

TAGE

Manual Objects - INDEXED

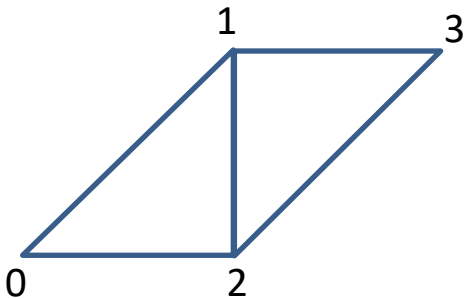
```

...
public class MyGame extends VariableFrameRateGame
{
    ...
    private GameObject rom, sph;
    private ObjShape romS, sphS;
    private TextureImage earth, brick;
    ...

    @Override
    public void loadShapes()
    {
        romS = new ManualRhombus();
        sphS = new Sphere();
    }
    ...

    @Override
    public void buildObjects()
    {
        ...
        // build pyramid at center
        rom = new GameObject(GameObject.root(), romS, brick);
        initialTranslation = (new Matrix4f()).translation(0,0,0);
        rom.setLocalTranslation(initialTranslation);
        rom.getRenderStates().hasLighting(true);
        ...
    }
}

```



ManualRhombus.java

```

package myGame;

import tage.*;
import tage.shapes.*;
import org.joml.*;

public class ManualRhombus extends ManualObject
{
    // indexed ObjShape definitions in TAGE must be defined as Vector3f/2f
    // the indexes themselves are stored in an int array

    private Vector3f[] vertices = new Vector3f[4];
    private Vector2f[] texcoords = new Vector2f[4];
    private Vector3f[] normals = new Vector3f[4];
    private int[] indices = new int[]
    {
        0, 1, 2,
        1, 2, 3
    };

    public ManualRhombus()
    {
        super();

        vertices[0] = (new Vector3f()).set(-1.0f, -1.0f, 0.0f);
        vertices[1] = (new Vector3f()).set(0.0f, 1.0f, 0.0f);
        vertices[2] = (new Vector3f()).set(0.0f, -1.0f, 0.0f);
        vertices[3] = (new Vector3f()).set(1.0f, 1.0f, 0.0f);

        texcoords[0] = (new Vector2f()).set(0f, 0f);
        texcoords[1] = (new Vector2f()).set(.5f, 1f);
        texcoords[2] = (new Vector2f()).set(.5f, 0f);
        texcoords[3] = (new Vector2f()).set(1f, 1f);

        normals[0] = (new Vector3f()).set(0f, 0f, 1f);
        normals[1] = (new Vector3f()).set(0f, 0f, 1f);
        normals[2] = (new Vector3f()).set(0f, 0f, 1f);
        normals[3] = (new Vector3f()).set(0f, 0f, 1f);

        // there are 4 indexed vertices, but the object has 6 vertices
        setNumVertices(6);
        setVerticesIndexed(indices, vertices);
        setTexCoordsIndexed(indices, texcoords);
        setNormalsIndexed(indices, normals);

        setMatAmb(Utils.goldAmbient());
        setMatDif(Utils.goldDiffuse());
        setMatSpe(Utils.goldSpecular());
        setMatShi(Utils.goldShininess());
    }
}

```