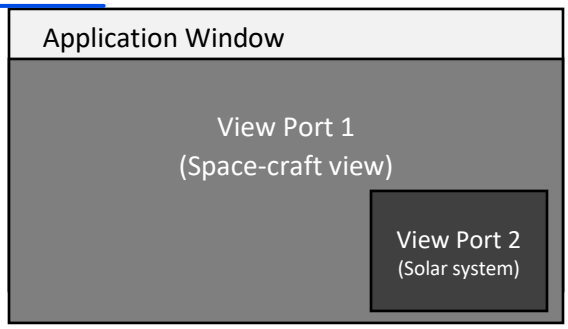

Figure 1: Application View Ports Structure

You can use code in lighting, space craft, animation as reference.

Delivery Policy

- You should submit a report describing your code flow, screenshots of sample run and challenges you faced (if any).
- You should submit the project source code (.cpp file(s)).
- You should cite any additional resources you used.
- Further details for the submission instructions will be posted later on MS Teams.

Good Luck