3D GRAPHICS PROGRAMMING

CI5525

Level 1: Indoor Scene - Report

Bellido Chueco, Daniel

K1925456

CI5525 3D GRAPHICS PROGRAMMING COURSEWORK

REPORT

LEVEL 1, Project 1: INDOOR SCENE

This indoor scene project has been developed following the recipes 1.1, 1.2, 1.3, 2.1, 2.2 and an attempt of implementing the recipe 2.7 which result has been finally discarded of the final submission.

The minimum requirements have been completed:

1. Adding two lamps standing on the table.

2. Installing ambient light.

3. Installing directional diffuse light.

4. Installing point diffuse and specular light.

5. Adding different textures to the table and chairs.

The expected requirements have been completed:

6. Converting existing point lights into per-fragmented light.

7. Installing different point lights and aligning their position with the lump bulbs. They also can be switched on and off separately by the users.

8. Functionality of switching on and off implemented. Both lamps have assigned different keys (1 and 2) and they can be switched on and off with light bulbs that display white emissive light when the lamp is on and remain grey when the lamp is off.

Additional features:

9. More items have been added. The Mandalorian helmet, the living room with all its materials (textures).

10. The animated light: an additional object has been added to the scene, a swinging lamp that animates the light position.

11. The spotlight: The initial animated swinging light of the ceiling lamp was initially a simple point light and it has been converted to a spotlight with attenuation included.

Rendered Scene

The scene starts with all the lights off except for the spotlight that presents the scene as a survival horror scene.
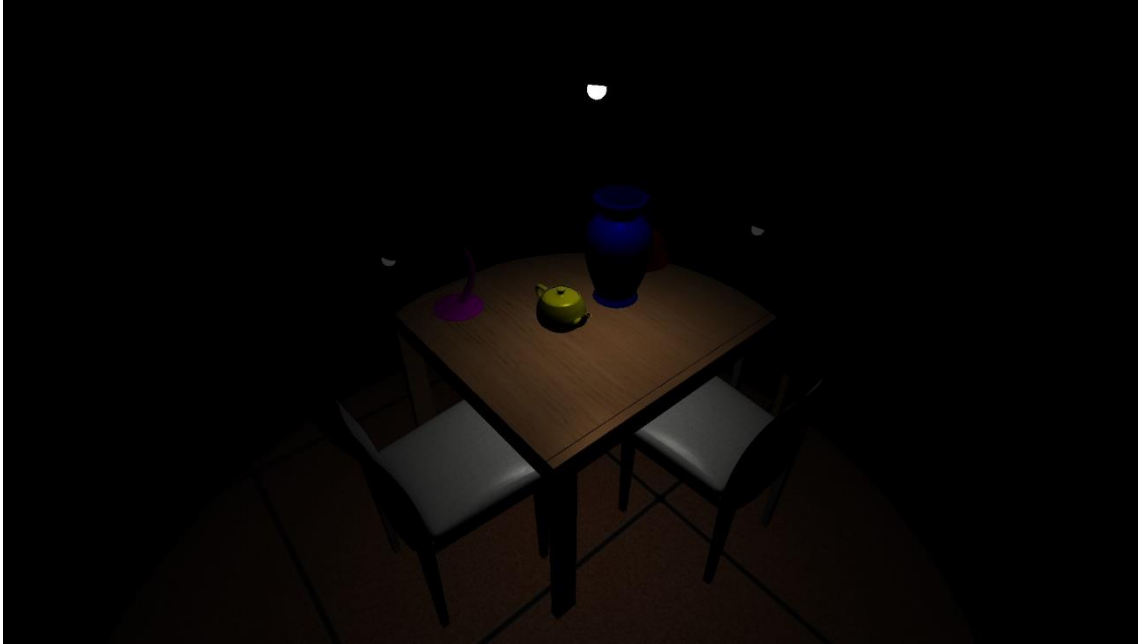
To see the scene full illuminated press the 1, 2, 3, and 4 key. 5 key switches the swinging light off.

Features not implemented

Several attempts of implementing normal map and height map have been done. The following screenshot shows the implementation of the normal map with some issues that haven't been possible to fix.

First, the colour texture was applied correctly but when implementing the normal map, the colour was lost, and the result was not as expected. The coffee beans were much bigger than in the example and it also completely broke the textures of other objects such as the vase, the helmet, the lamps, and the chairs.

Secondly, the height map ended up breaking all the lighting in the scene after applying the final vector in the shader and it couldn't be fixed on time.

These features have been removed from the final project to avoid a grade reduction due to technical issues or poor programming style.

A copy of the discarded project has been saved for further work on it and be presented in the Level 2 project.