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CS 148: Introduction to Computer Graphics and Imaging

Professor Ron Fedkiw

December 13, 2022

CS 148 Final Report

- **How we met the project requirements**

We met the geometry from scratch requirement by designing the majority of our items from scratch. Everything in our scene (except for the desk, desk chair, orange plant, monitor, and trash can) was designed from scratch. This includes the floor, wall, coffee table, sofa chair, the blue plant, the window, the blinds, the light, the coffee mug, the steam coming out of the mug, the donut, the clock, the painting frame, and the stool.

We met the UV mapping from scratch requirement by unwrapping items such as the coffee table in the center of the scene. We unwrapped our coffee table by hand to have the wood lines from the texture on the edges of the table be vertical along the table. For the floor of our rooms, we created a texture from scratch using procedural generation to create a tiled floor design that matches the color scheme of our scene. Determining what design we would use for our floor was initially difficult since textures from online did not match the aesthetic we were looking to create, so using the procedural generation was helpful in creating a design that fit with the rest of our scene. Another interesting component of our work was adding nodes to the monitor object in the nighttime room so that it not only displayed the Netflix image, but also acted as a light source illuminating the room.

One advanced feature we created using Blender's cycle feature was adding steam to our coffee using volumetrics. We accomplished this by adding a cube and removing the Surface property and instead adding a Volume principled volume property. We then further adjusted the color, density, shape of the object and other components to get the subtle but desired effect of steam.

- **What each member of the group did**

Michael and Jared both worked on creating the objects. Michael took lead on creating the geometry of the scene and how the two rooms would be configured. Jared

took the lead on adding details and textures to the objects. Michael also found and imported the objects we did not create and decided on the color scheme, while Jared worked on the lighting and the camera angle. The work was evenly distributed.

- **What assets you downloaded from online vs. what assets you made yourself**

Images downloaded:

Nighthawks by Edward Hopper for painting:

https://www.artic.edu/artworks/111628/nighthawks

Netflix image for night monitor:
https://www.davemanuel.com/2014/10/15/netflix-set-to-lose-billions-in-market-cap-following-q3-earnings-report-release/

Objects downloaded online:

The desk, monitor, wooden chair, trash can, and yellow plant.

From Turbosquid "Another bedroom" by Bubble Tea:
https://www.turbosquid.com/3d-models/another-bedroom-3d-1920104

Objects made:

The floor, rug, walls, clock, curtain, window, curtain rod, coffee table, plate, coffee mug, steam, donut, blue plant, stool, lamp, pillow, sofa chair, painting frame, and backgrounds.

- **Tutorials (documents/videos) referenced, if any?**

Living room designed tutorial by 3D Greenhorn on Youtube (parts 1 -3):
https://www.youtube.com/watch?v=dEGJeVnWZAA

UV Unwrapping for Beginners by Ryan King Art:
https://www.youtube.com/watch?v=qa_1LjeWsJg

Image plane as light object by Blender Study:

https://www.youtube.com/watch?v=dTdHV8w52L0

How to create Fog in blender by KNX Productions:

https://www.youtube.com/watch?v=4NrOXReR3Dk

Lighting for Beginners - Blender 3D by Southern Shotty:
https://www.youtube.com/watch?v=o0uc4sRArjE

Procedural Textures Introduction by Blender:

https://docs.blender.org/manual/en/2.79/render/blender_render/textures/types/procedural/introduction.html