# Computer Graphics Lab 4

## Mesh

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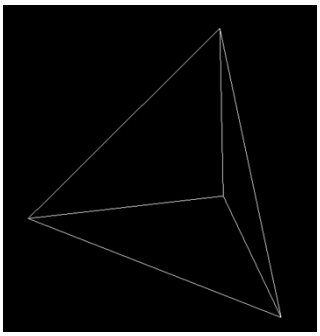
1. Downlaod and run program and answer the following question:
   https://drive.google.com/drive/folders/1KmOK9YcRR27tZEFXt8NkWj6D6ei85pfB?usp=sharing
   (main.py, Cube.py amd Mesh.py)
   Show the result of the program
   Explain how the Cube class uses the Mesh class to render the cube in OpenGL. Specifically:
   1.1 How does the Cube class define the vertices and triangles for a 3D cube?
   1.2 What is the role of the super().__init__() call in the Cube class?

2. **Tetrahedron Geometry (a triangular pyramid with 4 faces)** :
   - Define a 3D tetrahedron with 4 vertices and 4 triangular faces.
   - Use appropriate coordinates to ensure the tetrahedron is centered at the origin and fits within a unit cube.

   Transformations via Key Presses:
   2.1 Translation:
   - Press Arrow Keys to move the tetrahedron along the X and Y axes:
     - Up/Down Arrow: Translate along the Y-axis.
     - Left/Right Arrow: Translate along the X-axis.
   - Press Page Up/Down to move the tetrahedron along the Z-axis.

   2.2 Scaling:
   - Press + to scale the tetrahedron up.
   - Press - to scale the tetrahedron down.
   - Prevent scaling below a minimum size.

   2.3 Rotation:
   - Press W/S to rotate along the X-axis.
   - Press A/D to rotate along the Y-axis.
   - Press Q/E to rotate along the Z-axis.
   - Ensure smooth, incremental rotation.

   Show the result of the program

3. Modify main from no. 1 to using LoadMesh.py
   3.1 Load “cube.obj” and run
   3.2 Load “donut.obj” and run
   3.3 Load “granny.obj” and run