CS148 Final Project Report

Sophia Jiang (sj426070) & Clare Lei (leic)

I. Overview

Our project was inspired by the atmosphere of abandoned spaces gradually reclaimed by nature. While our original reference depicted a peaceful, rain-soaked passageway with rabbits resting among vegetation, we expanded the concept into an abandoned interior where remnants of human life, a bed, television, desk, and everyday objects, are slowly overtaken by plants and inhabited by rabbits.

Our goal was to capture the contrast between human civilization and nature while creating a calm, dreamlike atmosphere. Using Blender's Cycles renderer, we combined physically based lighting, global illumination, reflections from the wet floor, and depth of field to recreate the soft, cinematic mood of the reference. Alongside these rendering techniques, we created original geometry, manually unwrapped UVs, and authored custom textures for several key assets to satisfy the project's technical requirements.

Initial Reference

Final Rendered Scene

Variant A

Variant B

II. How We Fulfilled the Project Requirements

1. Lighting and Rendering

We set up two light sources: a sun light pointing from the window to the room and a point light inside the room to make the environment brighter. This choice was made as we wanted a surreal effect from the strong light to create a dream-core vibe. The final scene was rendered using Cycles.

2. Main geometry from scratch

We modeled the majority of the primary objects in the scene entirely by hand using Blender's polygon modeling tools. These include the television, flashlight, desk, bed, food can, teapot, teacup, and the two rabbits on the floor.

Among these, the bed was one of the most complex assets. It was constructed from multiple individually modeled components, including the frame, slats, mattress, pillow, and bedsheet, to achieve realistic proportions, clean topology, and flexible material assignment.

The rabbit was modeled using polygons and processed with auto smooth. The furry texture was built with the particle system and the Principled Hair BSDF shader.

3. UV mapping and texturing from scratch

1) UV Mapping

   To satisfy the UV mapping requirement, every object in the TV collection was manually UV unwrapped. We manually placed and adjusted seams instead of relying on automatic methods such as Smart UV Project, resulting in clean UV layouts with minimal distortion. The UV islands were arranged efficiently to ensure accurate texture placement.

2) Original Texture Creation

   To satisfy the texture-from-scratch requirement, we created original textures for both the TV and bed collections. In particular, the bedsheet uses a hand-painted bump map and a manually edited color texture with painted folds and shadows to create a more realistic fabric appearance. The television collection also uses custom textures created specifically for this project.

3) Materials and Shader Nodes

   All materials were created using Blender's node-based material system with the Principled BSDF shader. We used custom textures together with shader nodes to control base color, roughness, metallic properties, and bump details. The bedsheet uses a hand-painted bump map for fabric wrinkles, while the television materials combine custom textures with physically based shading to produce realistic surface detail and reflections.

4. Blender/Cycles advanced feature

We used depth of field to emphasize the main subject and add depth to the scene. Since the composition takes place within a rectangular room, this effect helps produce a more natural and visually appealing render.

III. Members' Duty

We collaborated throughout the entire project, jointly planning the scene layout and designing the main geometry. We then divided the modeling work by having Sophia and Clare each create several objects independently. Afterward, Sophia integrated all of the assets into the final scene, and Clare completed the lighting setup and rendering.

IV. Assets

Modeled from Scratch

- The objects we modeled from scratch include the television, bed (bed frame, mattress, pillow, bamboo mat, and bedsheet), two rabbits on the floor, food can, flashlight, desk, teapot, and teacup.

Downloaded Models

The following models were obtained from external sources:

- Wall clock
- Ceiling fan
- Ivies was generated using the Ivy Generator, which also provides the ivy textures.
- Standing rabbit

Original and Modified Textures

Original Textures

The following textures/materials were created entirely by ourselves:

- Bed frame texture (hand-painted)
- Bedsheet bump map (hand-painted)
- Ceramic wall tiles (created using Blender's procedural textures)

Modified Textures

The following textures were downloaded and then modified to better fit the scene:

- TV wood texture (also used for the window frame and exterior background)
- Bamboo mat texture (color adjusted)
- Bedsheet texture (color adjusted with hand-painted shadows and wrinkles)
- Wooden bed board texture (color adjusted with added highlights and hand-painted shadows)

Other Downloaded Textures

The following textures were used directly or with minimal modification:

- Television static (screen noise)
- Wooden desk texture

- Floor water material
- Window dirt texture
- Wall dirt texture

V. References & Sources

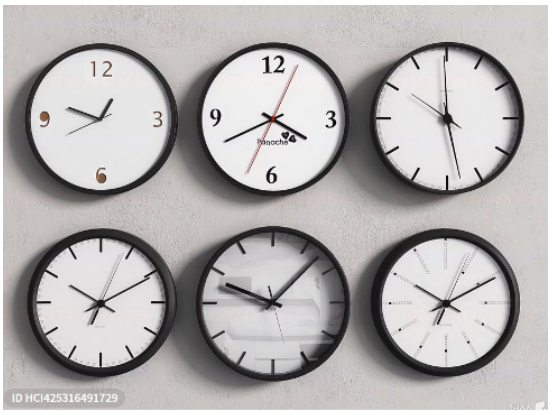
Assets:

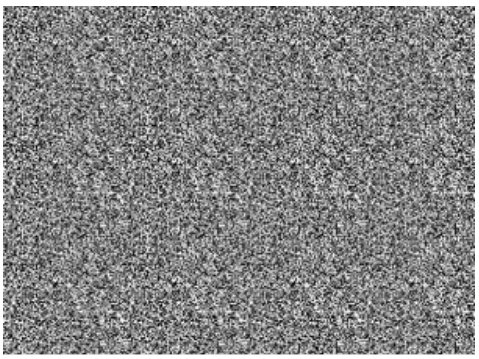
Posters on the Wall (lady), Posters on the Wall (men), Poster on the wall (blue)

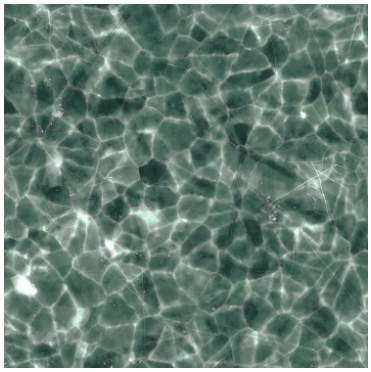
Source: https://www.textures.com

Clock Model, Wooden desk texture, Ceiling Fan, TV wood texture (also used for the window frame and exterior background), Television static, Floor water material, Standing Rabbit, Wall dirt texture, Shoes

Source: 3d66.com



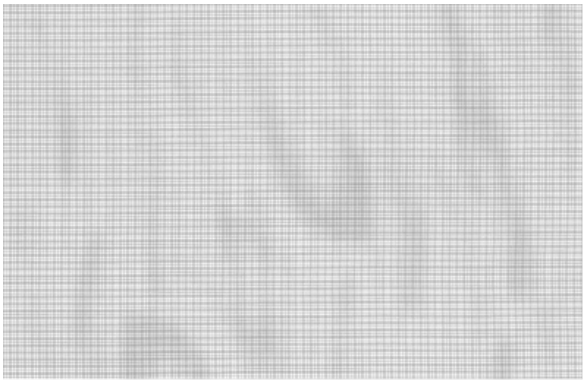




Bamboo mat texture, Bedsheet texture, Window dirt texture

Source: https://huaban.com/





Tutorials:

https://www.youtube.com/watch?v=1aNnERnHRZg

https://www.youtube.com/results?search_query=Ryan+King+Art+UV+Unwrapping

https://www.youtube.com/results?search_query=Blender+Ivy+Generator+tutorial

https://www.youtube.com/results?search_query=Polyfjord+Cinematic+Lighting+Blender

https://youtu.be/iMar3keWaUo?si=c2wy36zzxtQ8dw-d