Ahsanullah University of Science & Technology
Department of Computer Science & Engineering

A Wardrobe

Computer Graphics Lab (CSE 4204)

Project Final Report

Submitted By:

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Project Requirements

1.Wardrobe's body [with texture]
2.Wardrobe's drawers [with texture]
3.Camera will move around the wardrobe
4.Light position will rotate around the room
5.Drawers will come in/out.
6.Custom shaders
7.Implementation of lighting
8.Perspective projection
9.Texture for each object
10.Animation
11.Mouse and keyboard interaction

Software Platform:

- VS Code
- Three.js

Project Features:

1. **Model [with texture]:** 3D model of a wardrobe within a room is created and loaded into the scene. The wardrobe model contains multiple objects like door, drawers, top and bottom. Various textures are used for these objects.

2. **Camera Movement Around the Wardrobe:** The camera is set to look at the Wardrobe. The camera can be controlled by keyboard interactions to freely move around the scene(forward, backward, left and right) and change camera directions(turn left and right).

3. **Light Position Rotation:** The Light source is set on top of the object to orbit around the object anti-clockwise.

4. **Drawers opening and closing:** For the first mouse left-click the top most drawer of the wardrobe will open . For the second and third click, middle and downmost drawers will open themselves. All of the drawers will remain open after three clicks but for the fourth click, all the opened drawers will close themselves and set the click number to 0 to repeat this process like a loop.

5. **Custom shaders:** Custom shader has been implemented to give texture to the room walls.

6. **Implementation of lighting:** An ambient light and a directional light has been added. The directional light orbits around the model on the xz-plane maintaining the y position.

7. **Perspective projection:** Perspective camera has been used for perspective projection.

8. **Texture for each object:** Each type of object has individual textures.

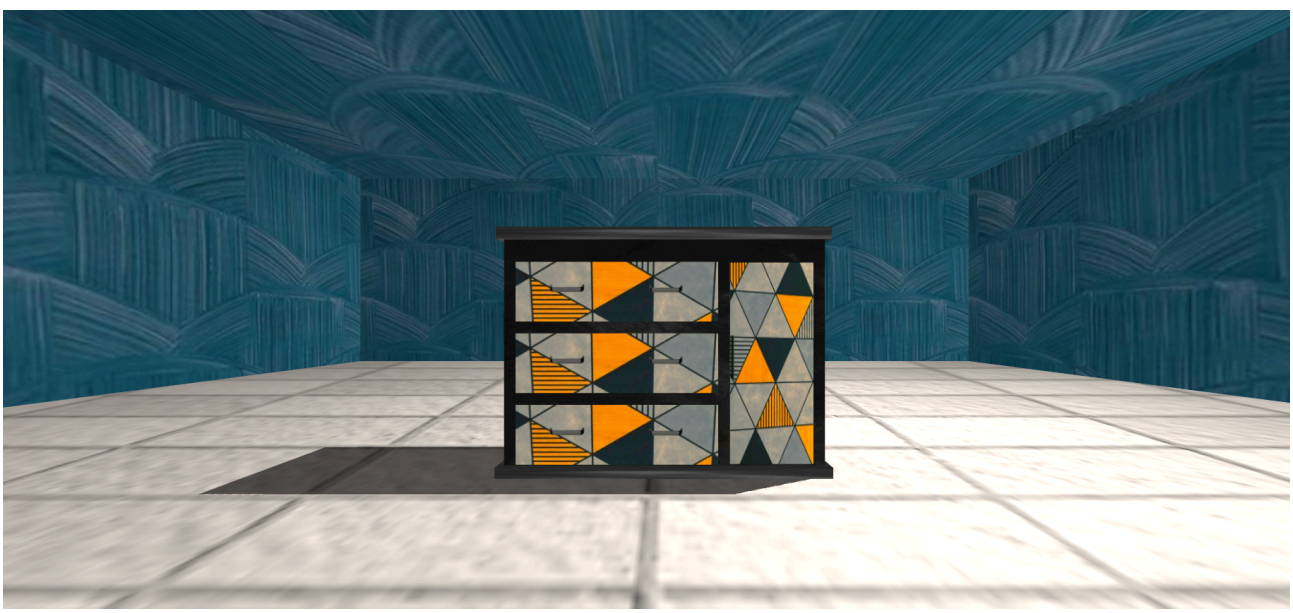
9. **Animation:** Light position rotation changes overtime. While camera rotation and camera position can be changed over keyboard interactions.

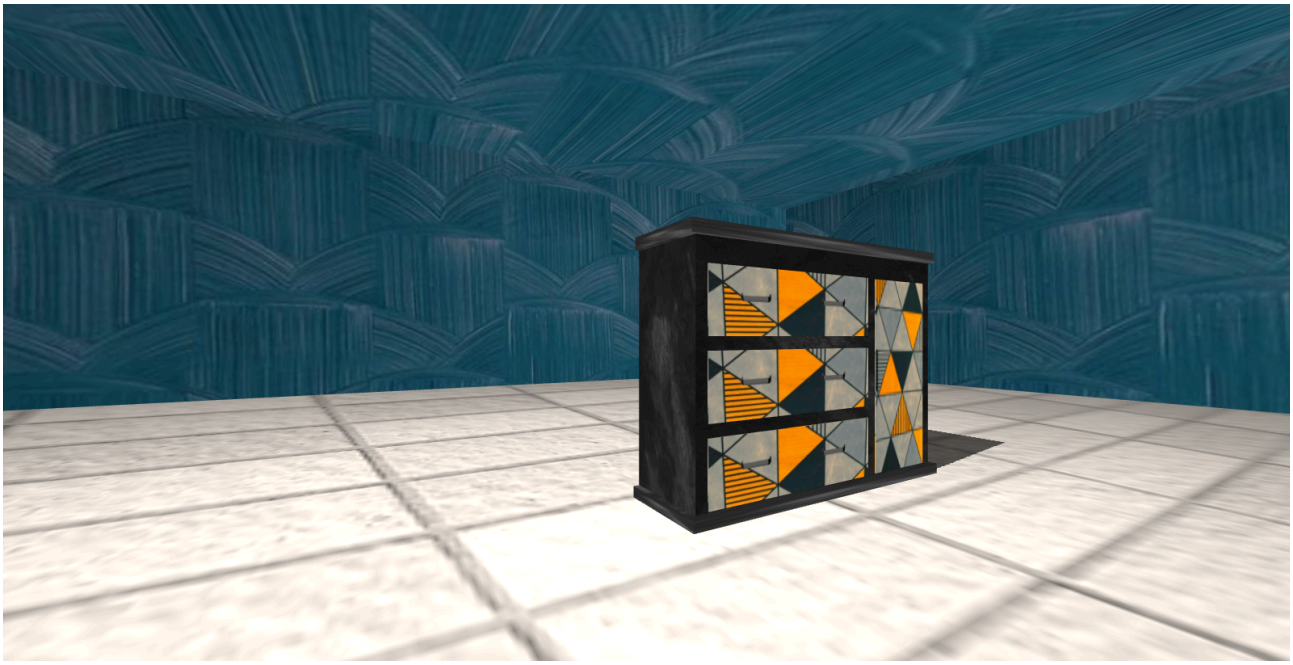
10. **Mouse and keyboard interaction:** Mouse and key event is handled for camera movement and rotation purpose.

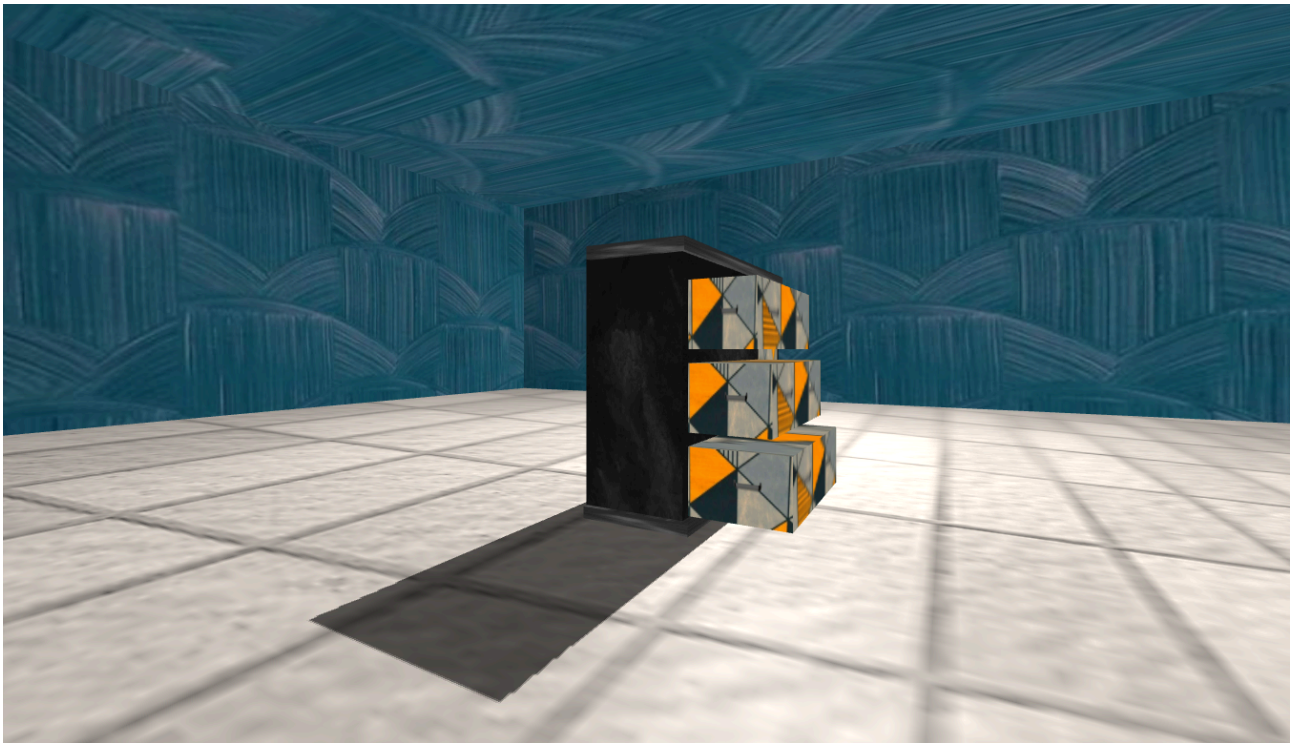
No	Features	Status
1	**Model [with texture]**	Implemented
2	**Camera Movement Around the Wardrobe**	Implemented
3	**Light Position Rotation**	Implemented
4	**Drawers opening and closing**	Implemented
5	**Custom shaders:**	Implemented
6	**Implementation of lighting**	Implemented
7	**Perspective projection:**	Implemented
8	**Texture for each object**	Implemented
9	**Animation**	Implemented
10	**Mouse and keyboard interaction**	Implemented

Table 01: Project Feature Table

Snapshots:







Contribution:

- 190204017 : 50%
- 190204020 : 50%

Future Work:

- Animations on Wardrobe doors can be implemented where the door can be opened and closed on key interactions.