

Interactive Digital Art and Design

Project Report

Year IV

[Ross Walker Burke]

[C00249184]

[29/5/2023]

**Contents**

[Acknowledgements 2](#_Toc387662615)

[Project Abstract 3](#_Toc387662616)

[Project Introduction 4](#_Toc387662617)

[Background 5](#_Toc387662618)

[Feasibility Study 6](#_Toc387662619)

[Requirements Analysis 7](#_Toc387662620)

[Project Milestones 8](#_Toc387662621)

[Research 9](#_Toc387662622)

[Project Description 10](#_Toc387662623)

[Conclusions 11](#_Toc387662624)

[References 12](#_Toc387662625)

# Acknowledgements

I would like to thank the following people who assisted or gave advice in completing this project including;

My supervisor: Roxanne Burchartz

My lectures: Philip Bourke, Anita Dice, Colm O’Neill

My class mates, friends and family for the emotional support through the FYP’s duration.

# Project Abstract

Due to this year being the first 4th year we were asked to come up with a project idea. I had thought on the problem of people not having a turntable like space to show of or display their made model to show a model’s quality to others by having it do animations of movements it would do depending on what the model is.

The idea was for users to interact while the owner get feed back on their model this would allow for evaluation and testing of the model in a game like environment this also is to show of that the model owner can do modelling and texturing very well or to a desired quality an employer might want. It was to be a portfolio piece playground for 3d model or a testing grounds for experienced modelers.

The solution was clear to create an environment that was interactable so user could interact and view a model made for it. Due to figuring out a person who would want something like this I targeted myself as the main user who would want this for their 3d made model to use as a portfolio display piece testing area for a model.

# Project Introduction

# My project is a 3D turntable for a model so I can demonstrate that I can script a turntable design the functions and model as well as draw and model a 3d character for the turntable.

This is to encompass Art, Programming and Design. Three area I’m being thought by my course.

I will be creating an environment where a 3D model /asset will sit for inspection or to see that I can produce a 3d model of desirable quality.

My character I’m modelling is a knight adventurer. He will sit on a brick stone base which will be his stand for the turntable and have a grass field environment around him.

My project will need to be able to be interacted with so I will need to script/programme functions to allow users to rotate and zoom on the character as he stands in place so the user can view or inspect him.

# Background

# I will be using Maya a 3D modelling software that allows modelling and UV mapping of the model as well as rigging, rendering and animating. Scripting can be done in Maya but I will be scripting in a different software. I’m also aware Maya is more company friendly as some business use it as their modelling tool.

I will be using Blender with Armoury 3D a plugin for blender that turns it into a mini game engine to allow game like application builds of work. Scripting can be done in both to allow for programming interactive functions to the application. In blender there is modelling and rigging as well as rendering and video editing.

Visual studio code this will allow me to programme and script in a more programmer friendly environment as the software Is a programming tool that aids with code languages and coding.

Substance is a Tool that will allow me paint on the model and UV map to paint or apply materials to the model in a more painter environment. The software allows me to use texture maps from exported FBX or OBJ 3D model files and baked layered maps to apply a in depth texture to my model.

Procreate (apple tablet), Photoshop(desktop) are drawing software’s that allow me to digitally draw my temples 360 view and concept arts of my character. They are better to use with a digital pen then mouse or touch screen

# Feasibility Study

# My project can be used where animators or 3D models can use their made or gotten model in a turntable game sandbox that can allow those users to view or play with their model to check for issues see inf its seamless or does it work. As they can apply different animation the it the can pause the animation to check warping or distortion they get to also put it into an environment and see it in an environment as well as interact via animations.

# This can be desired in animation studies and game studios. But it is more targeted on a video games studio environment. As the project acts as a little playground to check animations to see the model correctly move and animate.

# I know a indie game artist who might be interest ed in my work if I brought to them.Requirements Analysis

# Requirements to make this project: I need to know programming languages such as JS, python and Haxe.

# I need to have an understanding in how to model using Maya and I need to know how to use substance and blender.

I needed to know how to model in Maya using it, use UV texture maps, how to model shapes into desired shapes. How to utilise its tools to help create a model.

I need to know how to use blender with its scripts, nodes and tools

# It’s required to learn Armoury 3D and how it functions as it a core part of creating builds for the project end output.

# I would require a desktop machine to create my project without it I would be incapable from making my project piece. Project Milestones

# Key deliverables:

# Art -

# I must deliver a god quality 3D model that is textured and rigged.

# I must have sketches of the designing of the model through art and sketches I did when first making the model.

# Programming -

# Use Armory 3d to create my application that my model will be in by using armoury 3D.

# To create the application, I must programme my functions of what I want my turntable to do.

# Design -

# how a user interacts with the turntable application

# How my model is meant to look and come together when modelling

**Documents –**

Documentation of work and research

# Anything else is extra functionalityResearch

# I research turntables and how their meant to function they’re meant to be a display of a model and inspector to allow people to play and check out the model or art piece much like a child looking at a new toy.

Its to show of the quality of a model’s viewers of the model on its turntable will come to their own evaluations when viewing it.

It also used for people or machines to scan a 3d object. To create other files or models copies.

# Digitally turntables are used to show of video game models or 3d assets for games, animations to make sure the model won’t have issues or is functional for the scene or application they’d be used in. naturally 3D object are view in 3d viewer on desktops. Other 3D displays may be in modelling application or programmers testing the model in their games or animators seeing how the model animates.

# From searching there really isn’t a sandbox or turntable playground for 3d models without the person creating it or had to create it in the past if experienced there isn’t just free space that all can use.

# Project Description

My project was to create a turntable display for a model. I was to have a application that anyone could open and interact with. It would display my model and users could interact using the keyboard and mouse. It was to rotate the model and zoom to allow users to inspect the model as intended and run through animations to all them to see the model is functional and not poorly modelled.

This was to show of my ability to both program and model the environment of my turntable as well as design the model and how user interact encompassing all aspects of IDAD (Interactive Digital Art & Design)

My turntable space could be used by other companies or models that want to test their model in a more game environment due to using Armoury 3D, which turns blender into a mini game engine.

My finished piece is my model displayed and interactable within the application window. It is interactable using the A and D keys to rotate left and right. It is able to zoom with the scroll of the mouse as well. It was meant to have animations in it but I had to render them due to issues with armoury 3D but they are still there to show it was to be apart of the project’s finished piece

# Conclusions

Project Conclusions.

Critical analysis: I know if I had more time I would have had more time I would have been able to produce I more functional turntable as I rang short on time to get to programme the extra scripts to allow rigs and particle effects to run in armoury’s output builds.

I know if I had more confidence in what I was doing I didn’t change or alternate due to opinions and advice I might have had my project in a more complete finish.

I was better at doing the art side of the project but it was still just as time consuming due to making sur the model was functional as well as stitching errors I had to fix due to symmetry or mesh changes or additions. But it wasn’t bad.

I know I was stuck trying to figure out the programming of my project. I had struggled to figure out where to start and how to output an application of a 3D project as well as how to go about programme or what to use to do it. If I had found Armory 3D earlier and stuck my head into it as much as I could I know I could have avoided a few issues I ran into. Such as the rigging not working in armoury.

In the end result due to the changing of my project as well as the year being extra difficult for no reason and medical issues, I am happy with my unpolished end piece due to the hard effort and work I put in for it wasn’t easy to produce a year project piece within a month and a half. If I had been more stubborn and confident in my work and wasn’t looking for validation or opinion of my project as much as I did I may have not had as much problems as I did through the year project.

Though if I could do it all again I know I could produce a finished piece of my project know that I’ve learned from the struggles, mistakes and hardships of the project piece as I would know to start with my programming get that done and the rest should all fall into place from there as I know how to program my more experienced area would be in the art so I’d get the hard part done with and the rest should work out better.

# References

**Web-site**

<https://discover.therookies.co/2022/04/28/create-a-character-turntable-for-your-3d-portfolio-that-will-impress-recruiters/>

<https://www.youtube.com/watch?v=2C9P_E65T2o>