

Computer Graphics (COMP3271) Programming

Assignment 2:

3D Modeling and Interface Design

Due date: 23:59 Nov 04th, 2022

General Description

In this programming assignment you are required to implement part of 3D objects modeler with functions like mouse controlled model editing.

Requirements

In order to make this assignment simple, only implementation of mouse interaction control is required. You should implement a few event handlers to handle model transformation (rotation, translation and extrusion). You also need to draw something to visualization the world space.

Template

A project template is prepared for you to help you focus on the interface design.

Functions of the template include:

- Simple 3D primitive rendering
- Face subdivision
- Navigate control mode by switching number keys (1: rotation, 2: translation, 3: face subdivision, 4: extrusion)
- Viewpoint rotation / view scaling

Implementation

There are two functions need to be implemented, both of them are in "MainFrame.cpp".

void LeftMouseMove(float start_x, float start_y, float curr_x, float curr_y);

This function is called by the template whenever the mouse is moved. (start_/curr_)x and (start_/curr_)y are the screen coordinate of the mouse position.

void VisualizeWorldSpace();

This function is called by the template in DrawScene. You can draw anything that can visualize the world space.

You can refer to the tutorial slides for more details.

Necessary comments to explain your code is required.