

COMPUTER GRAPHICS

Assignment-2 Readme File

Running the Assignment 2 Application

For running the application, you need to serve the static files using any server.

- Using Visual Studio Code:

- If you are using VS Code, open the 'source_code' folder using VS code.
- Then, you can simply use the 'live server' plugin.
[<https://www.freecodecamp.org/news/vscode-live-server-auto-refresh-browser/>]
- Click on 'Go live'.
- It will host the application on a port and open it on the browser.

- Using Python (from linux terminal):

- Ensure that python is installed. If not, first install python.
- Navigate to 'source_code' folder using 'cd' command.
- If using python3, run following command to host a local server.

```
python3 -m http.server
```

- If using python 2, run following command to host a local server.

```
python -m SimpleHTTPServer
```

- By default, this will run the contents of the directory on a local web server, on port 8000. You can go to this server by going to the URL localhost: 8000 in your web browser or directly click the link provided in the terminal.

Using the Assignment 2 Application

Controls for different Camera Modes:-

Camera Mode 0 (Top View) :

Camera is looking along the z-axis at the x-y plane of the scene.

Key and Mouse Controls :

Normal Mode:-

Switching Camera Mode

‘c’ key : Switch to ‘Camera Mode 1’

Selection of Object

Left Mouse click on object: Selects object and highlights it with black colour

Deselection of Object

Left Mouse click (anywhere else than object) : Deselects the object.

Object Rotations [for selected object] (about world axes and centroid)

‘X’ key : Increase rotation about x axis

‘x’ key : Decrease rotation about x axis

‘Y’ key : Increase rotation about y axis

‘y’ key : Decrease rotation about y axis

‘Z’ key : Increase rotation about z axis

‘z’ key : Decrease rotation about z axis

Object Scaling [for selected object]

‘Right arrow’ key : Scale up the object

‘Left arrow’ key: *Scale down the object*

Switch to Animation Mode [for selected object]

‘a’ key: Switch to animation mode for selected object

Animation Mode [for selected object]:-

Switching Camera Mode

‘c’ key : Switch to ‘Camera Mode 1’

Selecting Points p1 and p2 for animation [when object is not animating]

Left Mouse click :

If p1 is not selected: Selects p1

If p1 is selected but p2 is not selected: Selects p2

Object Speed Control [for animating object]

‘Up arrow’ key: Speeds up the object

‘Down arrow key’: Speeds down the object

Camera Mode 1 (3D View) :

Camera looking at the origin of the scene from any direction.

Key and Mouse Controls :

Switching Camera Mode

‘c’ key : Switch to ‘Camera Mode 0’

Reset to initial view

‘r’ key : Reset to initial view

Selecting axes for Camera Rotation [world axis through origin]

‘1’ key: Select x axis

‘2’ key: Select y axis

‘3’ key: Select z axis

Rotating Camera (about selected world axis and origin)

Mouse drag right: Increase rotation

Mouse drag left: Decrease rotation

Rotating Object (about world axes and centroid)

[Given that object is selected in Top View Mode and no animation mode]

‘X’ key : Increase rotation about x axis

‘x’ key : Decrease rotation about x axis

‘Y’ key : Increase rotation about y axis

‘y’ key : Decrease rotation about y axis

‘Z’ key : Increase rotation about z axis

‘z’ key : Decrease rotation about z axis

Object Scaling

[Given that object is selected in Top View Mode and no animation mode]

‘Right arrow’ key : Scale up the object

‘Left arrow’ key: Scale down the object