CISC 3620 Homework 4

Create a 3D Room with Three.js

Objective: Using Three.js in CodePen, you will create a 3D room scene that fulfills specific requirements. This assignment will strengthen your understanding of 3D graphics, modeling, lighting, and texture mapping.

Instructions:

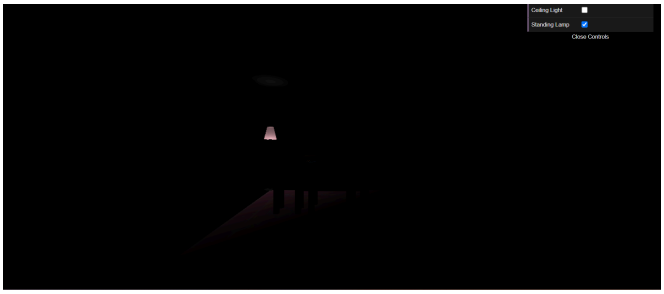
1. Create a new CodePen (remember to add the necessary scripts to your HTML)

2. Using Three.js, implement the following:

- **Room Structure (15 points):**
    - Create a room consisting of:
        - **A floor**
        - **Three walls**
        - **A ceiling**

- **Lighting (30 points)**:
    - Include at least **two light sources** (including proper positioning) in your scene.
    - Create a **GUI** (Graphical User Interface) that allows users to **toggle each light source on and off.**

- **Shadows (20 points):**
    - Include at least one object that **casts shadows** (e.g., a lamp or table)
    - Include at least one object that **receives shadows** (e.g., a floor or wall)



- **External Model Import (10 points):**
    - Import at least **one external 3D model** (e.g., a plant, chair, or decorative item). Use the GLTF format for compatibility.
- **Custom Geometry (10 points):**
    - Using Three.js geometry functions, create at least **one custom geometry** (e.g., a uniquely styled chair, table, or other object).
- **Texture Application (10 points):**
    - Apply at least **one texture** to any object within your scene to enhance realism.
- **Navigation (5 points):**
    - Implement **Orbit Controls** to allow users to navigate through the scene (rotate, zoom, and pan).

Total Points: **100**

Submission:

You will have a week and a half to complete this assignment.

When you have completed your assignment, **please submit the link to your CodePen project along with a brief reflection (1-2 paragraphs)** on the challenges you faced during implementation and how you overcame them.