Computer Graphics 2019-2020

Due Date: Monday, 23rd March 2020 by 9.30am

Assignment 2: Load 3D objects and move in the 3D space

Follow the instructions carefully. If you encounter any problems in this assignment, please do not hesitate to contact me as soon as possible.

Description and Requirements

In this assignment, you will learn how to load 3D objects and move in a 3D world. By now you should be familiarized with the OpenGL API / Unity / Unreal… or the engine of your choice.

This assignment has 2 parts:

1. Loading 3D objects: you need to create at least 2 objects in Maya or similar animation package. You then need to export the .OBJ files. Next you need to implement an algorithm that loads the 3D objects (OBJ file) into your OpenGL/Unity/Unreal/Maya 3D scene. (2 pts)

2. Moving in the 3D world: you need to implement a 3rd person and a 1st person camera in your OpenGL/Unity/Unreal/Maya 3D world. You should be able to manipulate the cameras using the keyboard. Optional you can implement using the mouth. (1 pts)

3. Dynamic cameras: you are encourage to take your learning one step further and implement several cameras on the scene and apply a transition between cameras to simulate dynamic cameras. (1 pts)

Deliver

Upload the assignment Part_1 and Part_2 inside the google drive folder inside Assignments/yourID/Part_1 and Assignments/yourID/Part_1. You will need to create the folders Part_1 and Part_2

Grading

This assignment will be graded on the following requirements

1. Understanding the structure of an OBJ file.
2. Writing an algorithm that allows loading at least 2 OBJ files into a 3D scene.
3. Rendering the 3D objects in the screen.
4. Implementing a 1st person and 3rd person camera that allows you to move around a 3D world
5. Implementing dynamic cameras.

Grading will be defined based on the following rubric

4 – Meets all the requirement.

3 – Loading 3D Objects and moving in 3D world is complete, working and compiles correctly

2 – Some of the requirements are implemented, complete and compile correctly

1 – Algorithms are implemented but not compiling

0 – Nothing is implemented and does not compiles