

Project C: Spinning ball and beautiful objects

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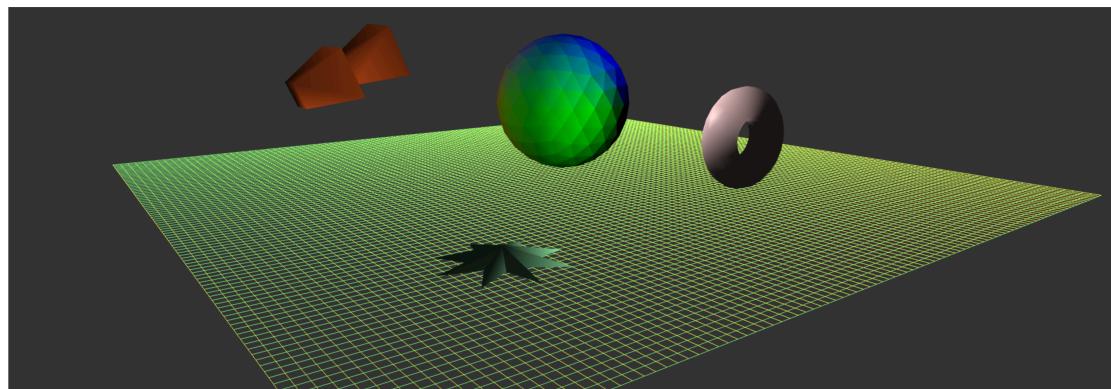
Project goal

The goal of this final project is to implement different methods of lighting and shading within a scene with the ground grid, a spinning sphere and some 3D objects. Besides, with changing the material of some objects, the project makes us more familiar with the option.

User guide

1. User can change the material of the spinning torus through clicking the "Materials change" button, one material is MAT_PEARL and another is MAT_RUBY.
2. User can also click the "Light left" and "Light right" buttons to move the light location.
3. With clicking the buttons "Change shading" and "Change lighting", user can see the different method of gouraud shading, phong shading, phong lighting and blinn phong lighting.
4. User can also navigate the scene with pressing "WASD" keys to move left/right up/down and arrow keys to look around.

Result



1. Press "WSAD" keys or arrow keys to move and look around!
2. Click the button to change the material on torus: [materials change]
3. Click the buttons to move the light location: [Light left] [Light right]
4. Click the buttons to change the shading and light, try different combination! [Change shading] [Change lighting]

Below is the method:
Gouraud Shading, Phong Lighting

Figure a: original view

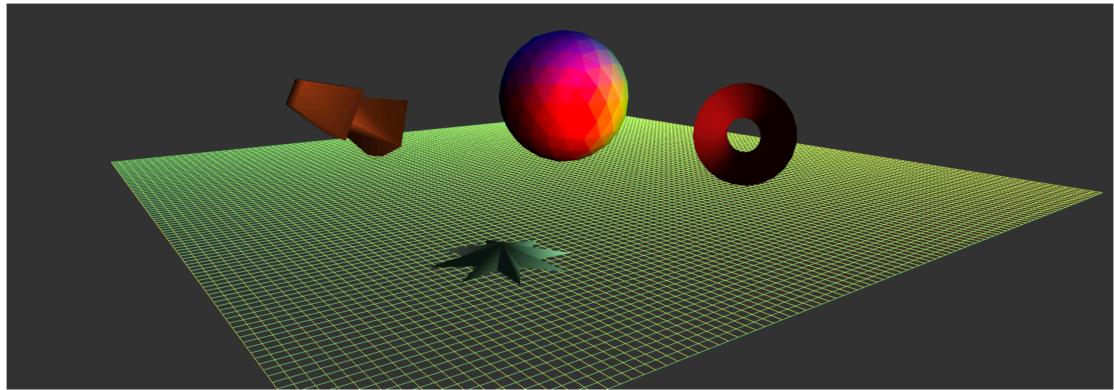


Figure b: Change material view

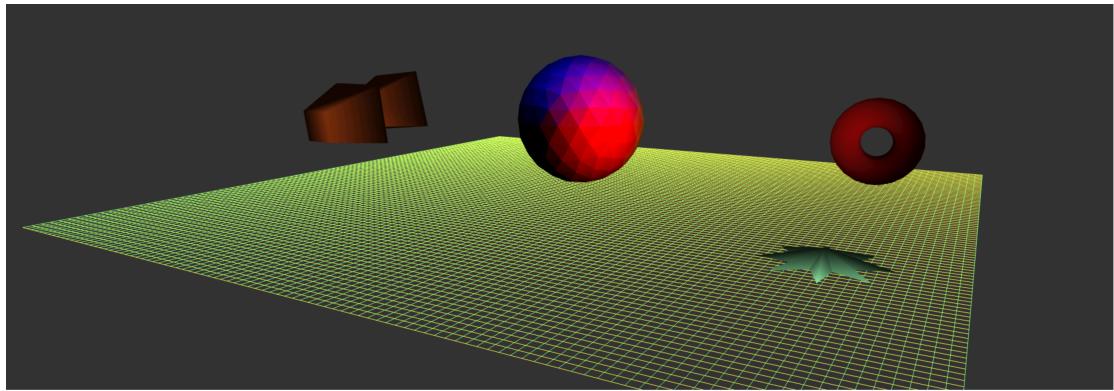
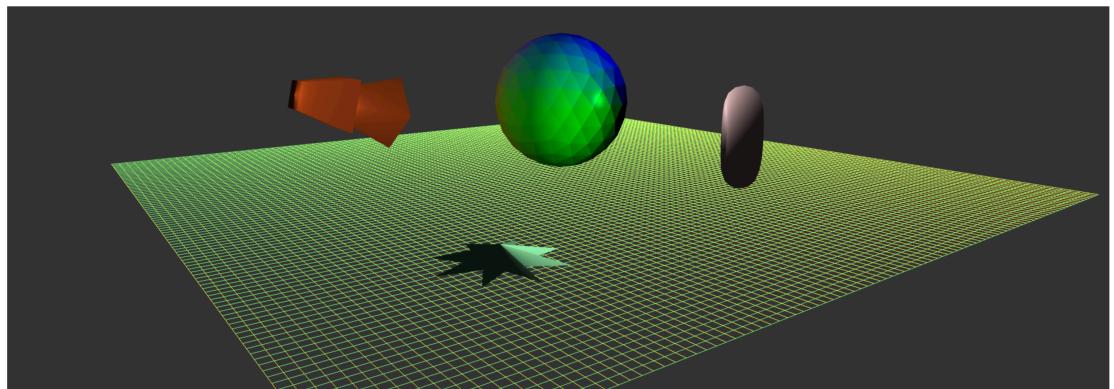


Figure c: Move camera view



1. Press "WSAD" keys or arrow keys to move and look around!
2. Click the button to change the material on torus:
3. Click the buttons to move the light location:
4. Click the buttons to change the shading and light, try different combination!

Below is the method:
Phong Shading, Phong Lighting

Figure d: Phong shading + Phong lighting view

Below is the scene graph:

