

Production Diary: Cyberpunk Alleyway

GA5002

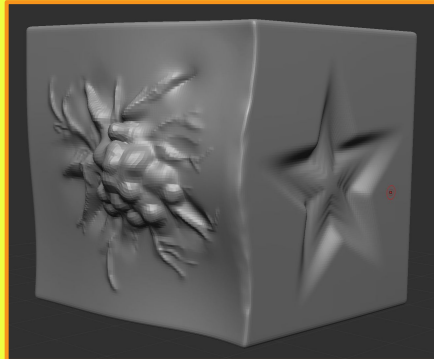
Reneil Mallari - 24100454



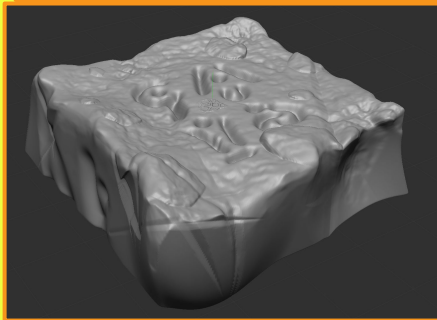
WEEK 1 - LESSON

This week, we were given a full introduction to the sculpting software Zbrush. We were taught how to navigate through the (admittedly confusing) UI, the keybinds, and most importantly how to sculpt geometry and keep a clean mesh.

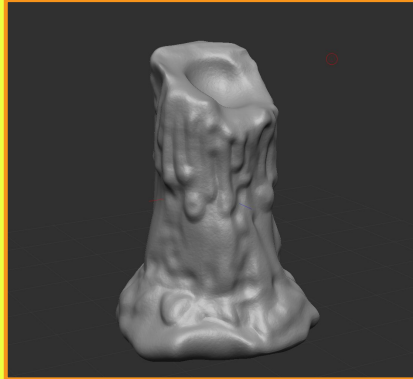
Using various different brushes, we learnt how we could use sculpting in our own projects, using it to sculpt detailed props, and eventually used these skills to create a candle of our own.



Here, we were simply experimenting with brushes. I made a gross looking pustule with veins using the blob and standard brushes, and a star using an alpha texture.



It got slightly more complex here - we were taught how to import brushes and how use them. These were brushes used by the environment team on World of Warcraft.



Finally, using a base mesh we made our own model candle from scratch. This was mainly the blob, clay buildup, standard and smooth brushes.

WEEK 1 - PROJECT

This week, I started researching my projects. My initial ideas were received relatively well and I expanded on the second one which feedback found to be vaguer - a Honkai Star Rail dock - a bit, and I got to work on my favourite one of Cyberpunk 2077.

I went back and forth through the same alleyway I wanted to reference in the game itself - I had left off here during a mission and I felt it was the perfect place to reference for my own project. Here, I studied the various textures and ways they made the alleyways, and the surprisingly deep modularity that they used.



In-game screenshots



These food shops were found nearby each other, but still completely different places - going to show that even entire interactable stalls can be repurposed to save on draw calls. Both of these had perfectly interactable food shops, too.

WEEK 1 - PROJECT (cont.)

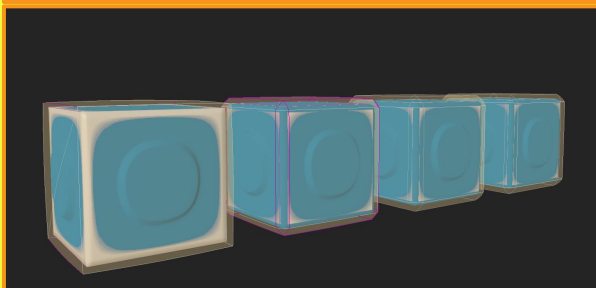
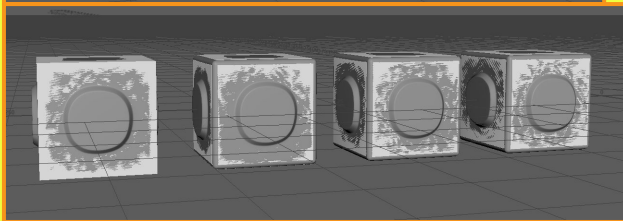
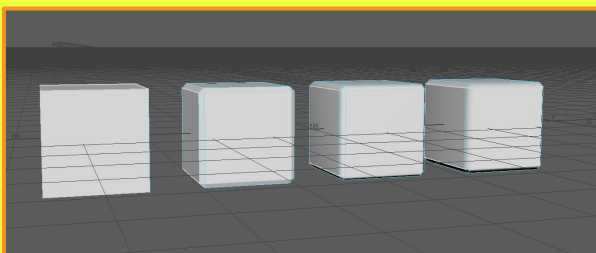


These vents are literally the exact same vent - no other adjustments made using decals and such. They're simply scaled up and down (and occasionally, different colours, but I couldn't get a of a good picture). No normal player would realistically notice this - this is just incidental environment details - so it makes sense why they only make a few very reusable props. In my project, I'd like to do something similar.

WEEK 2 - LESSON

Continuing on from the previous week, we were taught about retopologizing - making a high poly mesh into a low poly one - then how to bake the details of a high poly mesh into a low poly mesh through Substance Painter and the use of normal maps.

We were also taught the importance of having good geometry and how different sorts of meshes have different effects on how baking would affect it.

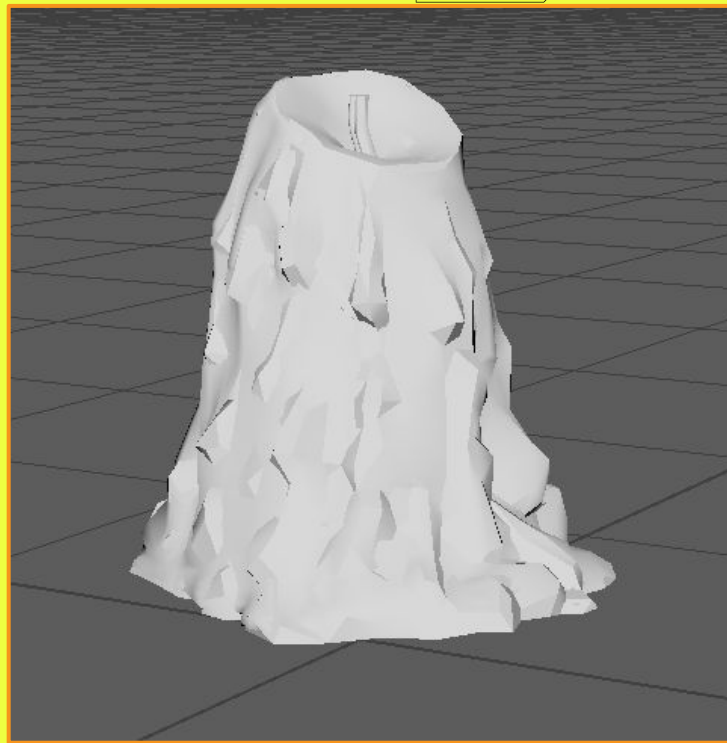


This exercise was to show us the effect of different edges on baking. Here, you can see a higher poly model being overlaid onto four very slightly different meshes with different edges - harder edges, softer edges, and a mix of both.

Here, you can see them in substance painter being baked. While very subtle, some of the normals have errors or simply don't look right - the one with all hard edges looks the same, while the one beside it has thin lines breaking the texture, indicating a baking error.

WEEK 2 - LESSON (cont.)

Here, you can see a decimated mesh - one of the ways to retopologize a high poly mesh down to a low poly mesh. This one retains a lot more of the actual geometry while having very bad topology, being made of triangles. This is in contrast to Zremesher, which does a slightly worse job of retaining the look of the original mesh in return for much cleaner topology.

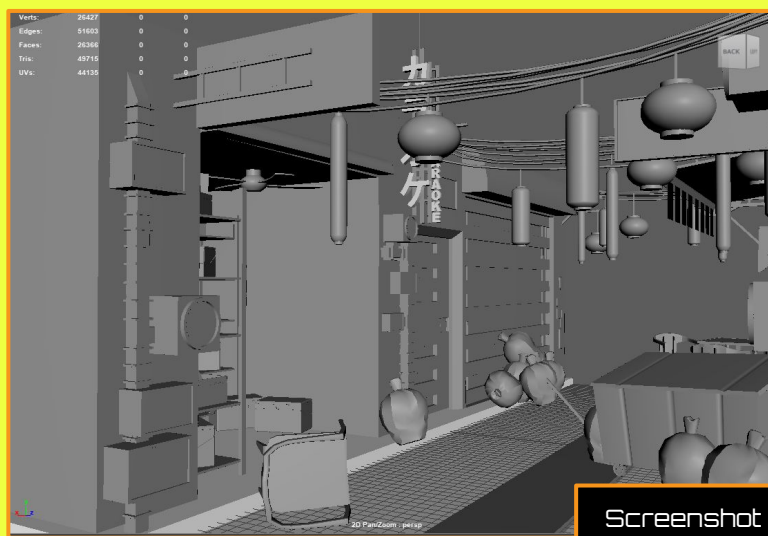


WEEK 2 - PROJECT

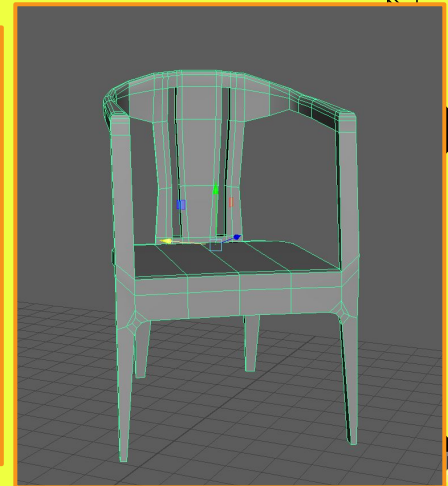
Here, I worked on the block out of the project - but honestly, I definitely got a little more carried away than expected and ended up doing quite a lot of the modelling as well. As a result, the block out ended up looking very nice - and definitely set my vision for this grungy, cyberpunk alleyway in a good direction.

However, some meshes didn't seem very well fleshed out still, and I figured I would come back to those later.

Here are some examples of meshes that were in that weird in-between of looking okay, but ones I didn't feel were good enough to be UV'd and textured yet.



Screenshot of blockout



WEEK 3 - LESSON

This week was all about materials - in Substance Painter, we learnt the importance of stacking variations of different maps, such as making colour variation and roughness variation, to make interesting textures. This was done through various filters - like blur and gradients.

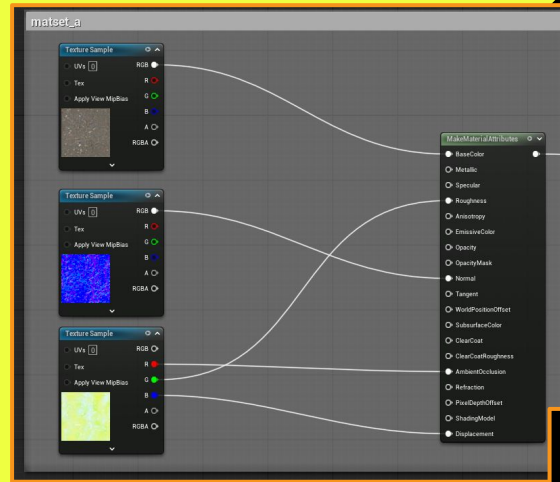
In Unreal Engine, we learnt about texture blending - the process of overlaying different textures on top of each other and using alpha masks to paint or erase one or the other, creating very interesting textures without having to go into a different program. It can also be enhanced with the use of a noise map.



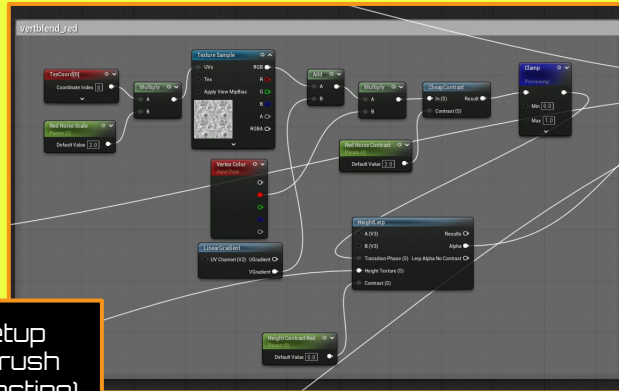
Here, you can see the evolution of this practice model. The initial part is making an ID map to make it easier to apply textures, but the rest are essentially layers and grunge maps stacked on top of each other over and over again to gain a good, realistic result.

WEEK 3 - LESSON (cont.)

Here are the texture blending exercises. Using Unreal's mesh paint feature and a relatively simple shader node setup, you can achieve a pretty visually interesting result, even being able to mix 3 different materials together using colour channels.



Texture setup



Noise setup
(making brush
more interesting)

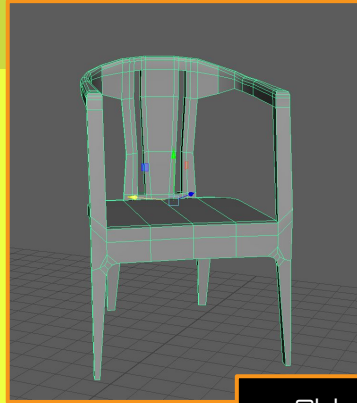


Result

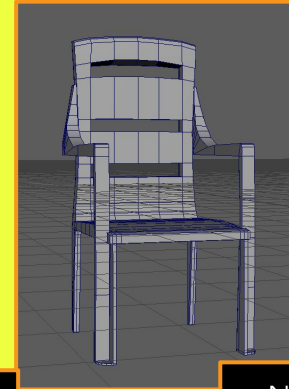
WEEK 3 - PROJECT

This week, I feel like I slowed down a little after getting the block out done - I mainly just worked on UVing a few of the larger props this week, such as the dumpster, and figuring out how to model the hardest prop - the chair.

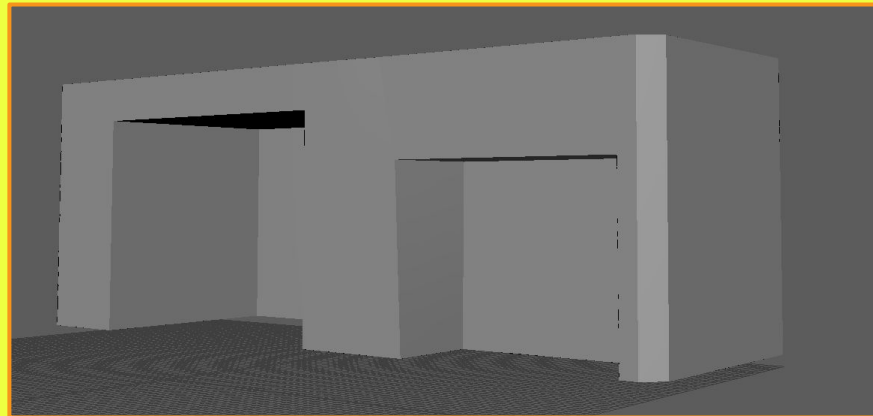
Aside from that, I was mainly hung up on figuring out if making the walls and floors modular was worth it, since the walls had some different shapes. However, I didn't want to spend too much time on it, and eventually settled on making one big mesh that I would use the texture blending I had learnt to make look interesting.



Old chair



New chair



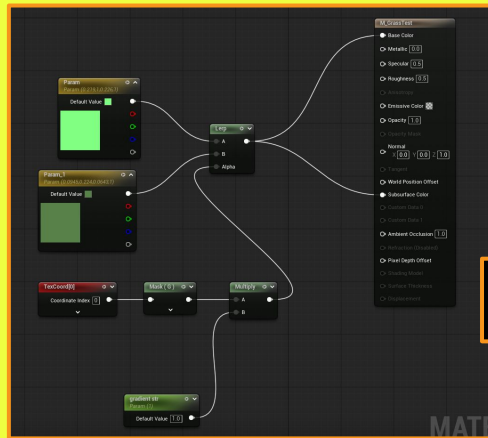
I am well aware this is bad practice - but as it stood, it would be less time-consuming to create non-modular walls instead of spending time on a modular kit for walls and floors where there isn't much room to repeat them anyways.

WEEK 4 - LESSON

This week, we learnt about all things natural - firstly, about foliage and foliage creation. We learnt how to make a stylized grass mesh and texture that could automatically wave in the wind, and how we could instance it using Unreal's foliage system. Additionally, we learnt a way to make trees - bundling meshes textured with leaves and placing them on the trunk - although the SpeedTree plugin exists, which may do a better job than doing it manually.

As a bonus, we were also able to try baking a high poly mesh to a plane, being able to begin making an atlas.

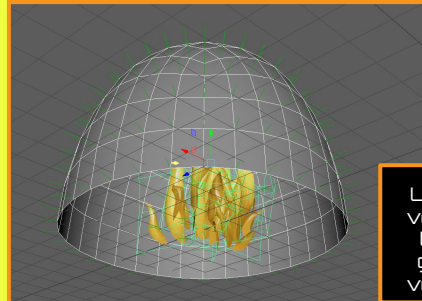
We then learnt about more complex Niagara systems - making a snow particle system using noise textures to influence randomness and texture.



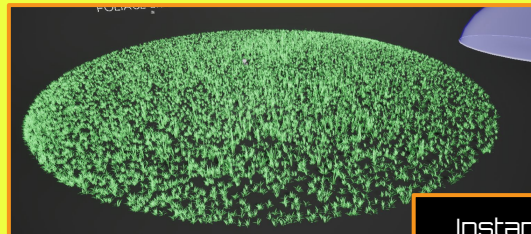
Creating the grass



Baking a leaf mesh onto a flat plane



Using a dome's vertex normals to create the grass mesh's vertex normals



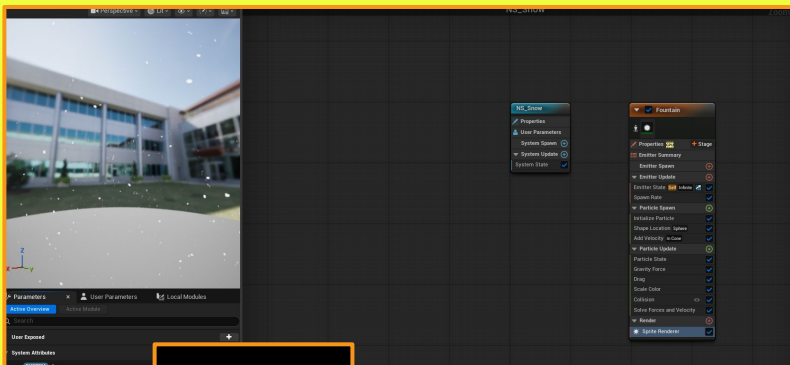
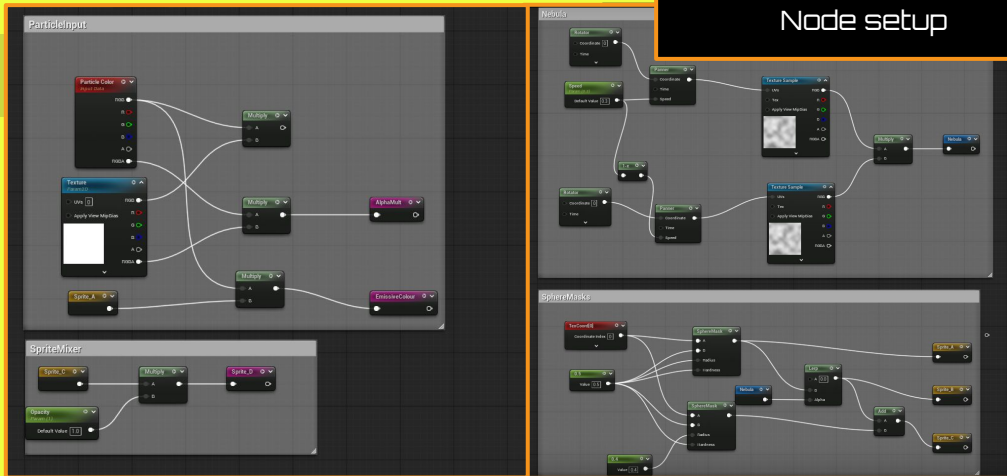
Instantiating the grass



Creating and importing a tree into UES manually

WEEK 4 - LESSON (cont.)

Here are the screenshots for the snow particle effect. It includes the node setup, what the emitter setup looks like and the final result.



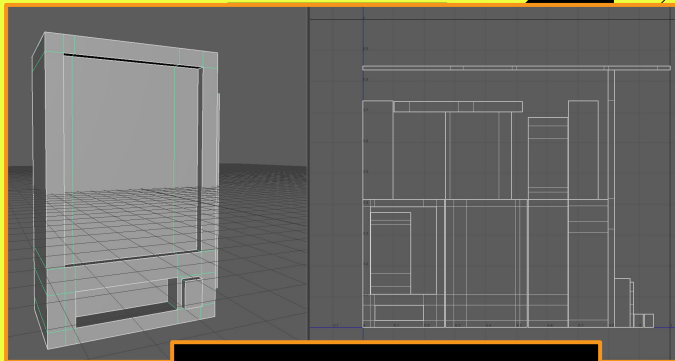
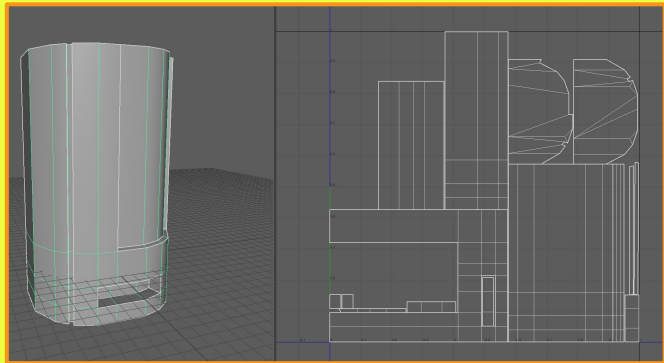
Emitter



Result

WEEK 4 - PROJECT

Unfortunately, this is where I majorly slowed down - I was hung up on other things going on in my life, and only managed to get my props into Unreal, attempting to finish UVs and also attempting textures, but nowhere near where I should be at this point.



Examples of UVs I had managed to do. In truth, these were very slightly modified automatic UVs.



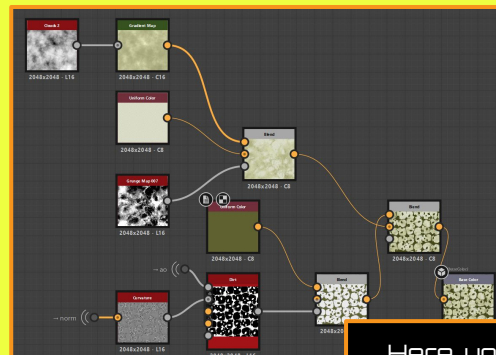
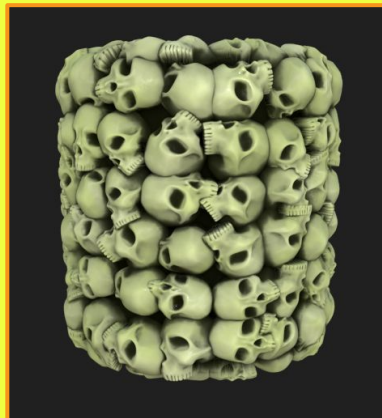
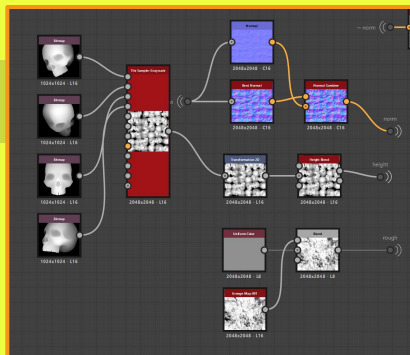
(screenshot taken from later in project)

Realistically, this was the only real texture I had managed to do. I didn't even have time to make a new mesh.

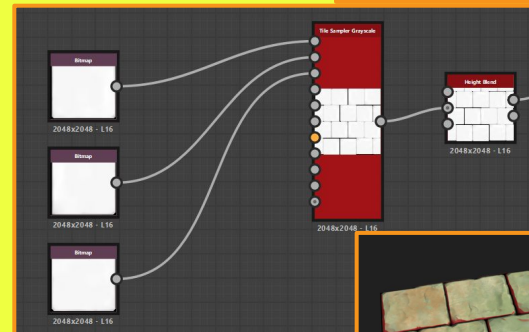
WEEK 5 - LESSON

This week, we learnt about the extremely powerful workings of Substance Designer - how we could make a height map out of a sculpt from Zbrush. Then, we also turned that height map and all the work we put into it and used it for a brick tiling texture instead - showing how versatile the software is.

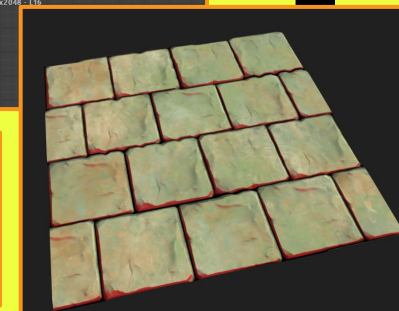
We then learnt about Unreal's sequencer, which we would render out our final shots of - how we can position our camera for different shots and how we can fade in and out of shots for a more cinematic effect.



Here, you can see multiple 'screenshots' of different angles of a sculpt being made into a tilemap, into a heightmap. With some effort, the texture looks incredible.

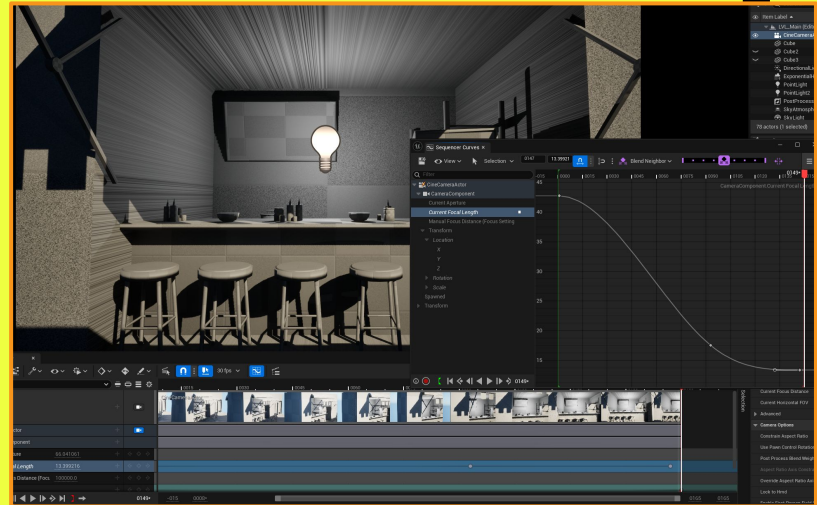


With a tile generator, all the work put into the original skull texture can instantly be turned into a tiling brick texture.



WEEK 5 - LESSON (cont.)

Here's my sequencer tests - you can see the UI, the sorts of shots I wanted to take, and the curve editor to make the camera movement move in and out more smoothly.



WEEK 5 - PROJECT

The burnout did not stop here - I only managed a couple textures here and there, and did manage to sculpt a trash bag, but again, nowhere near where I should have been.

This was definitely my lowest moment of this project as I was swamped with other things going on in my life and could only squeeze out so much work. My mood was the worst it had been for the entire project.



Various examples of the few textures I managed to do. While pretty good, this slide should have been filled with textures.

This trashbag was sculpted using fold brushes found online⁵, and baked into a low poly mesh.

WEEK 6 - LESSON

Since we weren't being taught anything this week, I began working fervently on my project as the various things surrounding my life began to settle.



This ramen shop overhang was never meant to be this detailed, but I was hung up on how to do a cloth simulation in so little time - then I realised that I could just sculpt it. Due to the rush, I couldn't spend time fixing normals and you can see some artifacts, but I still think it came out well for how short on time I was.



I actually mainly worked on the ramen shop most of the time I was in class.



You can see I've done the walls¹ and made it look weathered using texture blending - making it seem like the metal's being exposed under layers of paint.

WEEK 6 - PROJECT

This week, I somehow managed to finish almost everything that needed to be done - and finally my project looked like my original concept. I finished all the textures, tinkered with master materials to support a bit of translucency, added lighting and added all the decals, as well as making some particles around the place. I even made my own ads in Photoshop to place on the vending machines.

However, unfortunately due to these time constraints, I had to use Painter for virtually every single texture - I only used Designer for slightly more simpler textures like the wire texture, and the textures for the walls and floors.

No matter what, however, I pulled through, and I believe that I did quite well for the constraints I had imposed on myself.

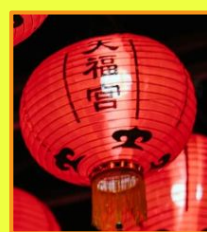


These neon decals I actually made myself - I'm particularly proud of the dragon holding a ramen bowl one. Even the ads I made myself, studying the theme of Cyberpunk's own ads.^{2 3 4}

To be honest, I had to look at a tutorial for these - even though it was essentially just a multiply going into the emissive texture.



I wanted inscriptions on the paper lanterns as seen on the right, but unfortunately Painter didn't want to work with me on making a proper emissive texture that could support stamping an inscription on it, so I had to scrap it.



Lighting tests were very successful - I believe that I managed to encapsulate the main feeling I wanted to convey - something only lit up by neon signs and industrial lights.

PROJECT REFERENCES

[1] - *YouTube* (no date) *Youtu.be*. Available at: <https://youtu.be/oBeilgg4vJU?si=7wkgvRaC7hmrMEwd> (Accessed: December 19, 2025).

[2] (No date) *Free3d.com*. Available at: <https://free3d.com/3d-model/submachine-gun-fn-p90-290.html> (Accessed: December 19, 2025).

[3] *Ryan Douglas* (no date) *Coroflot*. Available at: <https://www.coroflot.com/RyanDouglas/Dark-Pop-Fake-Soda-Campaign> (Accessed: December 19, 2025).

[4] WINBUSH (no date) *Create AMAZINGLY easy neon signs with only an image in UEFN | unreal engine 5*. Youtube. Available at: <https://www.youtube.com/watch?reload=9&v=kh6NFoSzZ-o&msockid=3b2c87d7dce111f0961e5dc6a1892030> (Accessed: December 19, 2025).

[5] (No date) *Artstation.com*. Available at: <https://www.artstation.com/marketplace/p/KGnW7/cloth-folds-zbrush-brush-free> (Accessed: December 12, 2025).

