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islington college
(इस्लिङ्टन कलेज)

SM6P07NI Digital Media Project

20% Research and Proposal

2023-24 Autumn

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I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded.

Abstract

This report is the third of four parted all year projects. It is about an assessment strategy designed to assess students in the main issues involved in the processes of initiating and producing a digital media project. It contains analysis of the overall project including the area of research and aims of the project, research regarding target audience and the way to reach them, similar product research, information about technologies employed, overall plan of the project, production phases carried out, resources used and user testing and findings.

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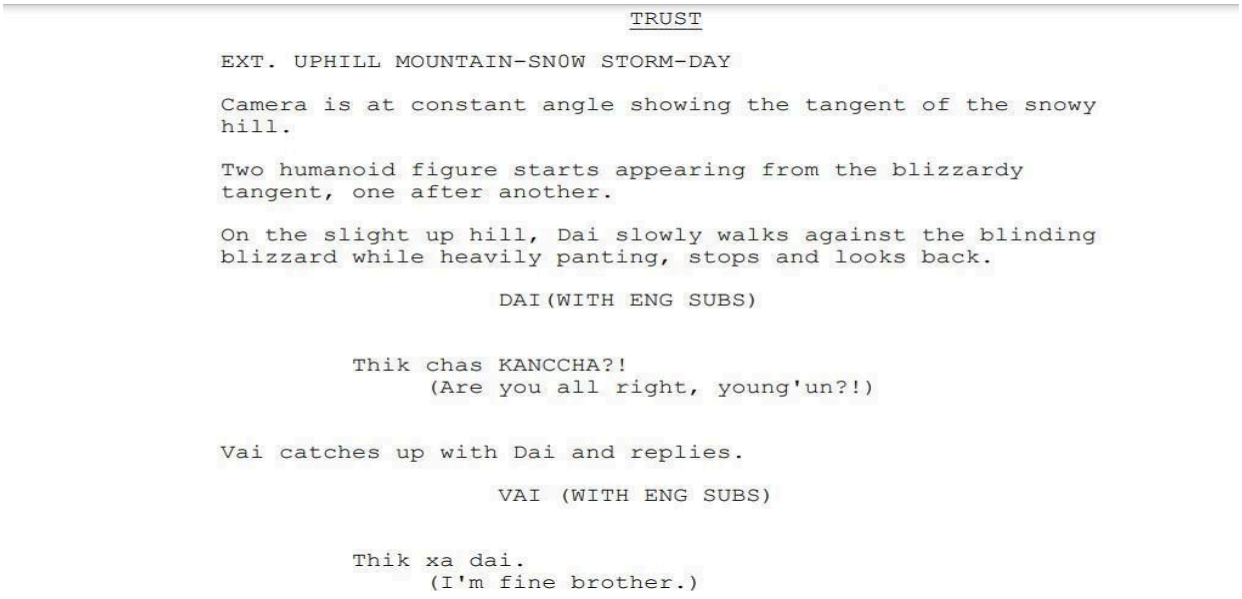
1. INTRODUCTION: -

The "3d animation" major media concept was selected for this module because the objective was to create a TV commercial for a vacation app that would allow users to select the rooms they wanted in the location they wanted. This is the third report that has been provided in the creation of the 3D animation, and it mostly consists of analysis of the overall project, including the area of research and project goals, research regarding target audiences and the best approach to reach them, and research on comparable products. Information on the technology used, the project's overall plan, the production phases completed, the resources required, and the results of user testing.

2. CONCEPT: -

The 3D TVC that will be produced is for an app that has to do with travel and tourism. After the climax, the brand logo of the app with the tagline "your trust in travel" emerges. The story begins with two travelers traveling in a mountain and climbing towards its peak. As the story develops, bringing depth to the characters.



TRUST

EXT. UPHILL MOUNTAIN-SN0W STORM-DAY

Camera is at constant angle showing the tangent of the snowy hill.

Two humanoid figure starts appearing from the blizzardy tangent, one after another.

On the slight up hill, Dai slowly walks against the blinding blizzard while heavily panting, stops and looks back.

DAI(WITH ENG SUBS)

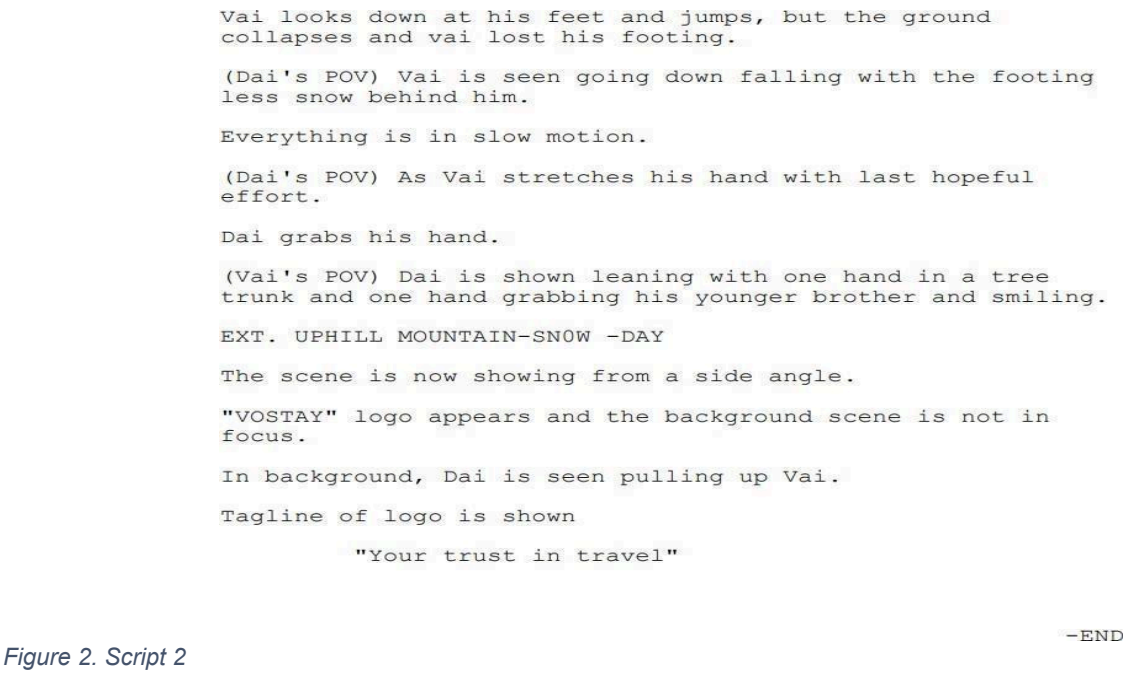
Thik chas KANCCHA?!
(Are you all right, young'un?!)

Vai catches up with Dai and replies.

VAI (WITH ENG SUBS)

Thik xa dai.
(I'm fine brother.)

Figure 1. Script 1



Vai looks down at his feet and jumps, but the ground collapses and vai lost his footing.

(Dai's POV) Vai is seen going down falling with the footing less snow behind him.

Everything is in slow motion.

(Dai's POV) As Vai stretches his hand with last hopeful effort.

Dai grabs his hand.

(Vai's POV) Dai is shown leaning with one hand in a tree trunk and one hand grabbing his younger brother and smiling.

EXT. UPHILL MOUNTAIN-SN0W -DAY

The scene is now showing from a side angle.

"VOSTAY" logo appears and the background scene is not in focus.

In background, Dai is seen pulling up Vai.

Tagline of logo is shown

"Your trust in travel"

-END

Figure 2. Script 2

3. AIMS and OBJECTIVE: -

The customer was called in order to learn more about the app and what it stands for in order to clearly outline the project's goal. The major goal of this 3D animated television commercial is to promote tourism in Nepal using the app, as he stated simply, "The aim of our app is to promote tourism in Nepal."

The client was quite clear that the main goal of the TVC is to increase app usage. The ideal approach to do this is to create an educational film about the app or a branding video for the app; the latter option was chosen because educational videos rarely stand out in this highly competitive digital media landscape.

Now that the purpose of this TVC is obvious, we may move on to applying the stated purposes, or objectives. What are the goals of the product, and more specifically, what are the goals of the video's creator? The product needs only two things: to secure its user base through this TVC and to keep the app's correct brand structure. Regarding the creator, his goal is to develop his 3D animation production talents.

To summarize,

AIMS:

to use this app to promote tourism in

Nepal. to use video to protect the app's

brand.

OBJECTIVES:

To obtain user base

to enhance a variety of 3D production pipeline abilities, including modeling, rigging, texturing, animation, and video composition.

4. Target Audience Description: -

Primary Audience: Anyone fit to travel

Age: 16+

Gender: Every Gender

Income Level: 20000+/ month

Occupation: Any

Geographical Location: All over the world

Hobbies: Trekking, Touring, Bungee, Paragliding, Pilgrimage

As was already mentioned, the main goal of the project is to use an app to promote travel to Nepal. Since the intended audience is broad and largely inclusive, the app's creators paid close attention to the cost of travel and were aware that everyone wants to travel but is unable to do so due to financial constraints. As a result, they went above and beyond to make travel as affordable as they could. However, those who are willing to travel are mostly young people seeking a rush or elderly individuals preparing for a religious journey.

5. Product Research on New Media Practices: -

Procedural texture not supported:

a method of describing a texture using an algorithm. A procedural texture explains the texture mathematically, as opposed to a bitmapped texture, which represents the texture as a bitmap. Although it is uncommon, this technique can produce textures with more precision and independence from resolution, particularly when the objects being textured have a lot of depth. Both 2D and 3D procedural textures are possible.(PC Mag, 2015) l 1033 CITATION PCM15

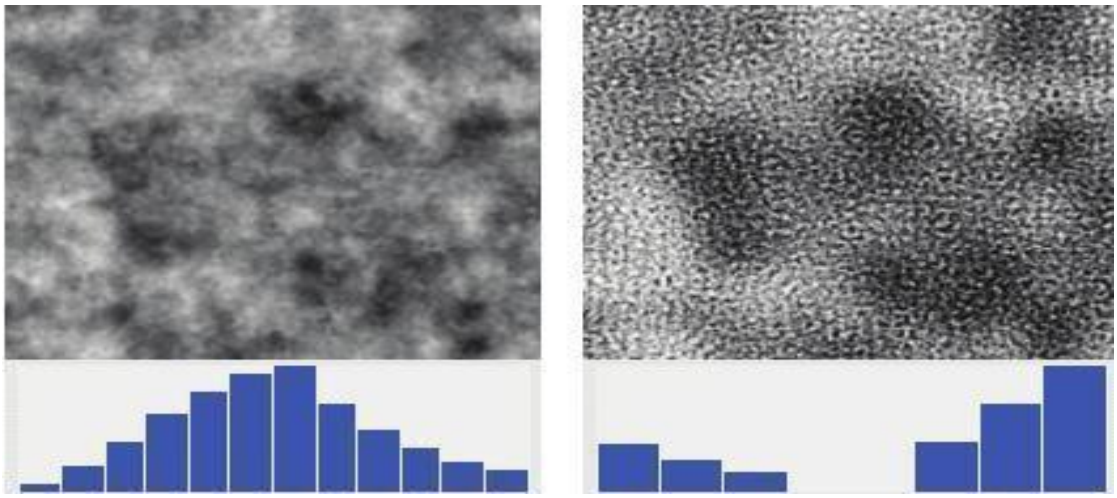


Figure 3.Procedural textures creation (Lagae, 2020)

creating textures procedurally. The marble vase (on the left) is made of two parts: a color map that repeats along the x axis in space (center), with a solid noise in the background (right). The formula for the final color is C (x + N (x, y, z)), where C is the 1D color map, N is the noise, and x, y, and z are the coordinates of the surface points. < CITATION JPL09 \l 1033 (Lewis, 2009)>

There are lots of functions which Arnold renderer does not support in GPU, they have published a full list which in summary says.

- Complex shading networks, SSS, hair, atmospherics, instancing, and procedurals are supported by the Arnold GPU.
- Due to the fact that GPU renderings are "non-splitting" (i.e., have only one path per camera/AA sample), they are currently noisier than CPU renders with the same parameters. Therefore, the AA sample count will need to be raised in GPU renderings in order to achieve equal noise. Rendering that adapter is fully supported.

- standard_surface,standard_hair, and standard_volume are supported with some limitations
- OSL is supported, with some limitations currently (see below).
- OpenVDB volumes are supported, with some limitations currently (see below).
- Volume displacement is supported, with some limitations currently (see below).
- Filename attribute tags are supported. Mipmap bias is not supported.
- Light linking is not supported on volumes.
- Limited AOV support.
- Trace sets are not supported.
- Custom procedurals, drivers, color managers are supported.
- Custom shaders, cameras, filters, BSDFs are not supported.
- Noise is not supported with Arnold GPU renders (because the variance filter is not supported on Arnold GPU)

Source to the bullets: (Autodesk Arnold, n.d.)

Figure 4. Rendered in GPU

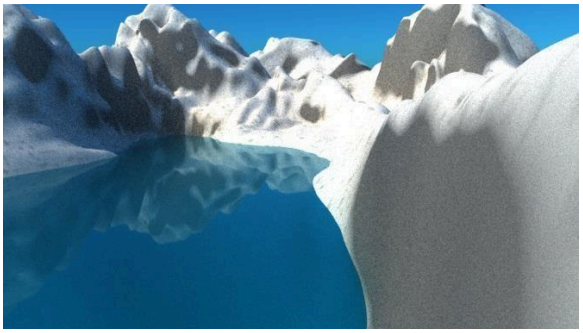


Figure 5. Rendered in CPU

As you can see, Arnold was produced using the GPU and does not allow procedural textures, whereas Arnold was rendered using the CPU and supports procedural textures. Here, the mountain terrain's layered texture and anti-aliasing features make up the procedural texture.

6. Critical Analysis of Choices During Production: -

There will be a time during the production when you must choose between a variety of options, including character design, environment texturing, and mostly rendering. In general, you select the choice that best meets your needs. For example, if you want your scene to have great quality, you must sacrifice rendering time, which can be expensive when a deadline is involved. Here are a few of these instances:

Choice between images-based texture or Procedural textures.

Figure 7. Leather texture image based (Imagecon, 2015)

Figure 6. Procedural texture (Anon., 2014)

The artist has complete discretion over whether he wants the texture to appear realistic but with few variables or realistic but with many controls at the expense of more resources. Procedural texture was selected for this project since it required the acquisition of new knowledge and skills.

RenderingChoice

As previously indicated, a procedural texture was chosen rather than an image-based texture because the GPU (Arnold) was unable to render it. As a result, the CPU (Arnold) was employed to create all the scenes, significantly increasing the rendering time.

Lighting Choice

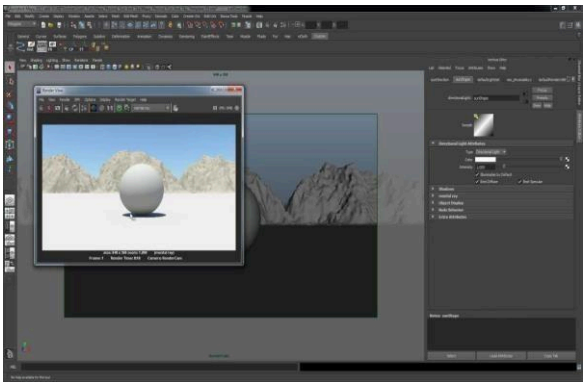


Figure 9. MAYA physical sky

Figure 8. HDRI lighting (Shah, 2019)

in order to create a depth of light from a single scene, HDRI lighting involves taking numerous images of the same subject and merging them together on a computer. Physical Sky is MAYA's default built-in sky, which can be customized as needed for the scenario. For this project, the real sky, which offers a different learning curve than one that is already built, is the one that offers the most control.

Composition Choice

The majority of the time, composition is completed in a single MAYA scene where all of the scene's channels are divided and rendered independently. However, because this scene is so heavy and uses a particle system, typical composite techniques cannot be used to create it. As a result, the scene was divided into 13 separate MAYA files, each of which was then individually animated.

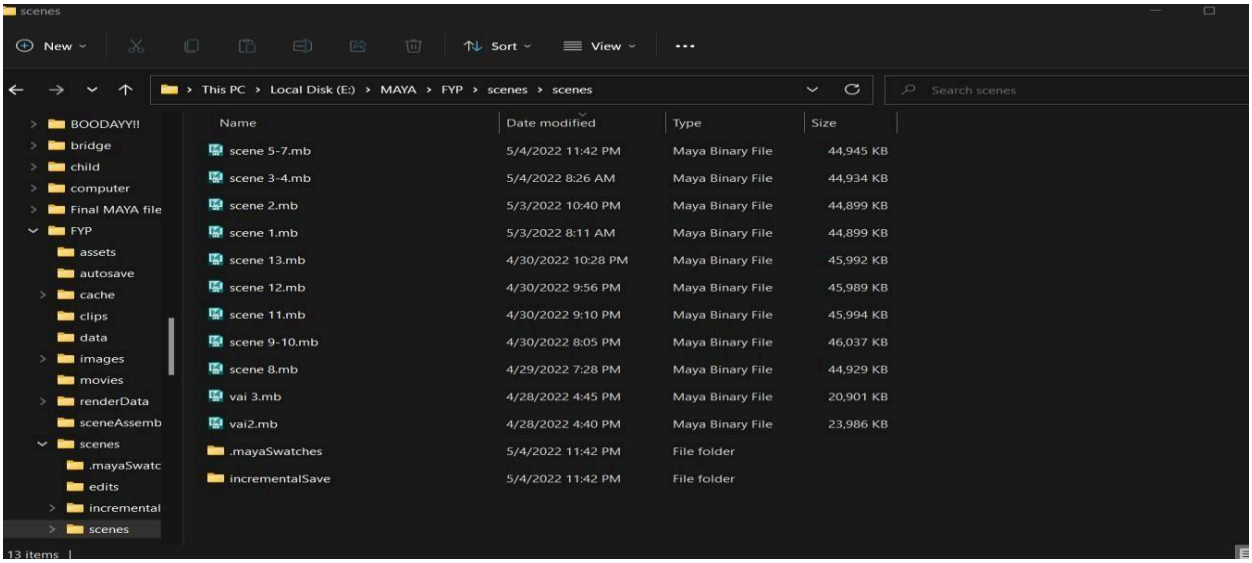


Figure 10. Scene Distribution

7. ◘Production Phase Evaluation and Analysis: -

7.1 Pre Production

This is the section where everything comes together, including planning, storyboarding, and imagination.

Planning

First, it is important to plan all the things you want to do and then represent it on paper and then do it.

Script

An excellent story can make a good movie but a poor story always makes a poor movie, all the screenwriters in Hollywood abide by this rule. Therefore, the next part is script writing.

TRUST

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In background, Dai is seen pulling up Vai.

Tagline of logo is shown

"Your trust in travel"

-END

Storyboard

Now, comes a storyboard that makes the story clear in terms of camera angle and general composition.

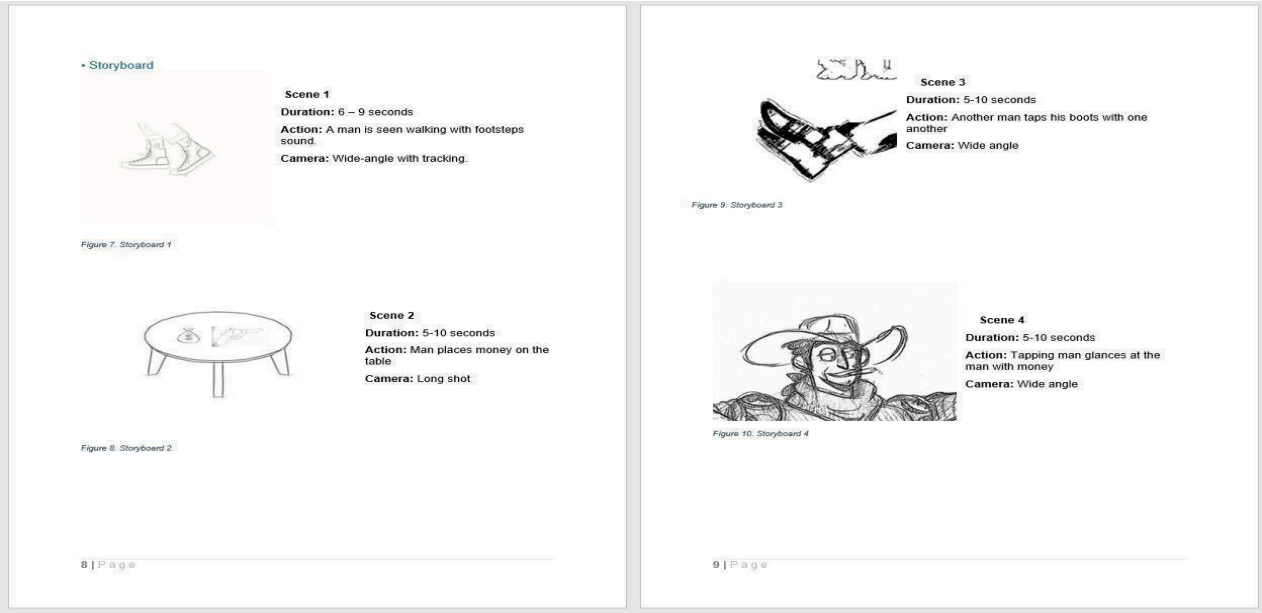

Figure 11. Storyboard template

Visualization

This part lets artists visualize and imagine the type of video they want to create.

Figure 12. Environment visualization digital painting

7.2 Production

Ninety percent of the work is completed here, and the quality of the project is assessed there since the more time you invest, the more polished a product you can deliver.

Modelling

Modeling of all the elements needed in the scene is the first step in the production process. Maya was used to construct the scenery, lake, clouds, character models, boots, glasses, and jackets for this video.

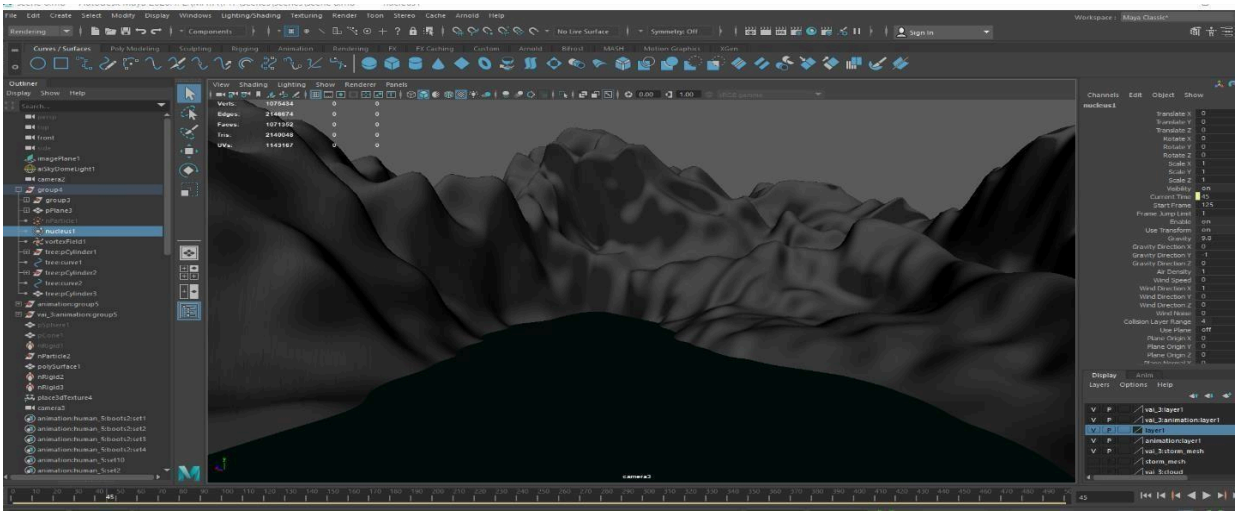

Figure 13. Modelling terrain

Texturing

The moment has come to give them texture after modeling all of the landscape, props, and characters needed for the particular scene.

Figure 14. Texturing the terrain

Rigging and Skinning

Usually employed in character animation, this portion is applied to the two characters in this instance for specific animation.

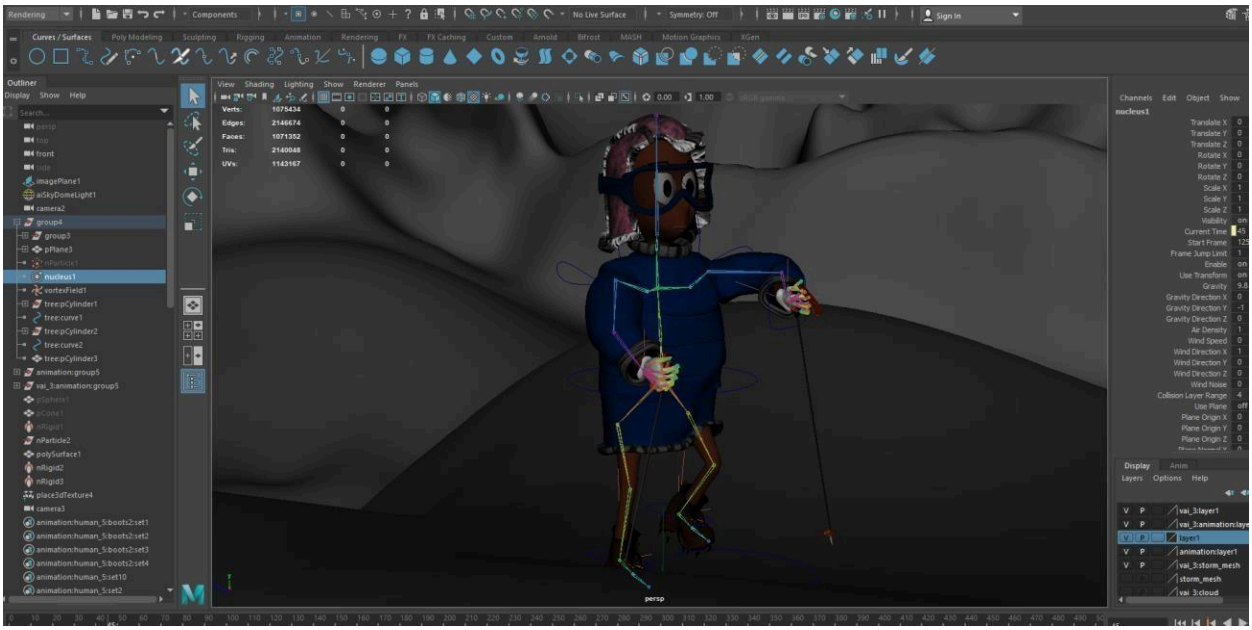

Figure 15. Rigging Character

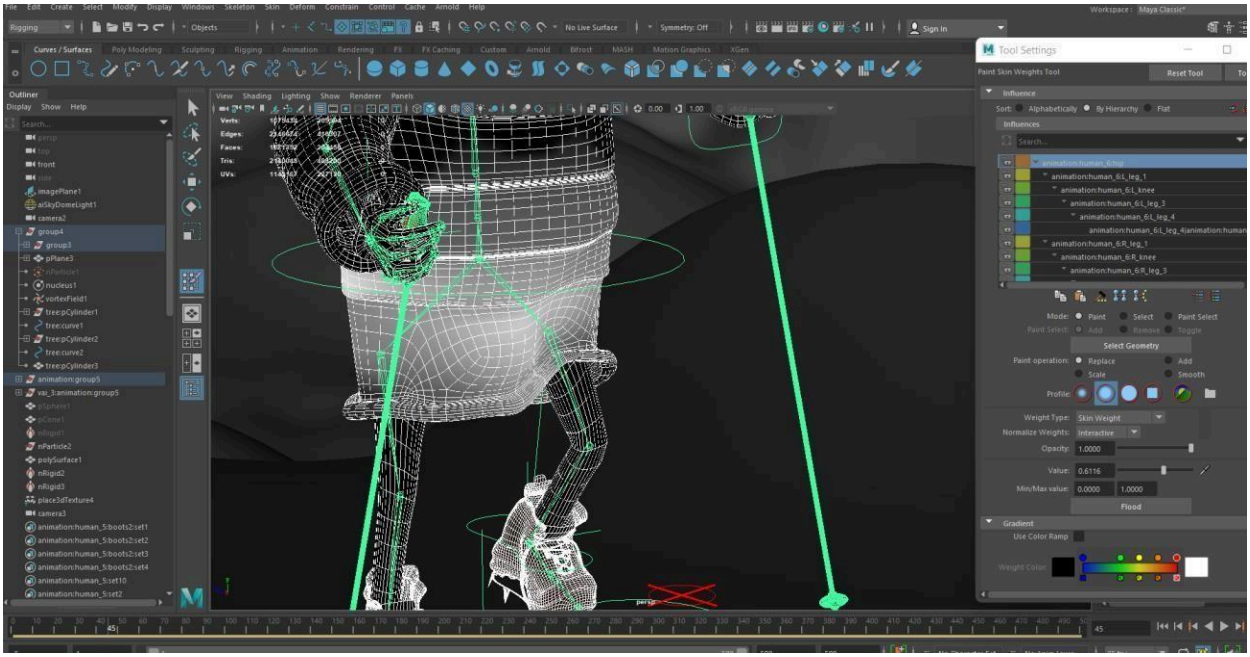

Figure 16. Skin Weight painting

Animation

Animation completes the process by giving life to inanimate items that were previously lifeless. By adding key frames at specific times to the objects, it is accomplished.

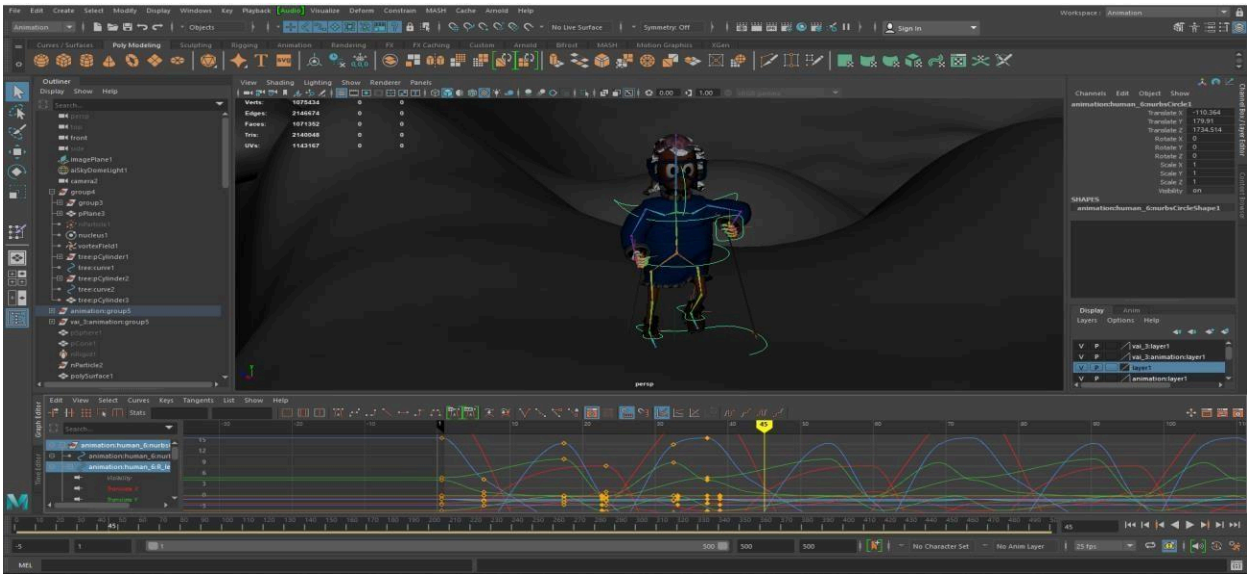

Figure 17. Key frame Animation

Particle Simulation

In this project there are many particle simulations used for the things like snow fall, cloud and specific simulation of objects.

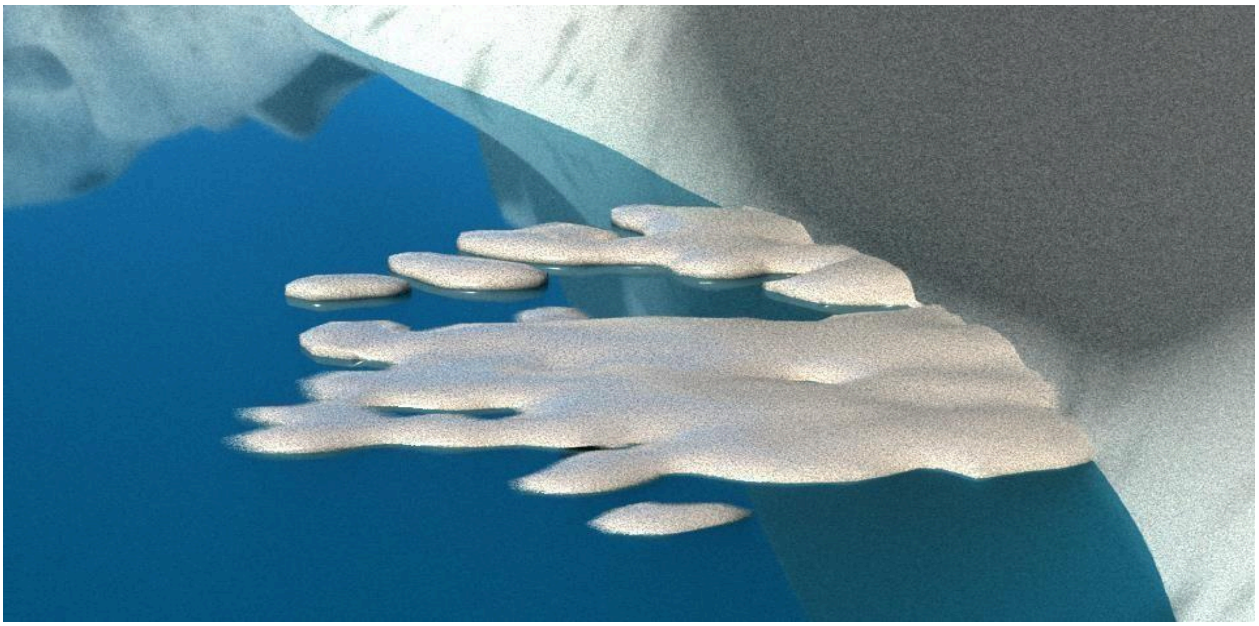

Figure 18. Snow Simulation

7.3 Post Production

This step is where you compile everything you've done so far and combine it all; it could also involve things like post-production marketing.

Camera Composition

Camera work is a crucial component of filmmaking since it establishes the cinematography and overall mood of the shot.

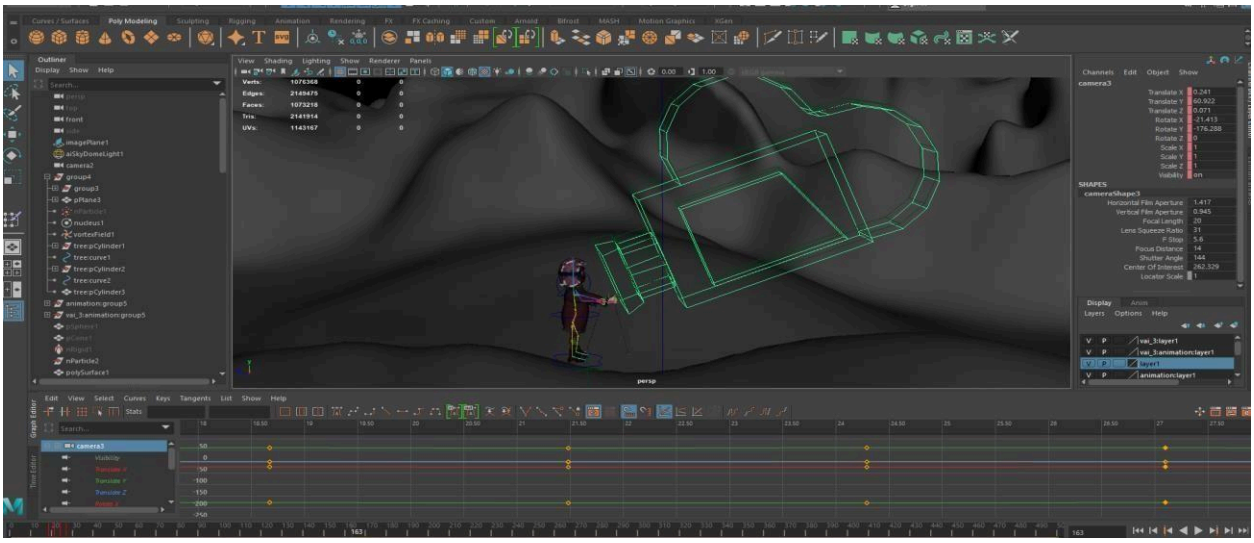

Figure 19. Camera animation with focal length adjustment

Rendering

The scene was rendered in 960x540p at PNG format because rendering at HD would take too long due to how heavy the scenes are.

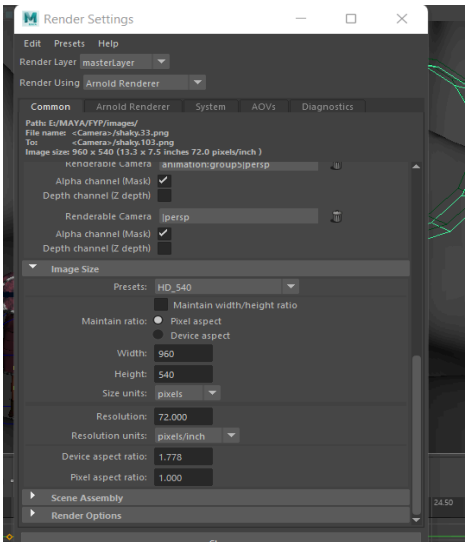

Figure 20. Render settings

Final Output

The last step is to collect all the rendered files, do a few minor edits in After Effects with some music, and then export in MP4 format.

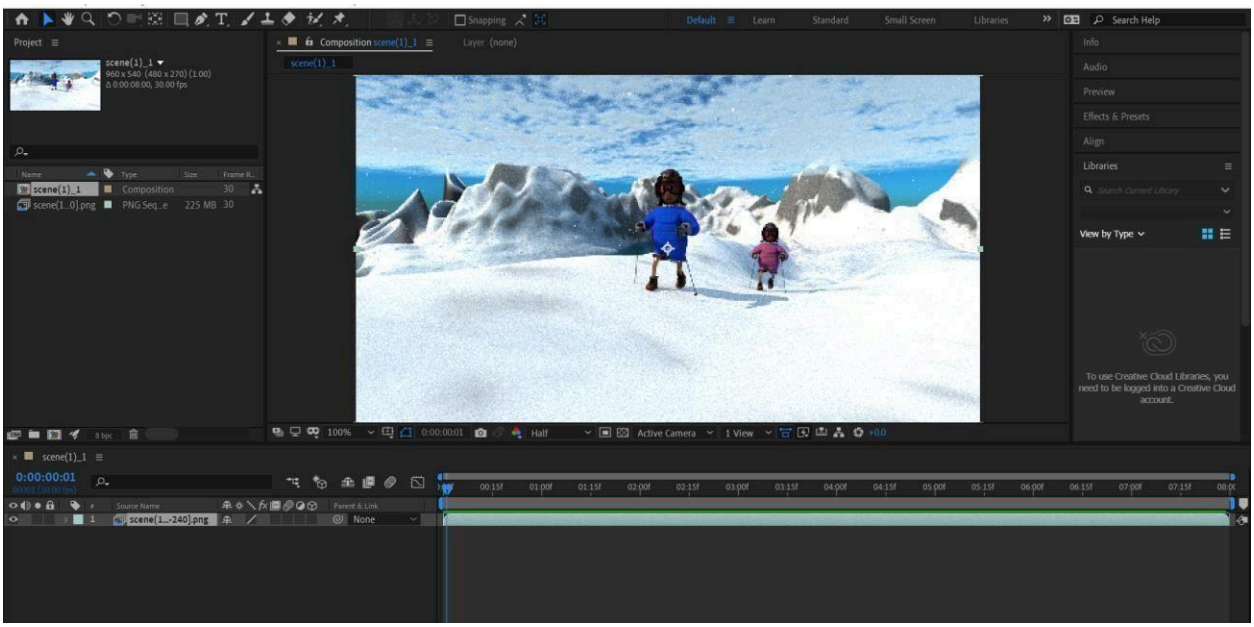

Figure 21. Compositing in after effects.

8. Technical and Resources Issues: -

There were numerous problems with this project that not only extended the production schedule but also seriously harmed my mental health. These problems ranged from worrying that the project would be subpar, which was unavoidable, to the computer crashing while I was playing a particle simulation.

Computer crashing while simulating particles

The computer crashed twice throughout the course of this project, displaying the blue screen of death. This was a major difficulty because the windows needed to be repaired and reset twice.

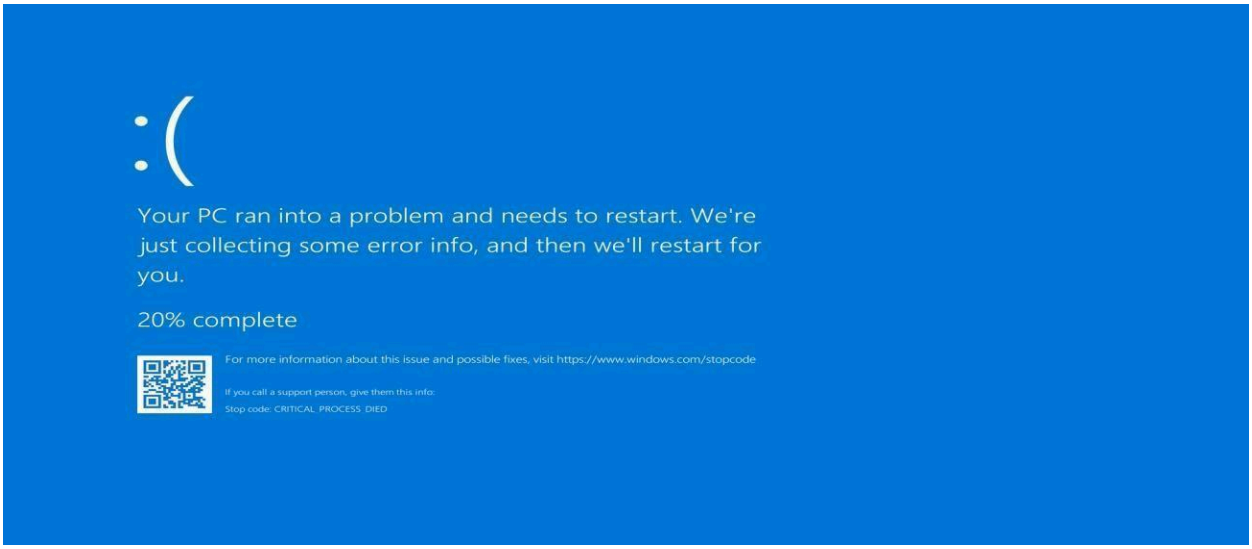

Figure 22. Blue Screen of Death

Too long to render single frame

The render time was incredibly long because to the very large files, and because of my innovative choices, all of the rendering had to be completed on a CPU. When you increase the rendering time each frame—which was roughly 4 minutes per frame—by the number of frames (700), you get 47 hours over the course of a week.

MAYA not behaving as it supposed to

When utilizing MAYA's n-rigid function to make collisions between objects, there have been times when the objects have just passed through and have collided with nothing in two distinct locations. Later, I learned from study that this occurred because the items were too small to behave as expected.

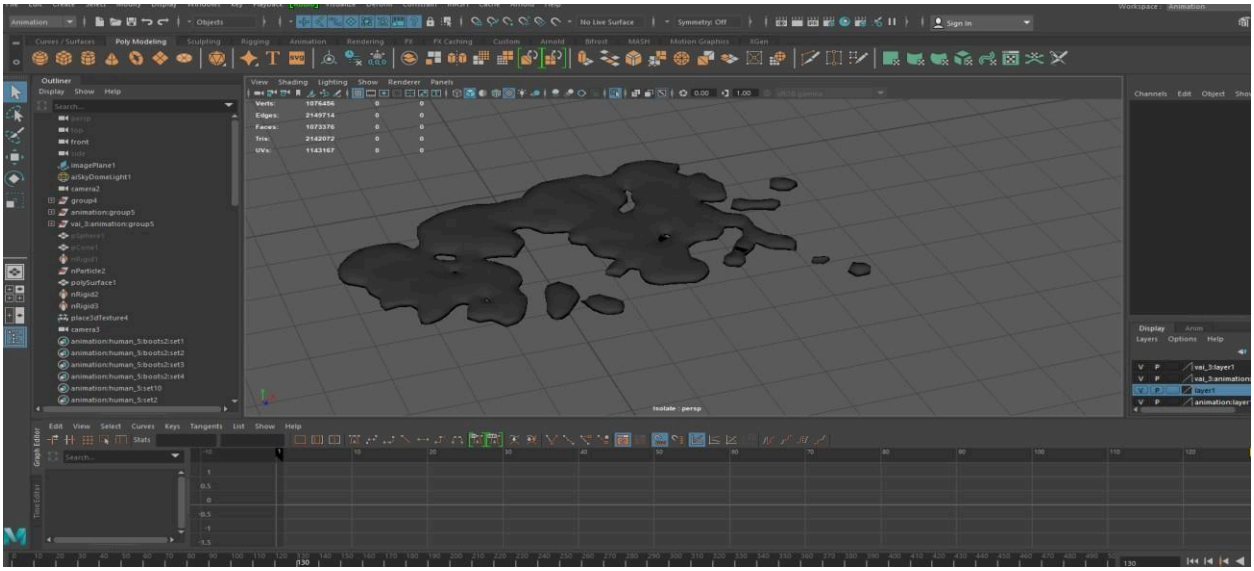

Figure 23. Simulation not behaving properly

Layered texture not showing layers

The RAMP node, which was made during the generation of the double-layered terrain texture, failed to perform as intended; this could have been a MAYA problem.

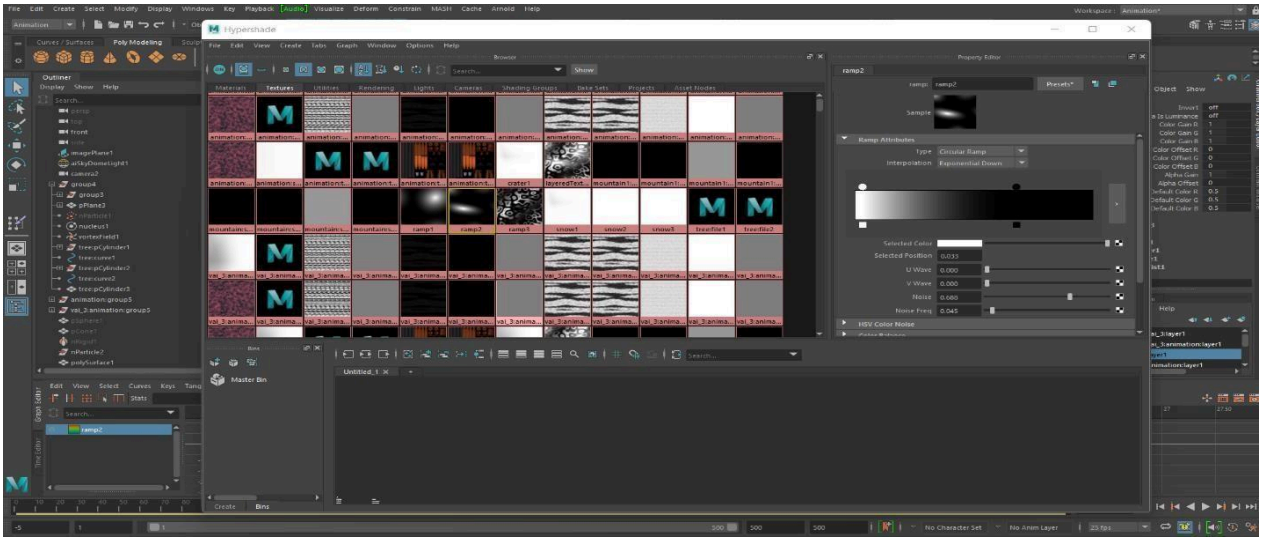

Figure 24. RAMP not working

9. User Testing and Analysis: -

Testing and Analysis are done here in two phase which are

Backend testing:

Here, every aspect of the final product's integrity is checked, including the quality of each rendered png file before composition in a picture viewer.

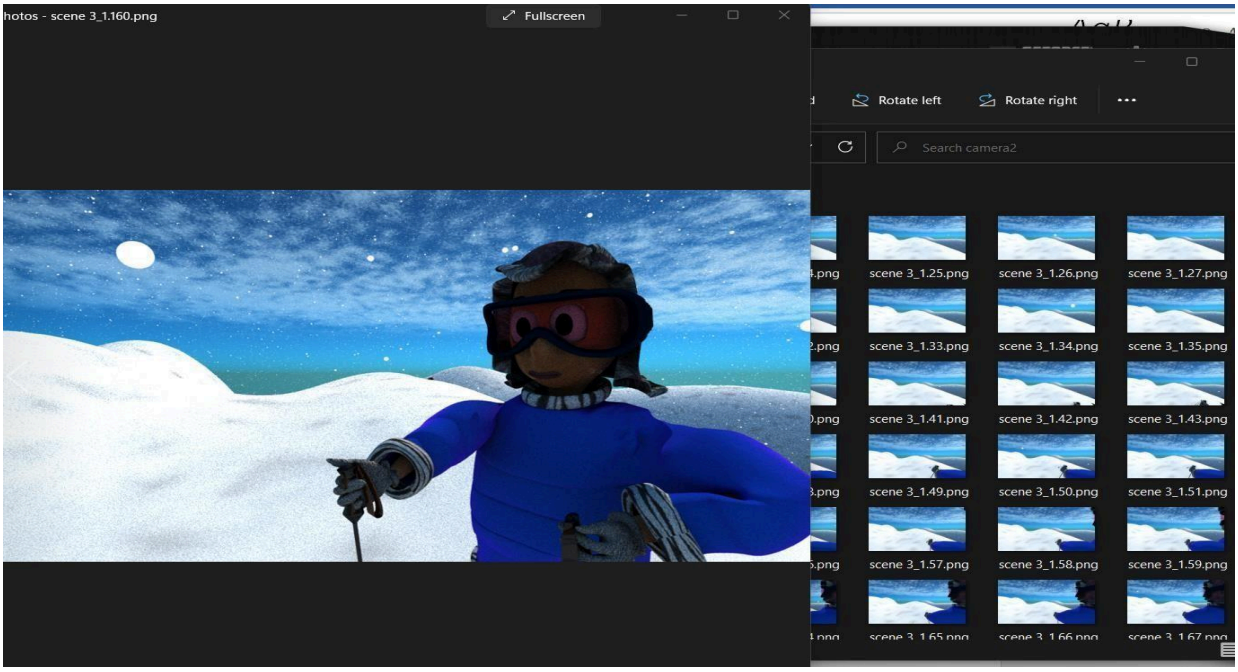

Figure 25. One by One quality check of PNG files

The next step is to examine the frame rate; because the PNG images are 25 FPS, the composition setting in composting will be tested for precisely 25 fps.

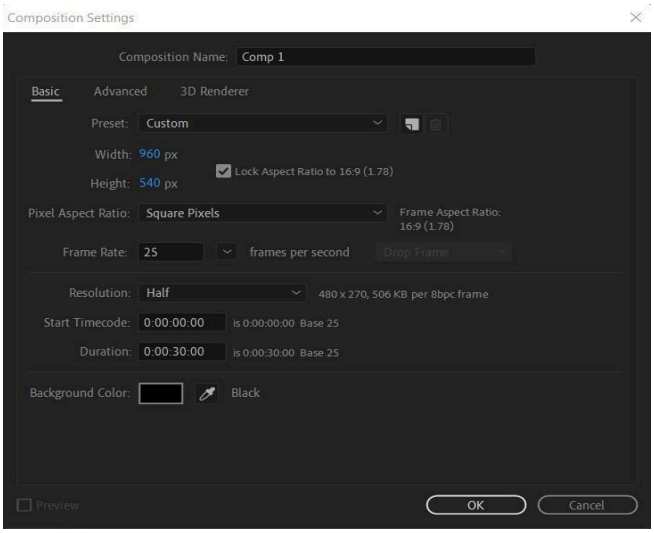

Figure 26. Composition setting in AE

Frontend test

This test is basically the reviews collected from selected few people which the final output was shown.

Name: Prabiz Basnet

Occupation: Owner of the Travel Company/Client

Review: Well done, I like this and I'm going to use it in my ad.

Name: Nitin Koirala

Occupation: Artist/ Friend

Review: All this time you've been doing this and you came up with this?

Name: Sumina Shrestha

Occupation: Writer

Review: I like the flow of the storytelling, given the right resources you can really do justice to the video. The character built up was not sufficient, but still it is an ad. I found it humorous, which is never bad.

Name: Sass Acharya

Occupation: 3d artist

Review: It is clear lots of time was used to make this video, but still it is amateur. A good team should be used in creating a project like this.

Name: Priya Thakuri

Occupation: Civil Service Employee

Review: Wow! Really good, what type of app is this? I like the logo animation and it is very funny somehow.

9. Conclusion: -

After months of hours spent in front of a computer, the project on digital media is now at an end. My 3D abilities improved greatly as a result of this project, and I thoroughly learnt about particle simulation and rendering. I am very appreciative of this project for teaching me so much about creating 3D animation. I am also appreciative of my bosses' advice.

Youtube link : *https://youtu.be/60KBcG_vDKk*

References

Anon., 2014. [Online]
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