SM6P07NI Digital Media Project

20% Research and Proposal

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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 marks of zero will be awarded.

Abstract

Starting from the early ninetieth century, animation has been a forefront of children's Entertainment. Most of the animations during those years were made with traditional methods, animations now are digital. Similar to how there have been drastic changes in terms of implementation, the output has varied as well but what still remains is the joy of witnessing something that you created, come alive. This project is a courtesy to the history of animation and how much I appreciate them. This report will contain my research on animation and the reasons as to why I chose to make an animation for my Digital Media Project

With the help of my supervisors, Rakshak sir and Pooja maam, I was able to finalize my concepts as well as my client for this project. This is a coursework based on research..

Table of Contents

Section A: Research

1 Introduction

A project's starting until its conclusion might be thought of as the beginning of a research project. A problem's evaluation is typically followed by the researcher developing a number of questions and objectives.

We were taught sketching and 2d animation during our first year of college because we belong to multimedia field. I have been excited by watching my creations animation ever since we got the opportunity to make animations during the second coursework of the Drawing module.

This is the reason why making an animation video was selected as the digital media project(DMP). We are expected to give this project our best effort because studying multimedia for the previous two years has taught us a lot.

With plans in place and expectations established, it is now necessary to prepare and present research on the particular topic to complete/finish the project, along with a few examples. With the help of the module teacher, I'm prepared to do my best in this project with all the effort.

2 Research Process

Starting a project requires research since it is important to become familiar with the numerous principles, theories, and articles related to the project's required topic.

Similar to how the researcher's list of potential research subjects and arrangement of those ideas in a diagram before beginning the project illustrates the search technique they employed.

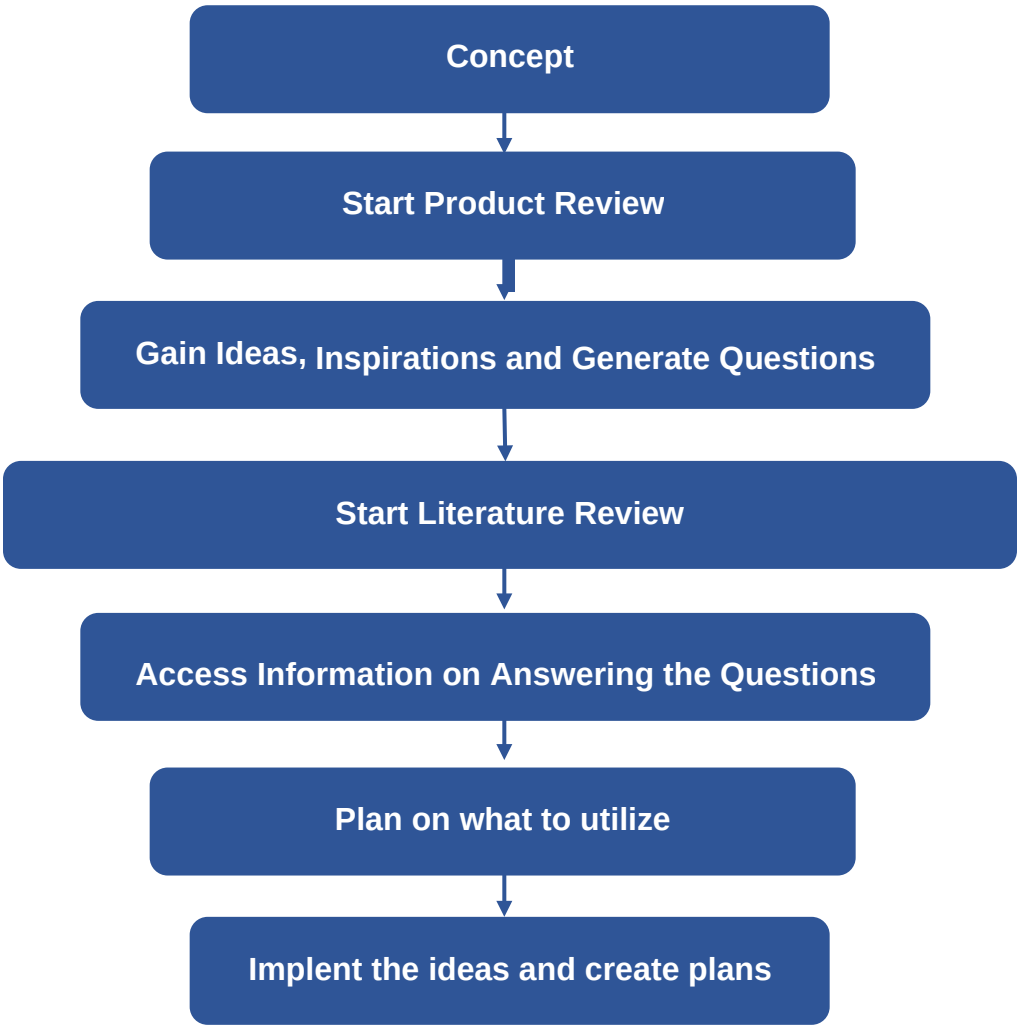


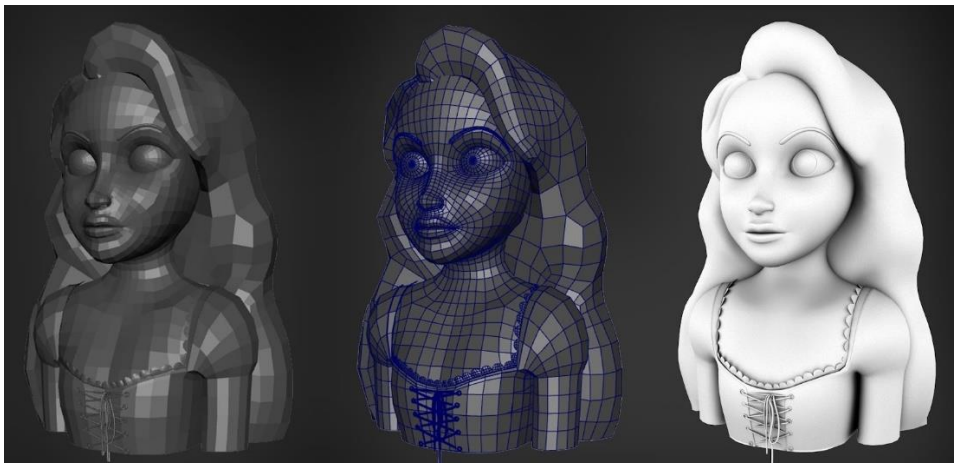
Figure SEQ Figure Figure 1: Example of a research process ARABIC 1: Research process that I*

3 Literature Review

For this project, it is necessary to review and research a number of animation-related principles as well as a number of animation techniques and also the 3D animation software that can be used for the digital media project.

3.1.1 3D Animation

3D animation is the technique of modeling and animating people or environments in a three-dimensional space using 3D design tools like Autodesk Maya, Blender, etc.



3.2 Sculpting vs Modeling.

1. Sculpting is better for organic modeling

As you might know, organic shapes meaning anything we find in nature whether it be, animals, trees and plants, rocks, mountains, and so on are needed many creative 3D projects.

While 3D modeling is great for creating hard surfaces like buildings, weapons, furniture, vehicles, gadgets, etc. it's not the best for creating organic shapes.

Even though you can use traditional 3D modeling to that, I would say it's not going to be a wise option, and it's not going to be a smart use of your time, and effort because 3D sculpting is designed and was created in the first place to allow 3D artists to work on organic shapes.

2. They deal with a mesh differently

When you start sculpting something you are kind of morphing, shaping, extending, or cutting an already existing mesh with many thousands of polygons. While you do this you are moving, scaling, or rotating a bunch of polygons at the same time which makes the process smooth and fast.

On the other hand, modeling allows you to control individual polygons, vertices, or edges during the process of creating your 3D models, and what you create usually has to be created polygon by polygon but you can use Modifiers or addons to speed up the process.

3. 3D modeling vs sculpting in art skills

To be good as 3D sculpting artist or to create organic shapes using sculpting you will do better if youhave a background in art, or at least you need to understand and learn the fundamentals of art.

Fundamentals such as form and anatomy to be able to create realistic human beings, animals, or monsters for that matter. This knowledge is also necessary for 3D modeling but it's not needed as much because modeling, for the most part, deals with surfaces that are not as fluid as organic surfaces.

For example, someone who has never been good as an artist can create a car wheel, a house, or a weapon that looks good compared to his first attempt at sculpting.

Since my work mainly is focused on Environment I have to focus more on sculpting in my project.
Also I should be focusing on modeling for a particular model in the environment.

One of the reasons that allows sculpting to be a better medium to show your creativity while creating organic shapes whether it be creating human beings, animals, monsters, or natural scenes is the huge number of polygon count it requires to do so.

3.3 High Poly Modeling of environment.

In the real world, High Poly 3D modeling is essential when your users need photorealistic representations of objects or the ability to zoom in on specific features. This could translate into a variety of uses, where Low Poly techniques aren't sufficient.

High Poly modeling is a great solution when accuracy and visual richness are a priority and interactivity is less important.

It's also a handy technique when we have a small batch of assets to model, and the price isn't the sole factor. If you want the highest possible fidelity 3D models, maxing out on the polygon count will be worth the price.

3.4 Low Poly Modeling of environment.

The opposite applies when we think about Low Poly modeling use cases. Low polygon modeling is more suited to situations where users need to move and interact with 3D objects and where visual detail is lower down the list of priorities.

As we've seen, Low Poly models are great for situations where interactivity and speed are crucial, while High Poly models are ideal when detail is all-important. However, each project is unique, and polygon counts differ greatly based on model complexity, so it's essential to find a level of detail that works for you.

It's also vital to work with modelers who know how to use the correct modeling techniques for each situation.That's where Modeling comes in.

Workflows can be monitored in detail, and revisions can be made at will, while the costs tend to be low and the speed of work is fast.

3.5 Different aspects of 3D Texturing process

3D texturing involves many distinct aspects that differ slightly depending on a particular animator or studio's workflow. Here are some examples of what steps look like in the texturing process.

UV Mapping and Unwrapping

The initial step of the 3D texturing process is to unwrap and map your models. As soon as the final models are received, texture artists produce a UV map for every 3D object. A UV map is a flat display of a 3D model surface used to wrap textures quickly. The word "UV" alludes to the two-dimensional aspect of the procedure: letters "U" and "V" denote the 2D texture axis because the 3D model is shown in the form of letters "X," "Y," and "Z."

Lighting and Shading

The reality and appeal of an object are greatly enhanced by an accurate depiction of its general look and relationship to light. The viewer's mind may reject anything if the material or surface properties are inappropriate under the light. The shading functions control how light interacts with the two-dimensional picture that makes up the texture, which is a two-dimensional image.

Texture Mapping

The process of defining the texture, detail, and aesthetic attributes of 3D models is known as texture mapping. Examples of texture mapping techniques include bump maps, normal maps, height maps, ambient occlusion maps, refraction maps, specular maps, and others.

3.6 Examples of 3D Texturing Software

Blender

As a free to use open-source program that performs a wide range of 3D operations beyond texturing, such as rendering, rigging, motion tracking, and more, Blender is a great option for beginners wishing to enter into the field of animation. For CG artists, Blender offers a user-friendly interface, a powerful rendering engine, and all the necessary sculpting and texture tools. Because Blender is open-source and free, a sizable community is always working to improve the program and support beginning animators.

Adobe Photoshop

Photoshop is undoubtedly something we've heard of. One of the most useful tools in the Adobe Creative Suite is this one. There are a ton of helpful videos, tutorials, and courses online that may help you master the fundamentals if you're just starting out as an animator because it has been a mainstay of the business for such a long time.

Adobe Substance Painter

A more recent addition to the Adobe Creative Suite is Substance Painter. The main purpose of Substance Painter is texture modeling. With its complex masking and procedural texturing features, you can build textures that are more difficult to generate in 2D programs like Photoshop. As a result, Substance Painter has quickly become the industry's top tool for digitally painting and texturing 3D objects.

3.7 Realistic Lighting in 3D

Lighting is fundamental in any 3D project you work on. At the most basic level, it's a way of making objects visible. But cinematographers will tell you how lighting is much more.

Lighting enables you to bring mood to a piece and set the tone. It allows you to subtly manipulate the viewer to look where you want them to. It is also a way to elevate your work out of the 3D realm, giving the warmth of an oil painting or the feel of a photograph.

1. Gather multiple references

It doesn't matter how good we think our visual memory is,we don't attempt any lighting without having a good stock of reference material to work from. If we are modelling something from the real world, find photos of it that we can use.

Take our own lighting reference photos. Placing an object on a plain surface and against a plain background, light it from one direction and take your photo. Keep moving the light and photographing the result and you will soon have a comprehensive photo reference bank for where to apply highlights and shadows for different light sources.

2. Position the main light

The main light needs to be positioned well and its shadows need to explain the shape and the structure of the scene. It can additionally influence the composition by separating the positive and negative space.

3 Make lighting more natural.

Natural lighting in 3D is revolutionizing the way we view and interact with our 3D worlds. By being able to realistically simulate the effects of natural lighting such as shadows, reflections, and color, 3D environments become even more immersive and lifelike. With tools like ray tracing, developers can create realistic lighting that reacts to its environment, making for a more interactive and believable experience. Natural lighting can also be used to highlight important elements in a scene, such as objects or characters. This helps draw the viewer's attention to the most important parts of the scene and creates a more compelling story. So if you're looking to add a touch of realism to your 3D world, natural lighting is the way to go.

Section B: Project Proposal

4 Product Review

The research is of gaming environment, outdoor rocky adventurous kind of environment. So, Here are some of the products that has the kind of environment I want in my project.

4.1 GOD OF WAR.

In *God of War*, players control Kratos, a Spartan warrior who is sent by the Greek gods to kill Ares, the god of war. As the story progresses, new places is explored it gives adventurous kind of feeling. This game has natural advanced environment.

Pros:

- **The texturing is very good.**
- **The modeling is high poly.**
- **The cloud is realistic.**

Pros:

- **The fog can be reduced by a little bit.**
- **The lighting could be improved.**

4.2 The Witcher.

The Witcher is based on the same-named fantasy series by Polish author Andrzej Sapkowski, but most fans in America first met Geralt of Rivia through the video game. The Witcher trilogy, developed by CD Project Red, is one of the most successful role-playing game series of all time, with the final edition, The Witcher 3: Wild Hunt, winning a slew of Game of the Year awards.

Pros:

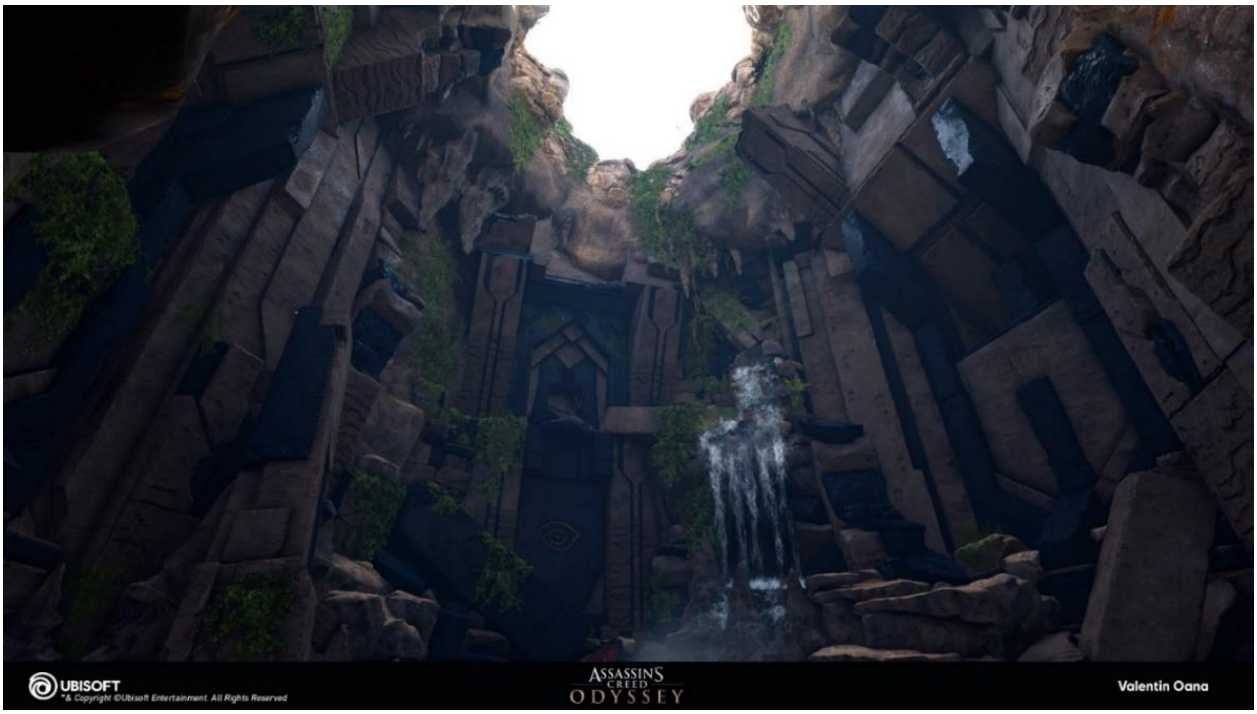
- **The hills are looking realistic with modeling.**
- **The Tree's texturing is on point.**
- **The cloud looks realistic.**

Cons:

- **The cloud is too much in quantity.**
- **The cloud is not looking good.**
- **The texture of hill can be improved.**
- **The lighting on hill can be improved.**

4.3 Assassin's Creed.

The Assassin's Creed franchise is one of those series that takes a simple concept roaming a city, that give you the feeling of year 1700 feeling.

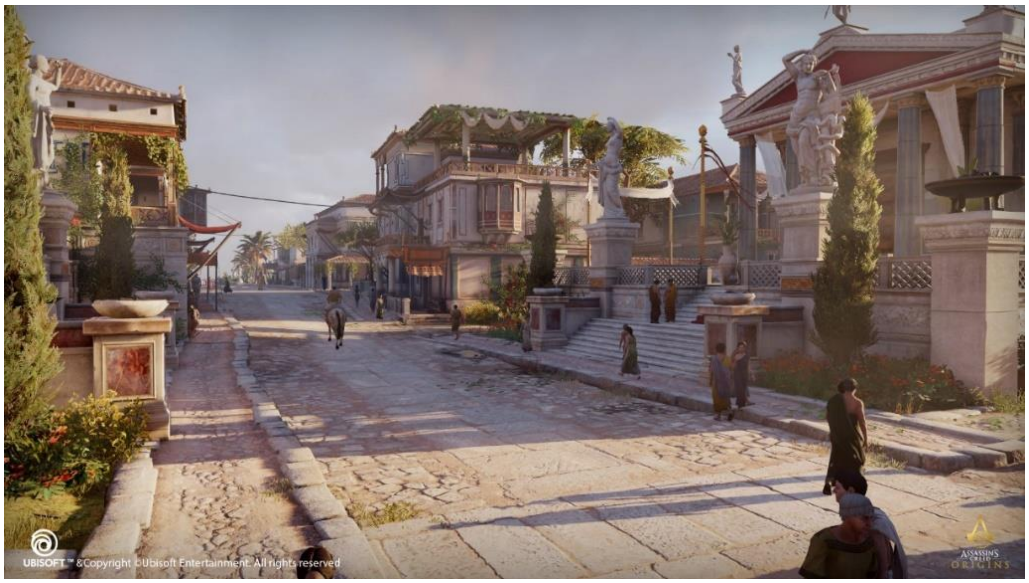


Pros:

- **The water looks realistic.**
- **The modeling is very good.**
- **The rocks looks realistic.**

Cons:

- **The texturing can be improved.**
- **The sky can be improved.**
- **The lighting can be improved.**
- **The path of water can be improved.**



A city whose road are paved with rocks and the main medium of transportation is horse.
The stone are shaped like a lamp for the fire for the night time.

Pros:

- **The Lighting is on point.**
- **The modeling of house is very good.**

Cons:

- **The texturing is very good.**
- **The cloud is not looking good.**
- **The shadow is quantity can be reduced.**

5 Summary and Conclusions

After conducting various research and reviews on 3D environment of games . I have decided that I will be modelling the environment in 3D and animating a simple thing on the environment, I will be using Maya for modeling and blender for sculpting and substance painter for texturing the gaming environment.

My main focus on this project is to design natural environment with the help of simple modeling process. With the help of Supervisors I can create a good gaming environment for this module.

I'll try to incorporate most of my research into this project. With the inspiration and ideas gained from similar animations, I aim to create a captivating animation that follows a specific style that the audience will find interesting.

Section B: Project Proposal

1 Project Title

As every project needs a name, I have decided that I will name my project. '**Adventure of the rocks.**'

I kept this name because the my coursework contains the natural environment like rocks, wooden props and bridges. There will be sound of wind blowing and some sound of nature.

The environment also consist of water and fire.
The main thing about this project is natural environment consisting of rocks and old king era type of e environment.

2 Research Question

How can I make natural environment more appealing.

To make natural environments more appealing in 3D, there are several different approaches that can be taken. The most common is to use various lighting and shading techniques to create the illusion of depth and perspective. Additionally, adding items of varying heights or textures can help create the sense of a three-dimensional landscape. Furthermore, using colored filters on certain objects or environments can create an atmosphere that is more vivid and aesthetically pleasing.

One way to make natural environments more appealing in three-dimensional spaces is to use interactive elements. Incorporating motion, sound, and visuals into the environment can create a more immersive and engaging experience. For example, artificial lights can be used to simulate the movement of the sun and the stars. Additionally, adding sound effects to the environment can add to the realism of the experience.

Treatment

I want anyone who see my project to have a clear grasp of how natural 3D environment looks like. They should understand that how 3D gaming environment should look like as imaginative.

making 3D environment for game with interesting backdrops, lighting, and shading. I hope they acknowledge the artist's efforts to make their game entertaining and fun. With enthusiasm, we can make any environment great.

The audience should enjoy what they see and maybe gain a greater understanding and appreciation of animations and animators as a result of the work that has been done into this project.

Target audience.

4 Resources

This project will be completed with the help of several resources, which I will use to complete it. The majority of the resources I'll be using for this animation are mentioned below.

Devices and Hardware

- Laptop (Lenovo Legion 5)

Software

- Adobe After Effects
- Adobe Premiere Pro
- Autodesk Maya
- Substance Painter
- Blender

Distribution Platform

- YouTube
- Google Drive

- **Gantt Chart**

5 Contribution of Others

I am grateful to Pooja ma’am and Rakshak sir, for assistance with this project in order to get ideas and thoughts for the animation. Her story guidelines served as my model while I wrote the project's script and storyboard.

I am looking forward to my supervisors for more help in the future.

6 Evaluation & Testing

Both of my supervisors will evaluate this project. The supervisors will confirm that the project satisfies the evaluation requirements and let me know if anything looks out of the ordinary.

I've been working on this project in accordance with my supervisor instructions, and they have been giving me feedback whenever something seems to be missing or doesn't live up to her standards.

Additionally, I'll show the finished piece to my friends and cousins and get their opinions, suggestions, and criticisms. The project will then be improved in accordance with all of their suggestions.

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