COSC 4370 – Homework 3

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I Problem

The assignment involves creating a viewing system that looks at a rendered cube using

a Phong shading model. The cube is illuminated by a light source and the camera able

to be moved about to create dynamic lighting.

II Method

We need to implement a camera system, projection matrix, and implementing the Phong shading model and using the 3 lighting types(ambient, diffuse, and specular).

III Implementation

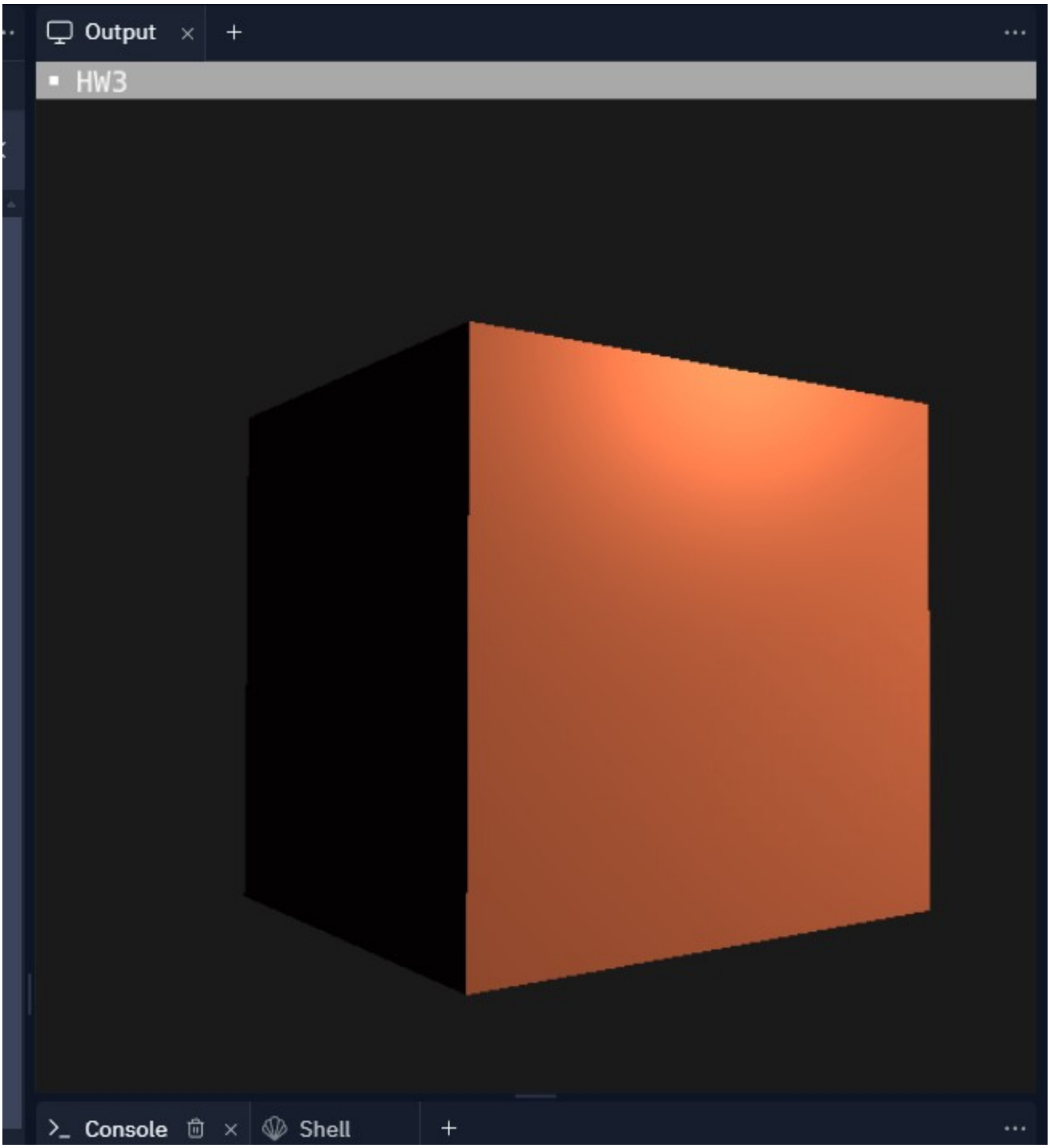
Camera: Most of the camera setup was already done, just implemented the view based on the camera position and orientation. Allowed for user movement to update the camera view.

Projection: Again most was already provided, the projection matrix is calculated using glm::perspective.

Shaders: This is where most of the work came from. The phong.vs file was for the vertex shaders. It calculated the normals and fragment postions and passed to the fragment shader(phong.frag).
The phong.frag file received the positions from the vertex shaders and and calculated the 3 lighting types; ambient, diffuse, and specular, then combines them into the final color.

IV Results

The output was a red cube with realistic lighting effects that moved dynamically with the camera movement.


Output
HW3
Console
Shell