

## Computer Graphics 2020 – Build and Operating Instructions

Project can be built using either *make* or *make speedy* (preferred).

To perform animations, press the '**a**' key. A different animation will be performed for Rasteriser and Raytracer.

The automatic animation renderer has been turned off, so running animations will not save any frames to the local directory

Pressing the following keys will execute the following:

- '**a**' - Perform animations. A different animation will be performed for Rasteriser and Raytracer
- '**o**' – Turns **Orbit Mode** on and off
- '**z**' – Moves camera along the Global Z axis in the negative
- '**x**' – Moves camera along the Global Z axis in the positive
- '**r**' – Renders the current frame to PPM file
- '**c**' – Clears the screen
- **Left Arrow Key** – Moves the camera along the Global X axis in the positive
- **Right Arrow Key** – Moves the camera along the Global X axis in the negative
- **Up Arrow Key** – Moves the camera along the Global Y axis in the positive
- **Down Arrow Key** – Moves the camera along the Global Y axis in the negative

Pressing the following numbers on the **top number row** will execute the following:

- **2** – will do a wireframe render
- **3** – will do a filled rasterised render
- **4** – will do the ray traced render

Pressing the following on the **number pad** will execute the following:

- If **Orbit Mode** is **off** (default):
  - **NumPad 4** – Rotates the camera in situ about the Global Y axis in the positive
  - **NumPad 6** – Rotates the camera in situ about the Global Y axis in the negative
  - **NumPad 2** – Rotates the camera in situ about the Global X axis in the positive
  - **NumPad 8** – Rotates the camera in situ about the Global X axis in the negative
- If **Orbit Mode** is **on**:
  - **NumPad 4** – Rotates the camera about the object in the Global Y axis in the positive
  - **NumPad 6** – Rotates the camera about the object in the Global Y axis in the negative
  - **NumPad 2** – Rotates the camera about the object in the Global X axis in the positive

- **NumPad 8** – Rotates the camera about the object in the Global X axis in the negative

After an animation is run for the rasteriser, the program will need to be re started in order to reset the object to within view