

**FINAL YEAR PROJECT**  
**“FIGHT FOR SURVIVAL”**

**BY**

**MD. Saiful Islam**

**ID: 142-40-137**

This Report Presented in Partial Fulfillment of the Requirements for the Degree of  
Bachelor of Science in Multimedia and Creative Technology

Supervised By

**Mr. Arif Ahmed**

Associate Professor

Department of MCT

Daffodil International University



**DAFFODIL INTERNATIONAL UNIVERSITY**

**DHAKA, BANGLADESH**

**APPROVAL**

This Project titled “**Fight for Survival**” submitted by Md. Saiful Islam to the Department of Multimedia and Creative Technology, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Multimedia and Creative Technology and approved as to its style and contents. The presentation has been held on 26<sup>th</sup> July 2018.

### **BOARD OF EXAMINERS**




**Dr. Shaikh Muhammad Allayear** Chairman  
**Head of the Department**  
Department of MCT  
Faculty of Science & Information Technology  
Daffodil International University



**Mr. Arif Ahmed**  
**Associate Professor**  
Department of MCT  
Faculty of Science & Information Technology  
Daffodil International University

**Internal Examiner**



**Mr. Md. Samaun Hasan**  
**Lecturer**  
Department of MCT  
Faculty of Science & Information Technology  
Daffodil International University

**Internal Examiner**



**Professor Dr. Mohammad Zahidur Rahman**  
**Professor**  
Department of Computer Science and Engineering  
Jahangirnagar University

**External Examiner**

## DECLARATION

I hereby declare that, this project has been done by me under the supervision of **Mr. Arif Ahmed, Associate Professor, Department of MCT** Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

**Supervised by:**

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**Mr. Arif Ahmed**

Associate Professor

Department of MCT

Daffodil International University

**Submitted by:**

---

**MD. Saiful Islam**

ID: 142-40-137

Department of MCT

Daffodil International University

## ACKNOWLEDGEMENT

First, I express my heartiest thanks and gratefulness to almighty God for His divine blessing makes me possible to complete the final year project successfully.

I really grateful and wish our profound our indebtedness to **Mr. Arif Ahmed, Associate Professor**, Department of MCT Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of “Animation” to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior draft and correcting them at all stage have made it possible to complete this project.

I would like to express my heartiest gratitude to Prof. Dr. Md. Kabirul Islam, Arif Ahmed sir, and Head, Department of MCT, for his kind help to finish my project and also to other faculty member and the staff of MCT department of Daffodil International University.

I would like to thank my entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, I must acknowledge with due respect the constant support and patients of my parents.



## ABSTRACT

I made a third person shooter game “Fight For Survival” in my final project. My aim here is to submit a complete game for my final project. My aim is here to submit this game as my final project. This is a start work which I plan to work with in future also. Game industries are not well known or established in my country like Europe or America. As My childhood I spend my time playing video game. My lots of childhood memories are connected to it. I learn so much knowledge from here and because of game I chose to study multimedia and creative technology in Daffodil International University. My previous works are 2D animation, 3D modeling, 3D animation and game development based. I like 3D modeling, animation and game development. I work on Unity engine in my 9th and 10th semester final. I made Aircraft Fight game and car Race game before. Also, I work about 3D modeling which I build in Autodesk Maya 2015 software. I Thought I should use my previous experience in my final project. I use my previous build model in this project.

This game is very basic third person shooter game. The player can ride car, tank and helicopter. The player also can swim. When the player touches the water then player will convert into the first-person mode. When he gets out of the water then the camera mode automatically will convert into third person. Same thing goes for the vehicles. When the player goes into any vehicles then camera goes into first person mode. If anybody wants they can change the mode easily into third person mode. The main objective of the game is to find out treasure and free some friends. For this, player has to complete 3 levels. The player can complete each level to kill enemy, collect intel and collect quest. If the player can kill all enemy, collect all intel and quest then the player automatically transfers into the next level

I use unreal engine 4.19.2 to build this game. In additional software I use Autodesk Maya-2015, Adobe Photoshop, Adobe After Effects, Adobe Fuse, Adobe Illustrator. My view in here to build a very basic third person game in so people can play it like this way. I use my previous made 3D model in this game. I start here how first I made my all object 3D Model and then how I texture it prepare it for my game then how I bring in to unreal engine, coding and blueprint work there and complete the game My future plan of this project is I will work farther about this game and make the game like GTA V. I was very much inspired by GTA game series. I want to reach the level so I can compare my work to like GTA game. I have plan to work for that

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# CHAPTER 1: INTRODUCTION

## 1.1 Introduction

This is “Fight For Survival” is a third person shooter three dimensional game. In this game player can do whatever a third person character can do. This is an open world game so player can walk, run, swim, ride car, tank, helicopter etc. Here player can take up arms, shoot at enemy, kill enemy, collect information etc. If the enemy shoots at a player, then it will lose health and if player lose all health then player will die eventually. Player can collect his health and gain strength so he can play further more. The player can go left, Right, Walk, Run, Shoot, crouch, idle, collect to complete his adventure at the end of each level. There will be no limited time to finish the game. There is a very nice landscape in the game. Player Can move using W, S, A, D keyboard key to move Forward, Backward, Left and Right, Player Can Pick up gun using ‘F’ key, Player can fire gun press mouse left button, Player can drop gun press ‘G’. Player can reload game using ‘R’ key, Enemy will be alert if enemy see the player. Enemy will fire at player if player shoot the enemy Here player also can discover the whole area and roaming around here and there. Player can enjoy the outside landscape. The player can ride car, tank and helicopter. The player also can swim. When the player touches the water then player will convert into the first-person mode. When he gets out of the water then the camera mode automatically will convert into third person

I try to make this game just like other 3rd person open world game like GTA, Farcry, Assassin Creed, Vice city, Just Cause etc. I build my player so the player can do such thing just like we real human do in this world. I try very hard to do so and I will work with this project in future. The main objective of the game is to find out treasure and free some friends. For this, player has to complete 3 levels. The player can complete each level to kill enemy, collect intel and collect quest. If the player can kill all enemy, collect all intel and quest then the player automatically transfers into the next level

I use unreal engine to build this game. In additional software I use Autodesk Maya-2015, Adobe Photoshop, Adobe After Effects, Adobe Fuse, Adobe Illustrator. My want to build very basic

third person game so people enjoy it as a proper third person game. First I made my all object 3D Model and then how I texture it prepare it for my game then how I bring in to unreal engine,coding and blueprint work there and complete the game. Here I mention many software which I used for complete my task here. For completing this project I get help from unreal engine learning site and YouTube

## 1.2 Motivation

As I said before I inspire heavily by other 3rd person open world game such as GTA-III, GTA-San Andreas, Farcry, Assassin Creed, Vice city, Just Cause, GTA-IV, GTA-V, Mafia-1, Mafia-2, Godfather etc. As my childhood I play those games and I inspire by those game. So my motivation here to build a game likes this. My future plan work more in this project and build more professional game. For this I have to build up my skill level here so my work output will be professional.



Figure 1: Example of a third person game

Here I focus to build up a nice and realistic graphic so that it look like more real and like those professional games. Most of people like it if graphic quality looks good. This is the main reason I chose unreal engine to work with my project. Unreal engine can show more realistic graphics and look than other game engine and this engine is free to download

### 1.3 Objectives

My objective here to build up a third person opens world shooter game. As I said before I focus to build up a nice and realistic graphic game her. Most of the people like the game if game graphic quality looks good. Unreal engine is capable to output good graphic quality with good quality environment



Figure 2: Example of unreal game outlook

Fir building this game I use my entire 3d model or I build my own 3d model so that I can use those in my game. My mission here is to skill up my work here so I can complete my University project. I wanted to submit my own entire project in here so I can use all of this in my future portfolio and my other work

## **CHAPTER 2: GAME DEVELOPMENT FUTURE**

## 2.1 Introduction

Game Development has very bright future in the world. Mobile gaming is an industry that has changed itself many circumstances over and keeps on doing as such. Through expanded visuals, gaming has turned out to be considerably more appealing to the client. Truth be told, numerous engineers have changed from utilizing CPU's to GPU's which takes into consideration more noteworthy visual handling power. Gaming Development is certainly on the ascent. More up to date and better advancements are making game development a significantly more fascinating field to work in.

There are in all 3 types in game development are, Artists, programmers & designers. I learn design and programing in my university so it is very easy for me to work here. Game developers work at the back end of the game, which means they handle the technical side, whereas artists focus on designing & innovative ideas for the game to be developed.



Figure 3: Group of Game Developer

It is still backward game development industry in this region But word wide it's demand very high. The demand for game development will increase day by day as it is the main time pass for the people of all ages. There is no recession in this field, as it will be required every time. Moral of the story is Game development is always in demand profession with a high pay scale



The game industry is going to be bigger, messy and hard to find. We can't define how big is it and going to be. Mobile gaming is an industry that has changed itself many circumstances over and keeps on doing as such. Through expanded visuals, gaming has turned out to be considerably more appealing to the client. Truth be told, numerous engineers have changed from utilizing CPUs to GPUs which takes into consideration more noteworthy visual handling power.



Figure 4: People enjoy mobile game

Gaming Development is certainly on the ascent. More up to date and better advancements are making game development a significantly more fascinating field to work in. There are in all 3 types in game development are, Artists, programmers & designers. Game developers work at the back end of the game, which means they handle the technical side, whereas artists focus on designing & innovative ideas for the game to be developed.

## 2.2 Bangladesh

Bangladesh has indeed a good future for game development. Recently Bangladesh govt give 500 crore take for game development. There are several game development farm grow up here. There are also several Bangladeshi made game releases here. Group of people made many game here

There is some game made by Bangladeshi people. For example Hero's of '71, Hatirjheel, War 1971 game for PC or windows version. There are also many games made for mobile version like Mukti camp, BattleRange. Recently Grameenphoon Release 2 game also.



Figure 5: Bangladeshi made Android game

There is very good possibly for game industries in Bangladesh. Bangladeshi gamers increase day by day

### 2.3 South Asia

Gaming Industry in south Asia are booming recently. Specially in India gaming industry growing rapidly. There is very much chance to job in Indian market

The Indian digital gaming industry is growing rapidly, with behemoths like Alibaba backed-Paytm, Tencent, Youzu and Nazara investing in it. One of the top five countries for mobile gaming in the world, the industry is already worth over \$890 million. And with the demand for games on an upward curve, the country now has more than 250 game development companies, up from a mere 25 in 2010, with at least two startups coming up every month



Figure 6: Indian game Market

Like China and South Korea, India is experiencing strong growth in online gaming. With between 35 and 50 million Internet users, the country is attracting interest from the online video game industry, which is difficult to hack

## 2.4 Outside World



There is a very huge market for game industry in outside world. Especially in Europe and America. There is also very big game market in Asia like China, Japan, Korea and south East Asian countries. Korean and Japanese are very hardcore online game addicted



Figure 7: Asian game Market

The computer and video game industry has grown from focused markets to mainstream. They took in about US\$9.5 billion in the US in 2007, 11.7 billion in 2008, and 25.1 billion in 2010

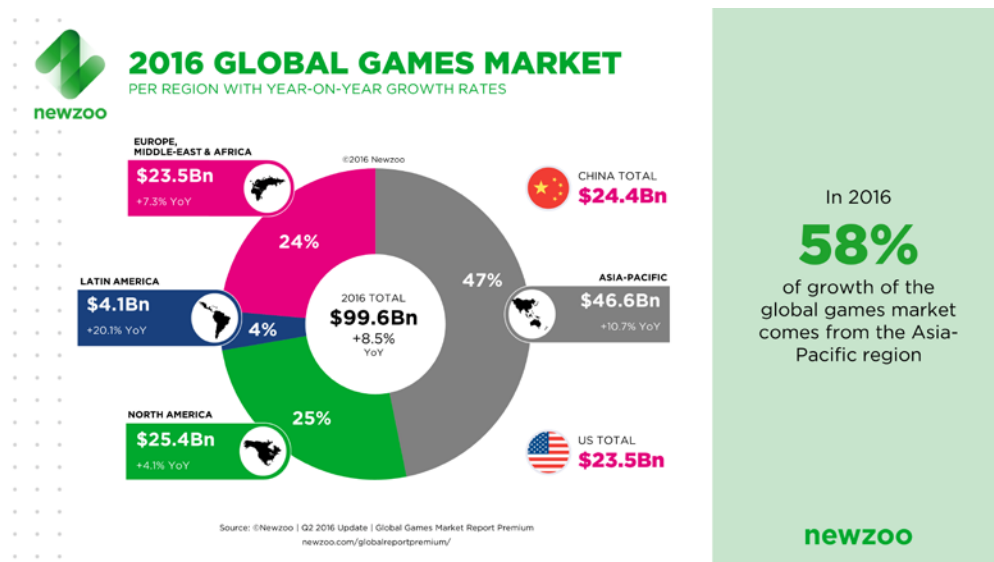


Figure 8: World game Market

### CHAPTER 3: WORK PROCESS

### 3.1 Introduction

For working and building my game I make a list to what do I need to go before I start my game. So I make a list about it. I first prepare my entire model list what I need. I have previous model some and I made some other extra model for my game. I created my entire model in Autodesk Maya 2015. I try to use my Maya created model in this game but unfortunately I failed. So I use Adobe Fuse model in this game

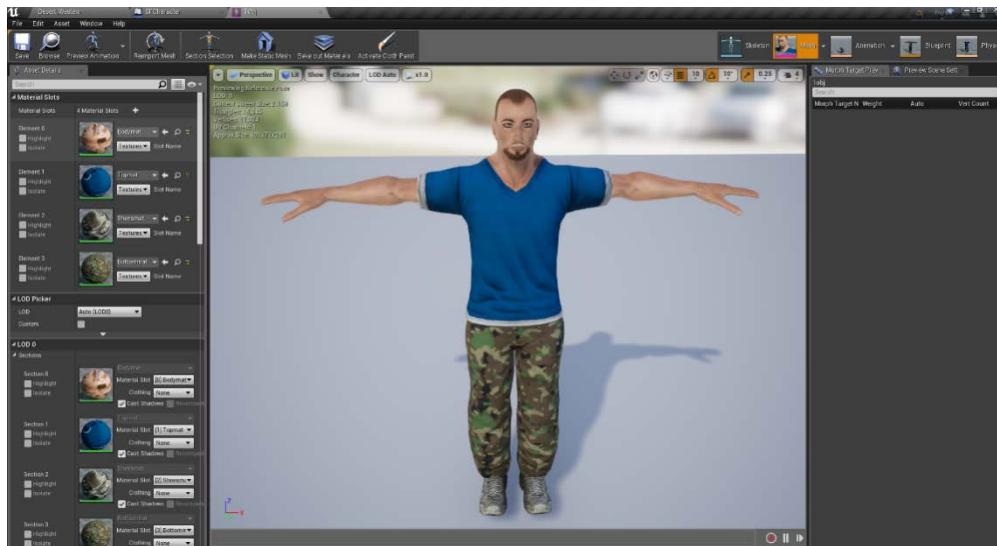


Figure 9: Adobe Fuse Model

This is very easy software to make a 3D character into this and totally rigged for animation. There is already made game ready rigged for this character. I use Mixamo website to animate this character. For use the website I need to create my account there first then I upload my model there and follow the instruction. Then I complete my all character animation in there

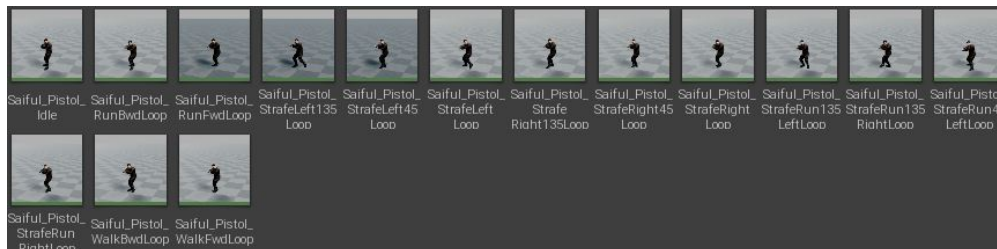


Figure 10: Animated Model

### 3.2 3D Model Development

As I said before I created my entire 3d asset model into Autodesk Maya-2015 software. All of gun which I used in this game made by me. I made UV map all of this model and I use only 1 game read material for the model



Figure 11: My made AK-47 Model



Figure 12: UV Map of AK-47

I made both low poly model and high poly model for my every model



Figure 13: Low poly AK-47

### 3.3 Make Animation

As I said before I use Mixamo website for animate my Player character. This website is very easy to use

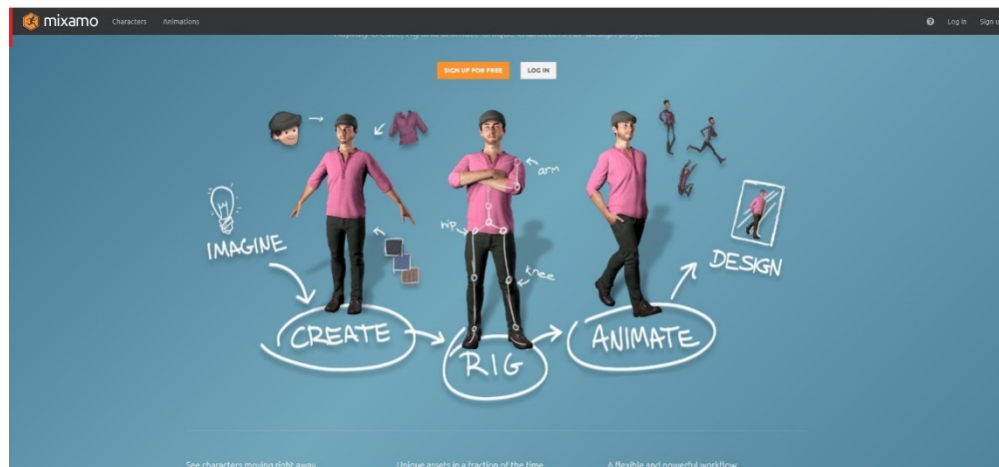


Figure 14: Mixamo Animation web site

### 3.4 Work in Unreal Engine

It is very amazing experience to work in unreal engine. Everything in this engine is new for me. But there is many thing common in here like unity engine. I get lot of help from the unreal official site. Also I collect much information from various web site and you tube.

All of this helps me very much for build up my game in unreal engine. I use various version of unreal engine for making up my game. First of all I use unreal engine 4.17.2 version to make my game. Later I use 4.18 and last I use unreal 4.19.2 version for make this game

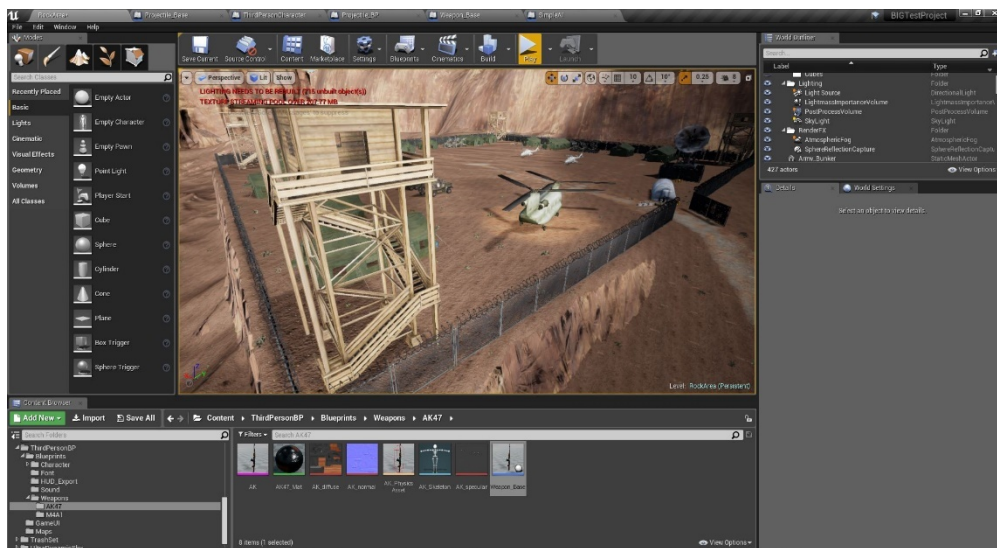


Figure 15: A Full view of Unreal engine

Using unreal engine is a very good experience for me because I learn a lot of thing new here. The most good thing about unreal engine is it's Free so newly come developers can use it for their benefit making new games. It's very hard for new comer who doesn't have money to buy any kind of game engine. For them unreal engine made up very easy to use

For using unreal engine, I have to first download Epic game launcher. Then by this I can use to install unreal engine and open up to my project



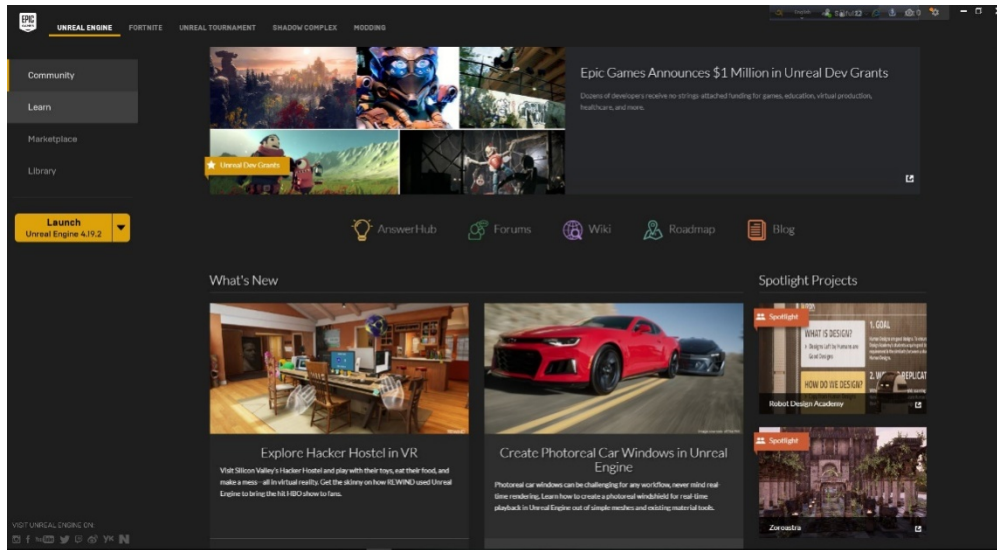


Figure 16: Opening view of Epic Game launcher

### 3.5 Import Animation in Unreal Engine 4

This is very easy to import animation into unreal engine. For this I have to first import my mesh character into unreal engine. We have to import mesh as a static mesh or skeletal mesh. Static mesh for object and skeletal mesh for character

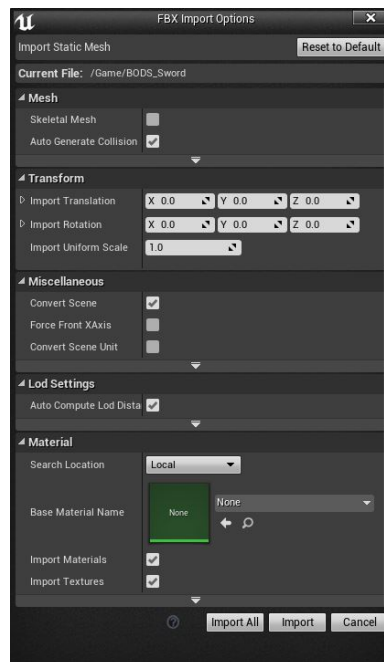


Figure 17: Import Option

### 3.6 Work in Autodesk Maya

It is always very nice to work in Autodesk Maya. I use this software to build my 3D model. I find this software interface very easy and user friendly for me. My game most of game model are built in here. I also use some asset in my landscape environment

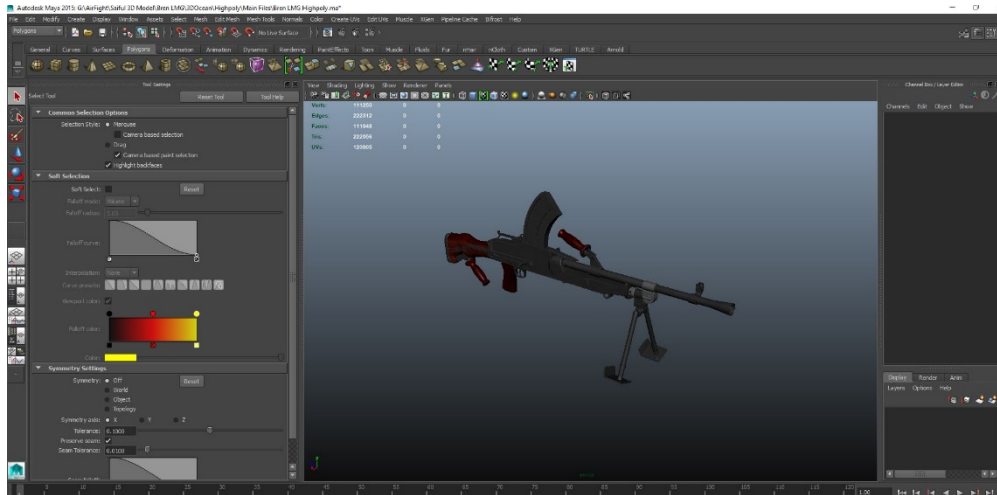


Figure 18: Autodesk Maya 2015 interface

For building any kind of hard surface 3d model I will use Autodesk Maya software I think if the better software did not come.

I full made my 3d model in Autodesk Maya and also I made my model UV map into Maya UV map editor

### 3.7 Work in Adobe Fuse

I create my Player character in Adobe Fuse software.

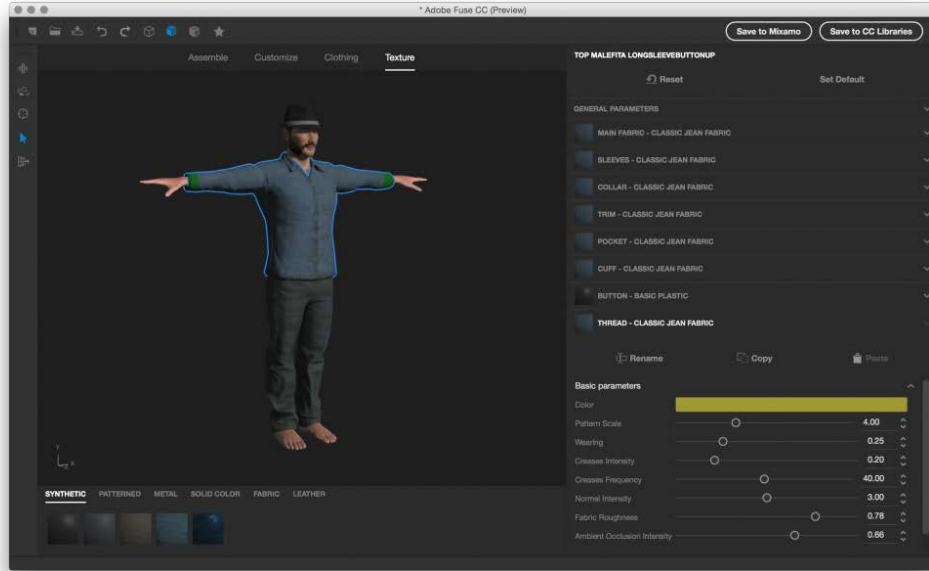


Figure 19: Adobe Fuse interface

Creating 3D character in this software is very easy and useful. I can use this character many place in want. I can use the character in unity engine, unreal engine and any kind of animation engine I want

It helps me a lot for creating my final project. All of my character, enemy, player and other character I made here



### 3.8 Work in Adobe Photoshop

I mainly use Adobe Photoshop for my texturing in Final project. Mostly I use any correction of my texture or if I add anything else in my texture or any kind of Bangla text into my texture. For this kind of purpose Adobe Photoshop is one of the best software I use

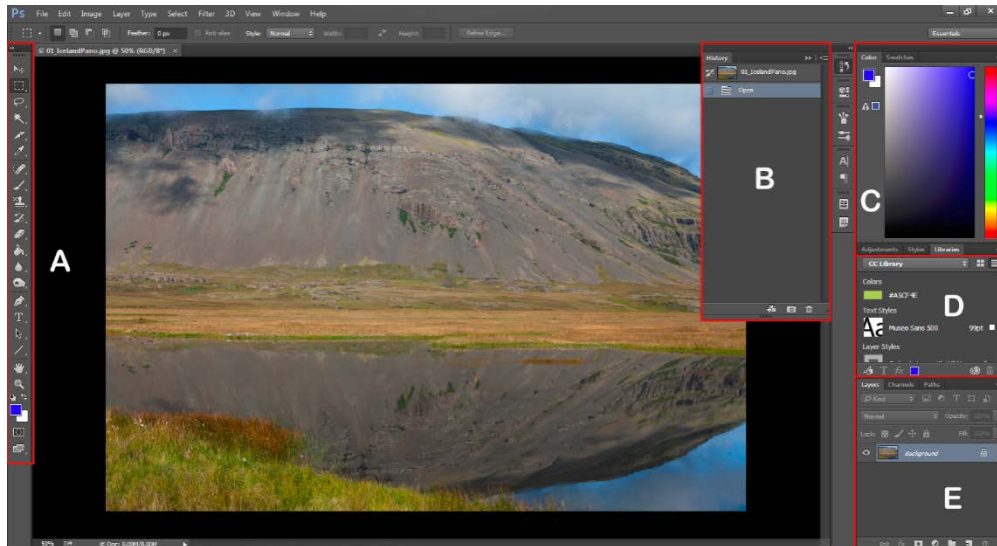


Figure 20: Adobe Photoshop interface

But I think for texturing a full 3D Model Substance Painter is the best to work. I made my all model texture in that software. I just correct any mistake in Adobe Photoshop or add any kind of Bangla Text

This is my one of the experience to combine and work using 2 or 3 software to make up one project. I believe this experience will help me a lot in my future project or work

### 3.9 Work in Adobe Illustrator

I use this Adobe Illustrator for logo and make correction about any Texture just like Adobe Photoshop. This is very good software for making any kind of shape and stuff

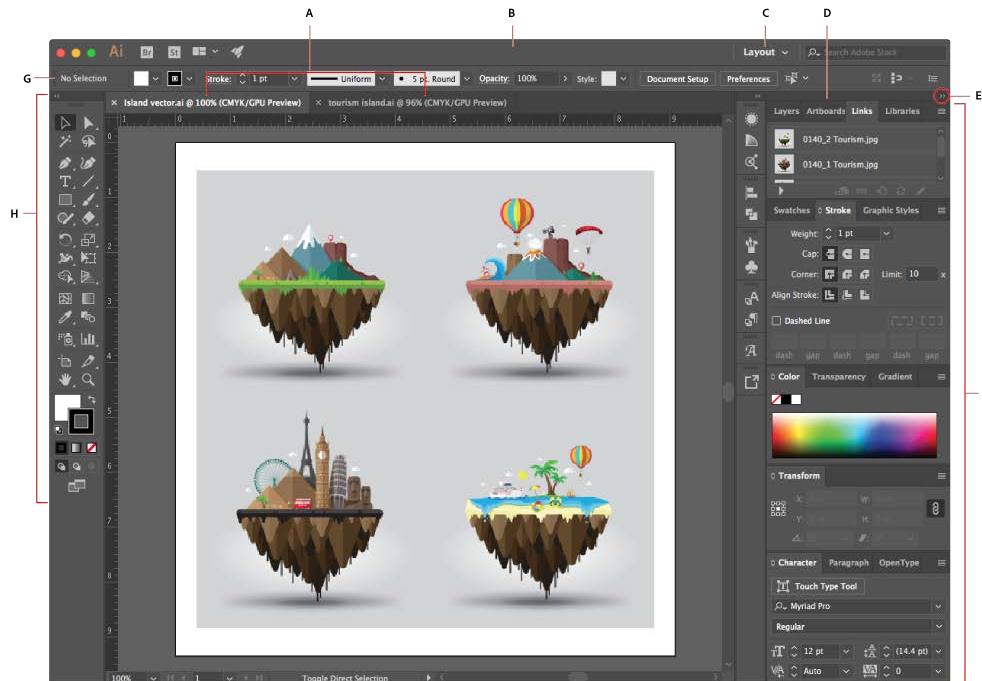


Figure 21: Adobe Illustrator interface

I use Combine work in Adobe Photoshop and Adobe Illustrator for one Texture work. This is the very much same experience which I have working on 2 software for one work

I am very glad to use adobe Illustrator software for my Final work

### 3.10 Work in Adobe After Effects

I use Adobe After Effects for my video menu in this game. I created 2 video intro in Adobe After Effects which I used in my game menu. First one is my name intro which I use as my first video in this game. Second I use a loop video which I use in my option menu. When someone open my game then my name intro will come first



Figure 22: Adobe After Effects Creation

After 30 second it will show start game option. O make this from YouTube tutorial



Figure 23: show start option

When anyone click in the start game option then he will automatically go to option menu



Figure 24: show Option Menu

### 3.10 Camera

I use Unreal Default 5 or 6 cameras for capturing my view. This camera is very useful to use



Figure 25: Unreal Engine Camera



I also use I default camera with my player character so that where player go camera can follow the character in third person view



Figure 26: Unreal Engine Camera with Player

I also use camera in vehicles so that when player go inside any vehicles then the camera mode will automatically become third person view



Figure 27: Unreal Engine Camera with Player

I also place camera inside of the vehicles so when player press “X” then automatically the view will come into first person view



Figure 28: helicopter inside First Person view

### 3.12 Lighting

I use unreal lighting to make this game. Some of lighting I use are default and I modify some of lighting which I use here

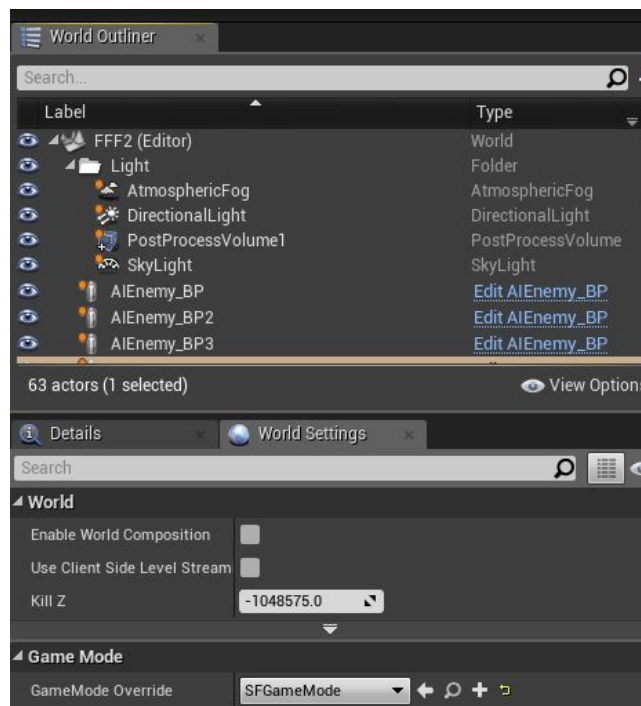


Figure 29: Lighting Setting

### 3.13 Substance Painter

For texturing my Autodesk Maya 3D model I use mainly substance painter. I think for texturing a full 3D Model Substance Painter is the best to work. This is very easy and useful software for texturing a 3d model. I find it very comfortable with it while I am working. My most of the 3d model texture with this software.

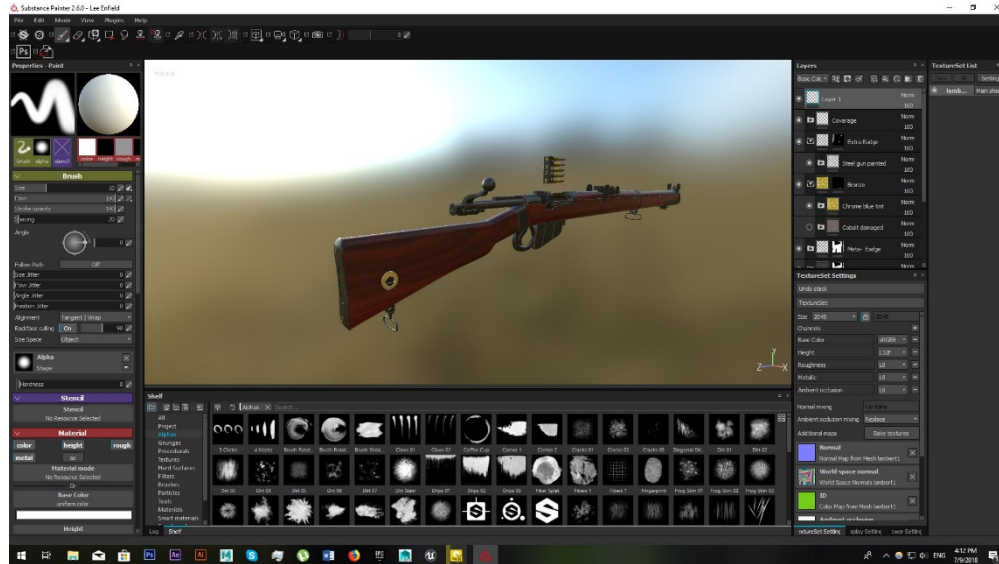


Figure 30: substance painter with my model

All Maps can export with substance painter which is very difficult in other software. Also substance painter makes very easy to texture something. After baking the object, it became very easy to texturing an object

I can also directly transfer any 3d model from substance painter to unreal engine. The plugin in unreal engine is very helpful to transfer any texture object from substance painter to unreal engine

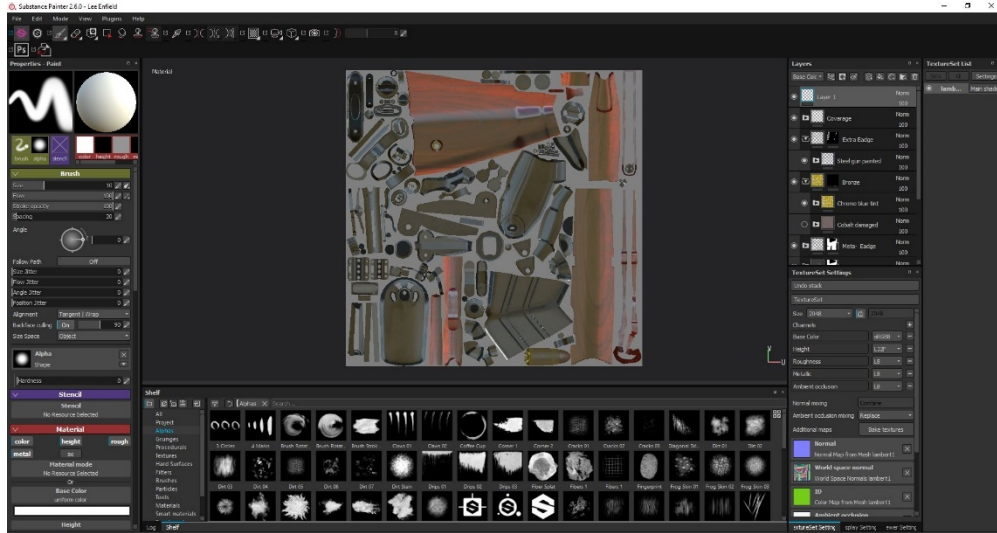


Figure 31: substance painter texture mode

Using all this Facilities of Substance Designer is used more for creating suitable, dynamic and modular textures. I sometimes often used to create a base material library where materials can be used in other applications such as Substance Painter. I create to substance material for use in a game engine and other stuff

### 3.14 Menu

For creating menu in my game I use unreal engine widget option. I created several widgets for my game. I created widget like Start widget, Menu widget, resolution widget, mission complete widget, mission accomplished widget, menu widget, Mini map widget etc.





Figure 32: resolution UI widget

I need to measure my screen height and width so I when I open my game than it all match. Also I need to create some widget number which can change when needed. Like bullet number, life strength, Grenade number, Heath, Intel, quest etc.

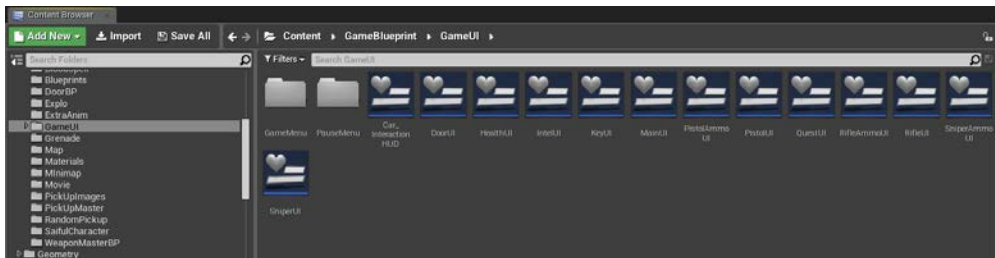


Figure 33: widget list

### 3.15 Font

For this project I use one font name Intro rush. In my view this font is perfect for my game



Figure 34: Intro Rust Font

I wanted to use a war or scratch effected font to use in my game. I think this in perfectly suitable for my game. I use this font everywhere in my game in almost in every widget. I mainly used this font in map widget



Figure 35: map widget

### 3.16 My Model I used

I previously created many 3d models. Many models I upload on 3d model sell marketplace like 3docean. I upload 36 complete models in 3d ocean and 28 time sell those model till now

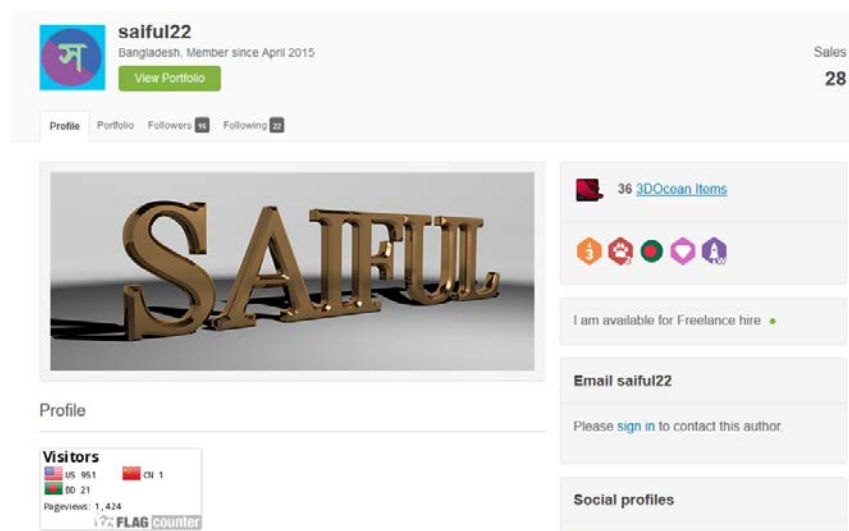


Figure 36: 3D Ocean Market place Profile

**saiful22**  
 Bangladesh, Member since April 2015  
[View Portfolio](#)

Profile **Portfolio** Followers 16 Following 22

Date Published ↑





	<b>High Speed Patrol Boat</b> saiful22	in 3D Models / Vehicles 3D File Formats Included: .3ds (multi format), .c4d (cinema 4d), .dxf (multi format), .fbx (multi format), .ma (maya), .max (3ds Max), .mb (maya), .obj (multi format), Geometry: Polygons, Poly Count: 66700	<b>\$12</b>
	<b>7 Low Poly Building</b> saiful22	in 3D Models / Buildings and Architecture / Buildings 3D File Formats Included: .c4d (cinema 4d), .dxf (multi format), .fbx (multi format), .ma (maya), .max (3ds Max), .mb (maya), .obj (multi format), Geometry: Polygons, Poly Count: 11905	<b>\$9</b> 4 Sales
	<b>5 Missile</b> saiful22	in 3D Models / Fantasy and Fiction / Weapons 3D File Formats Included: .c4d (cinema 4d), .dxf (multi format), .fbx (multi format), .ma (maya), .max (3ds Max), .mb (maya), .obj (multi format), Geometry: Polygons, Poly Count: 2604	<b>\$9</b> 1 Sale
	<b>Mini Spaceship</b> saiful22	in 3D Models / Fantasy and Fiction / Aliens 3D File Formats Included: .c4d (cinema 4d), .dxf (multi format), .fbx (multi format), .ma	<b>\$12</b>

Figure 37: Some Portfolio item of mine

I show some of my item ready models. All of those models are created in maya-2015, 3ds max 2015. I made texture in adobe Photoshop and Substance Painter

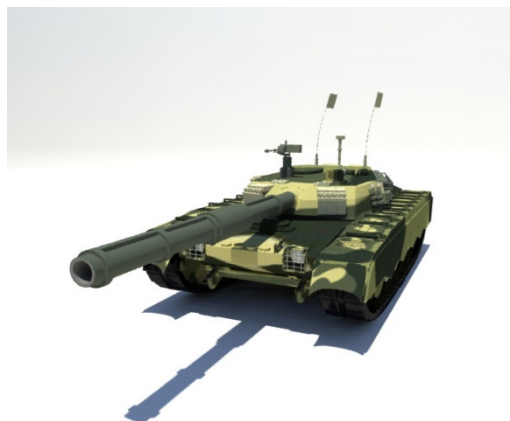


Figure 38: Tank Model



Figure 39: Car Model

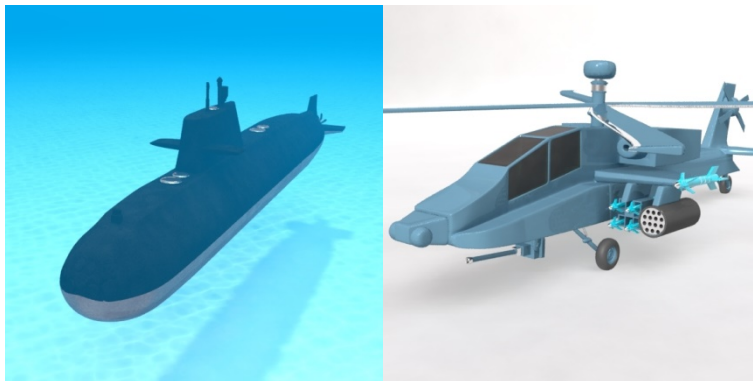


Figure 40: Submarine and attack helicopter model



Figure 41: Stealth Frigate model



Figure 42: FIAT panda car model





Figure 43: Euro Copter model



Figure 44: Volvo Car model

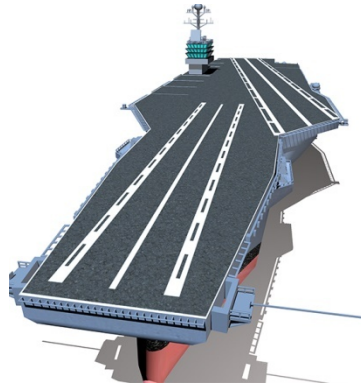


Figure 45: Aircraft Career model



Figure 46: speed boat model

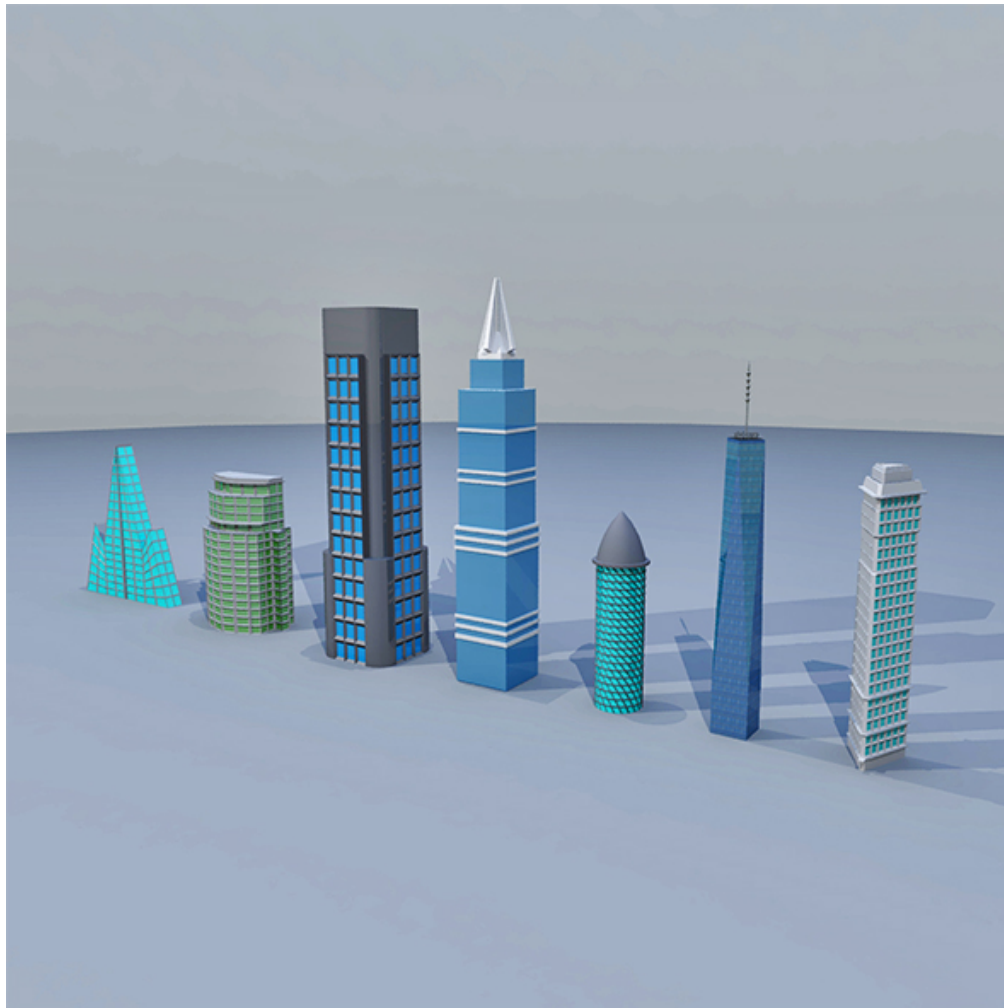


Figure 47: some low poly building model

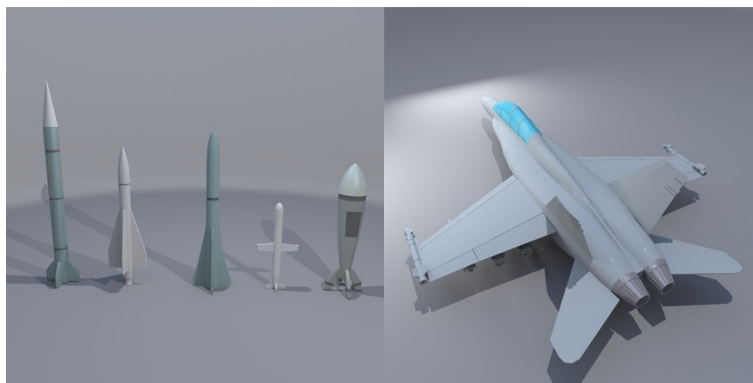


Figure 48: Missile and F-18 super Hornet place model





Figure 49: Military model

Out of the market I have also other work on my portfolio. I have 9 weapon models in artstation.

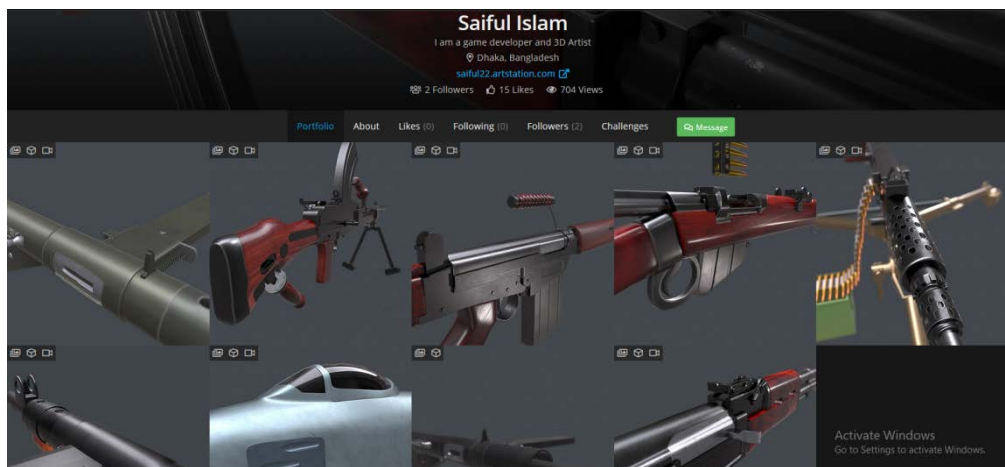


Figure 50: artstation portfolio

Here is some render image of those models



Figure 51: Bren Light Machine Gun



Figure 52: L1A1 SLR



Figure 53: Lee Enfield



Figure 54: M2 Browning Machine Gun



Figure 55: AK-47 Rifle



Figure 56: Sten MKV Gun

## CHAPTER 4: GAME BLUEPRINT

### 4.1 Introduction

The Blueprints Visual Scripting system in Unreal Engine is a complete gameplay scripting system based on the concept of using a node-based interface to create gameplay elements from within Unreal Editor. As with many common scripting languages, it is used to define object-oriented (OO) classes or objects in the engine. As you use UE4, you'll often find that objects defined using Blueprint are colloquially referred to as just "Blueprints."

This system is extremely flexible and powerful as it provides the ability for designers to use virtually the full range of concepts and tools generally only available to programmers. In addition, Blueprint-specific markup available in Unreal Engine's C++ implementation enables programmers to create baseline systems that can be extended by designers

Blueprints work by using graphs of Nodes for various purposes - object construction, individual functions, and general gameplay events - that are specific to each instance of the Blueprint in order to implement behavior and other functionality.

These are just two of the Types of Blueprints, which also include Blueprint Macros and Blueprint Interfaces

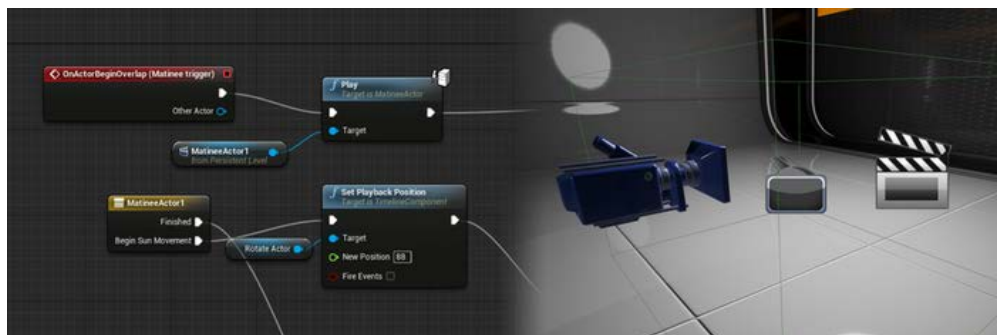


Figure 57: Level Blueprint

The Level Blueprint fills the same role that Kismet did in Unreal Engine 3, and has the same capabilities



Figure 58: Blueprint Class

## 4.2 Character Blueprint

I use my own custom made blueprint into my character. First of all I import my player mesh into unreal engine. Then I created a blueprint character, an animation blueprint, walk and run cycle and add all this into my character blueprint

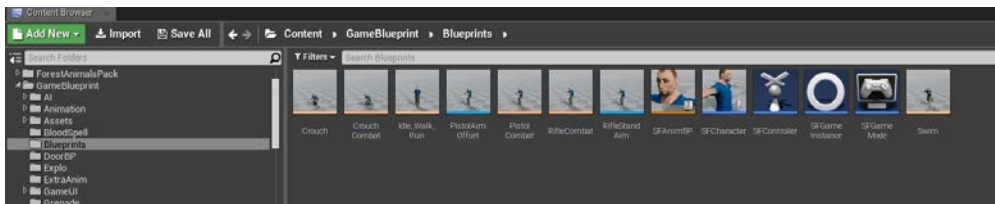


Figure 59: Character Folder

In my character blueprint I need to do several things. I need to add idle, walk and run animation into this,

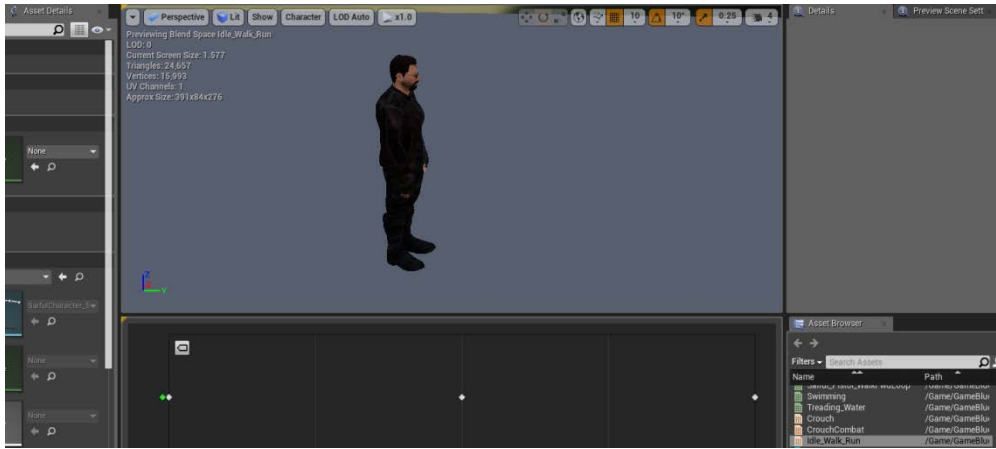


Figure 60: Idle Animation

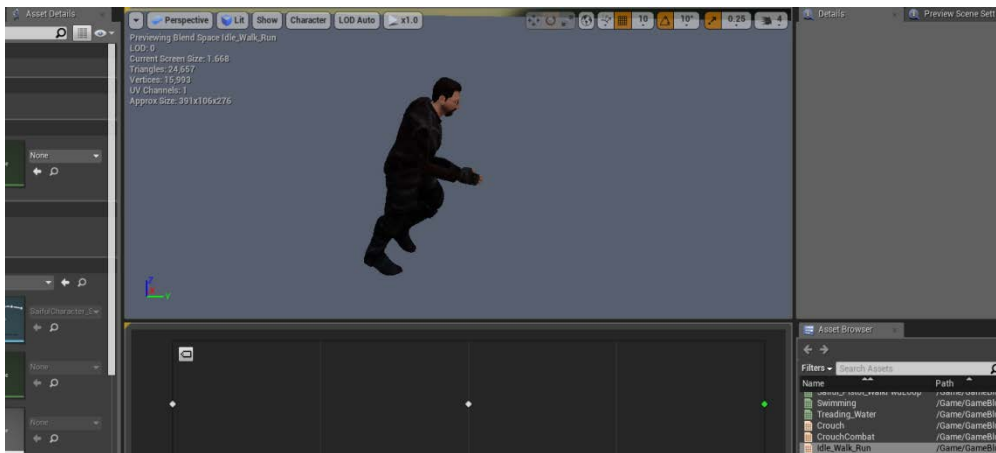


Figure 61: Walk Animation



Figure 62: Run Animation



After finishing idle walk run cycle I work about player rifle combat and crouch combat animation blueprint. After adding those animation blueprints I add those into an animation blueprint graph. An Animation Blueprint is a specialized Blueprint that controls the animation of a Skeletal Mesh. Graphs are edited inside of the Animation Blueprint Editor.

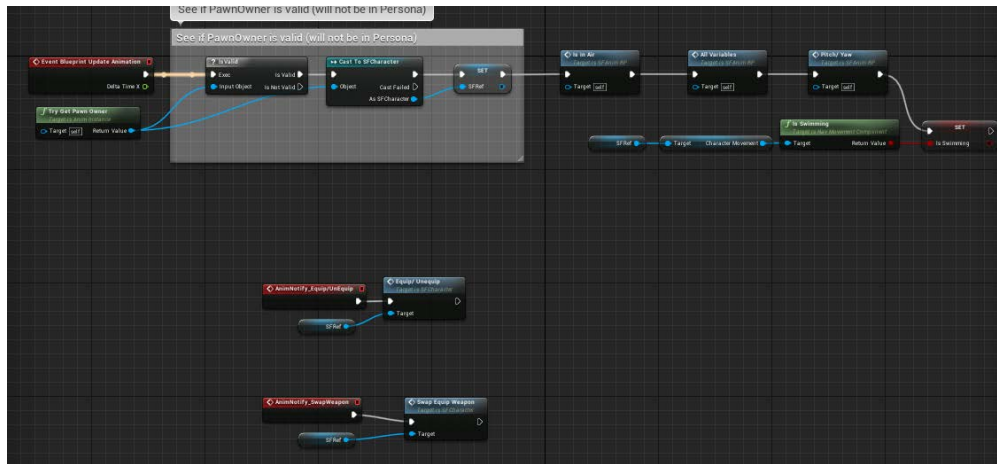


Figure 63: animation blueprint event graph

Here Character can perform animation blending, directly control the bones of a Skeleton, or setup logic that will ultimately define the final animation pose for a Skeletal Mesh to use per frame.

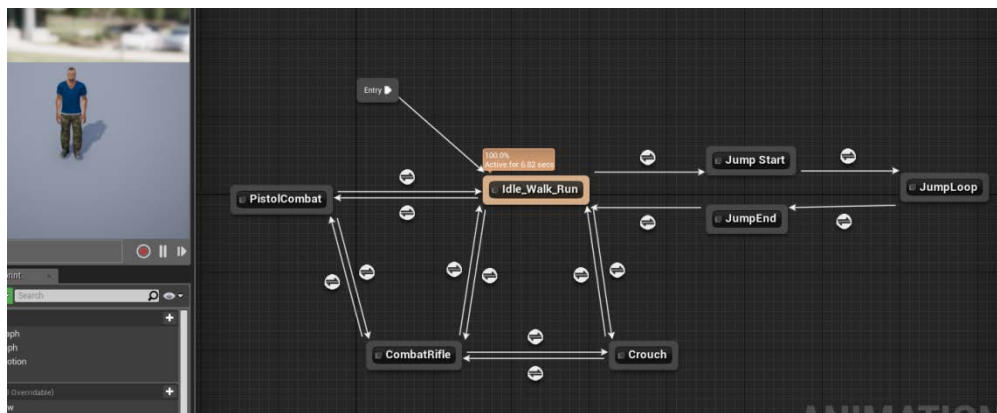


Figure 64: Character Locomotion



Then I work with Character blueprint so character can interact with all animation and weapon

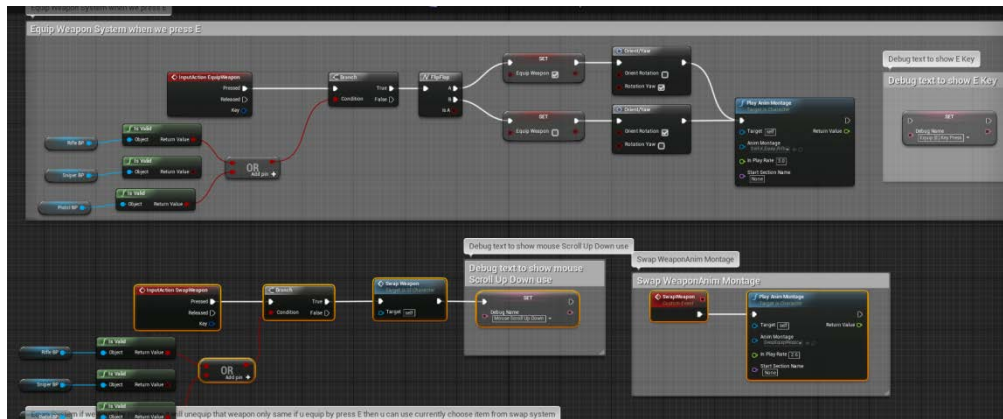


Figure 65: equip weapon with press E

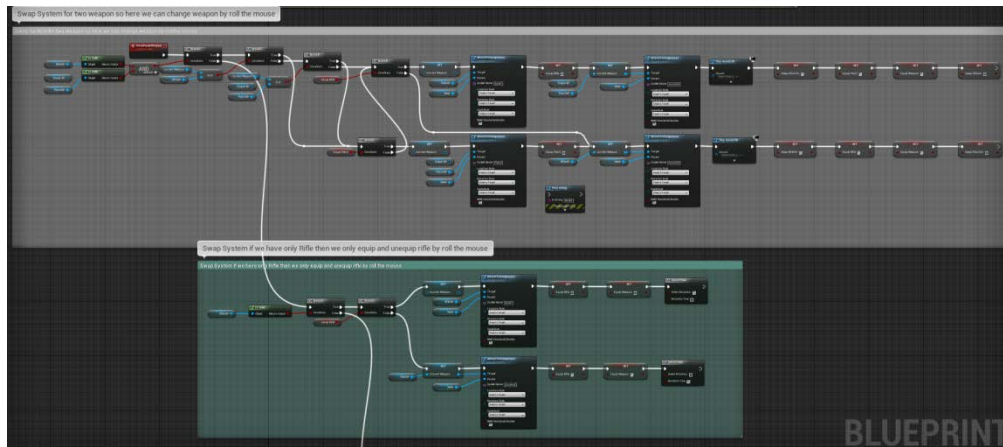


Figure 66: swap weapon mouse roll

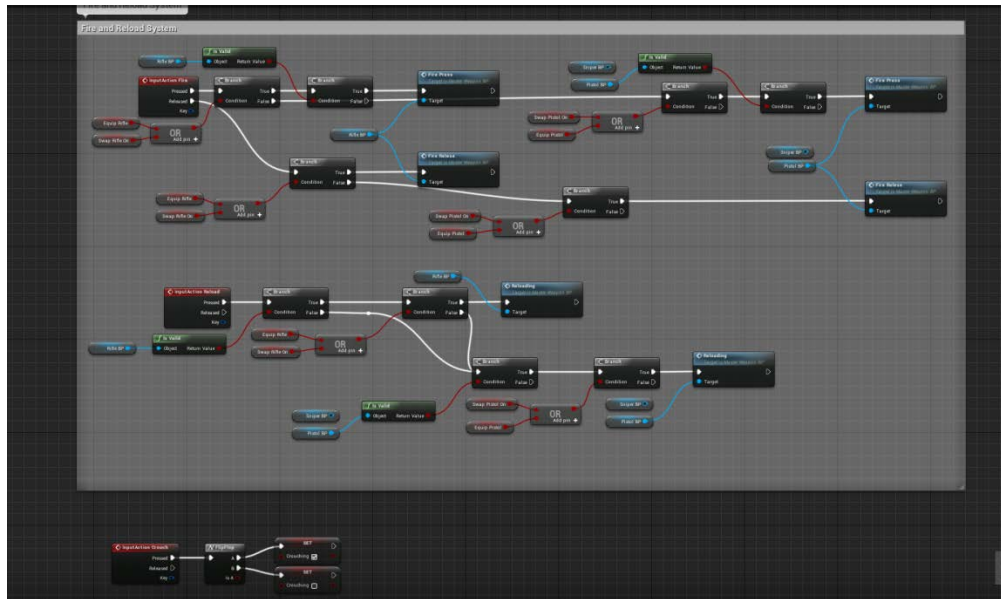


Figure 67: Weapon Fire and Reload Press mouse left

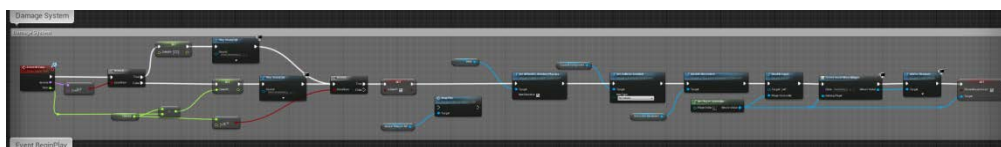


Figure 68: Damage blueprint when hit by enemy

So here player can pick weapon, swap weapon, jump, crouch, collect health, collect intel, collect quest, inter vehicles, Fire, drop weapon, throw grenade and many more several work. I need to attach many more option into my character such as decal, widget etc.

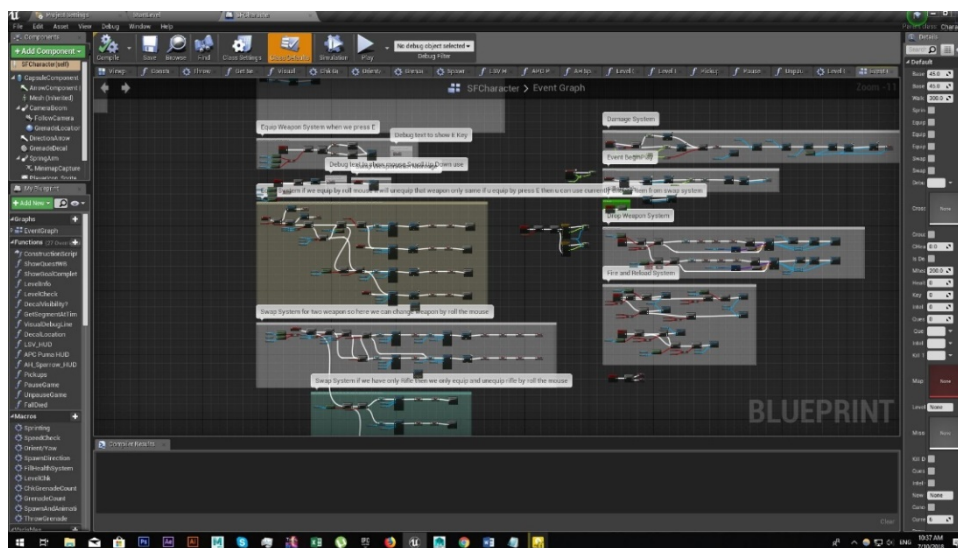


Figure 69: Character blueprint

### 4.3 Enemy Blueprint

The way I attach blueprint into my character the same way I need to attach blueprint into my all of enemy. I need to made blueprint into my every enemy folder. Then I need to import enemy mesh into every enemy folder in unreal engine. Then I created a blueprint enemy, an animation blueprint, walk and run cycle and add all this into my enemy blueprint

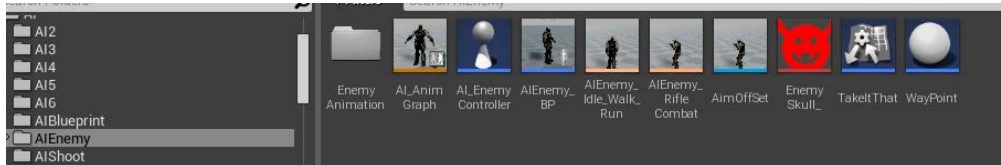


Figure 70: enemy folder

Here I have to do the same thing which I did with my character. I need to add walk, run animation into this,

I need to do equip weapon when enemy see player, Fire at player, hunt player when see friendly dead, patrolling in the area, kill player and when the player killed then start to patrolling I need to attach many more option into my enemy such as range, capability, Fire power, strength etc

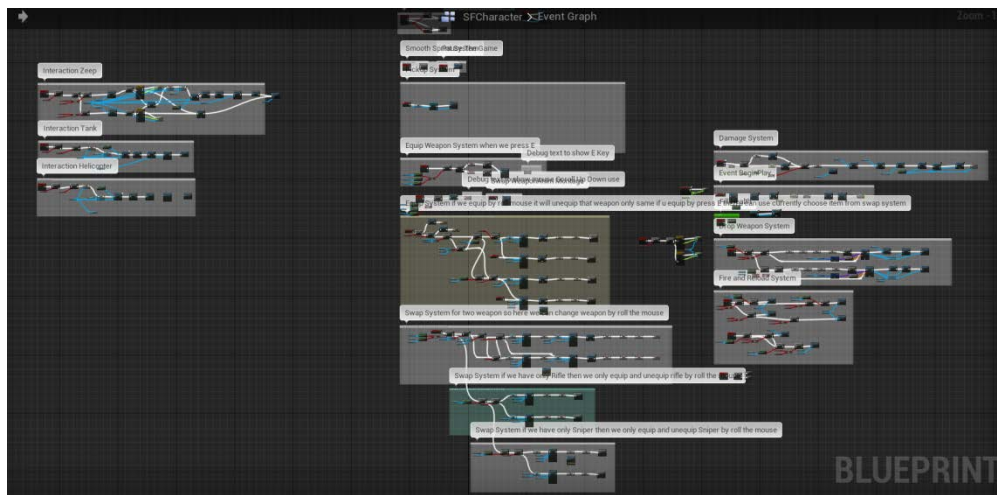


Figure 71: Enemy blueprint

When enemy didn't see the character then it wills just patrolling in a random area

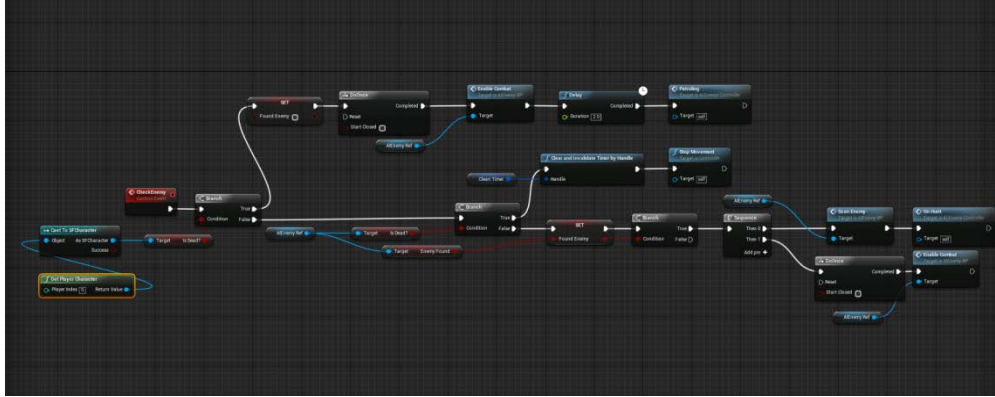


Figure 72: Enemy patrolling

AI Controller is the base class of controllers for AI-controlled Pawns. It work fine with AI. Controllers are non-physical actors that can be attached to a pawn to control its actions. AI Controllers manage the artificial intelligence for the pawns they control. In networked games, they only exist on the server.

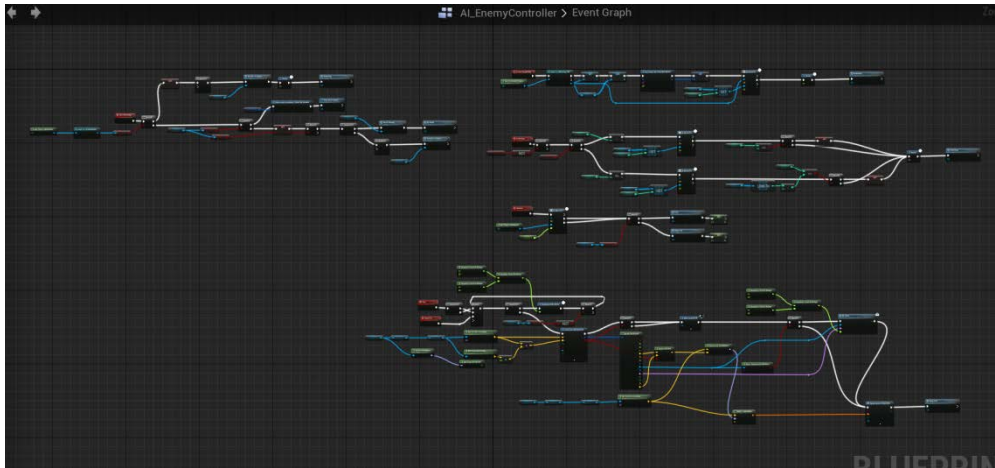


Figure 73: AI Controller

After doing ai controller and enemy blueprint I add enemy mesh

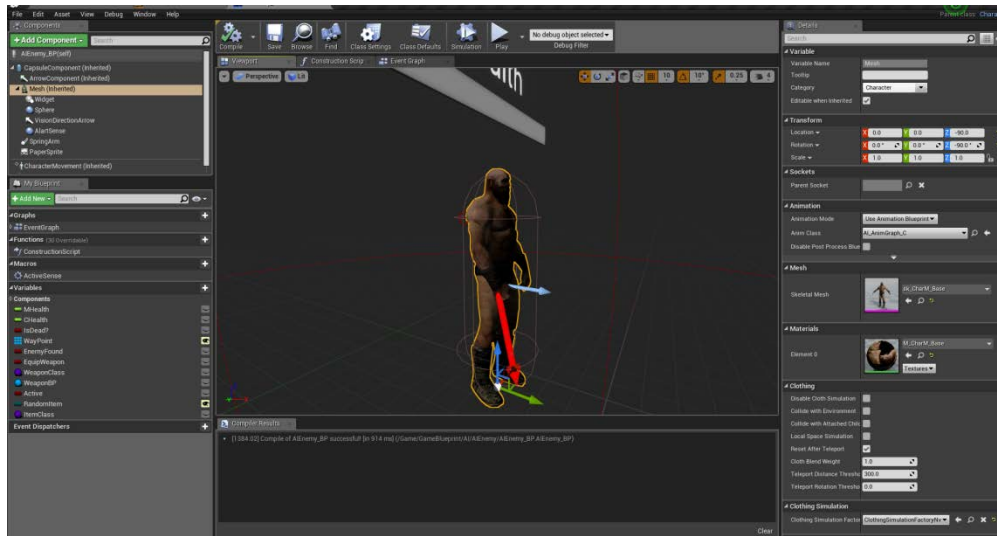


Figure 74: enemy mesh

When player bullet line trace hit enemy then the enemy will be a ragdoll and after 10 second the enemy will be vanished

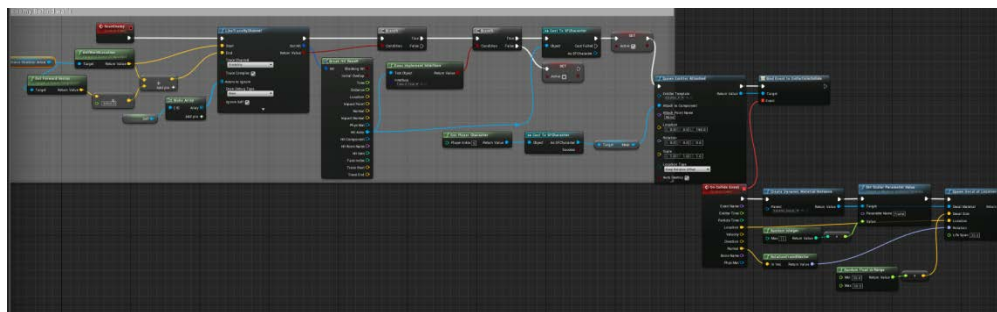


Figure 75: Projectile line trace blueprint

#### 4.4 Weapon Blueprint

After finishing character blueprint then I starts working about weapon which character and the enemy will use.

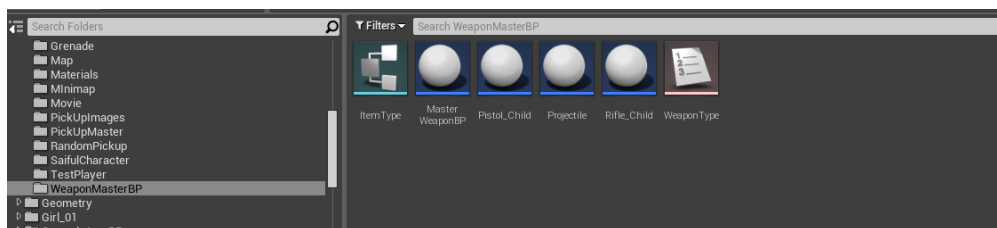


Figure 76: Weapon BP Folder





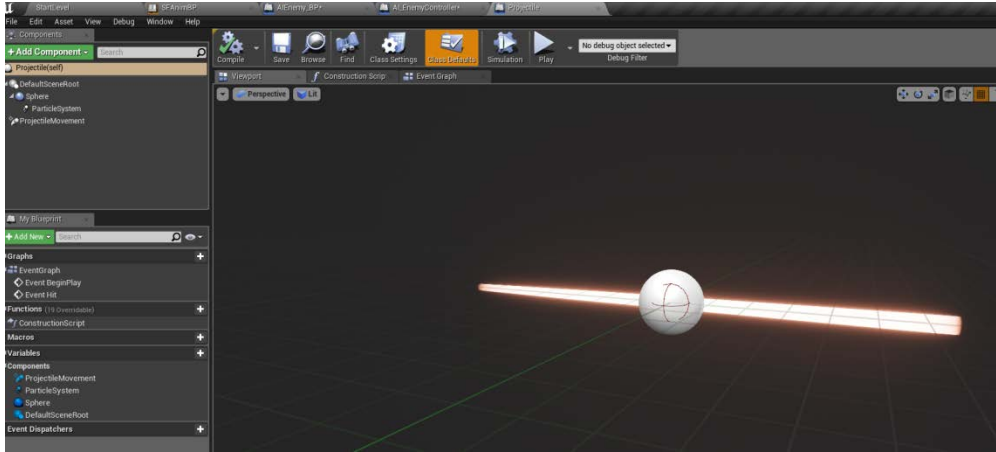


Figure 79: Projectile movement

After adding weapon, I work with character blueprint to interact with all of that. I give action mapping input for my player so we can control it with computer key

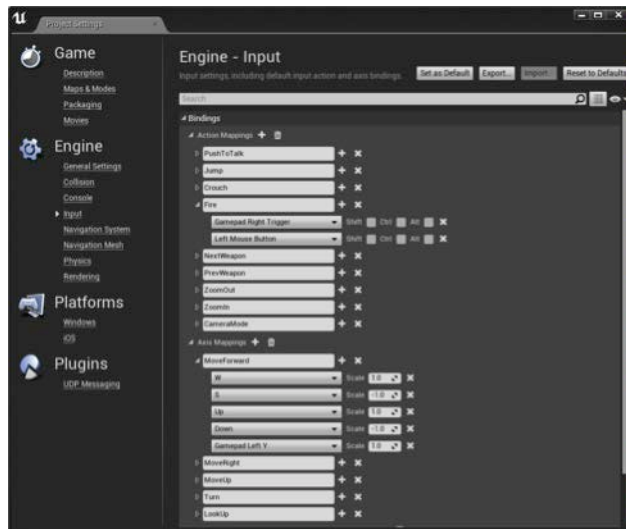


Figure 80: action mapping input

## 4.5 Widget Blueprint

The use of blueprint in widget I describe at first. Basically a widget is Creating and Displaying UI. Typically, in most games we will want to communicate some information to our players through your game's User Interface. With Unreal Motion Graphics (UMG), we can create a Widget Blueprint to handle the display of UI elements in our project.

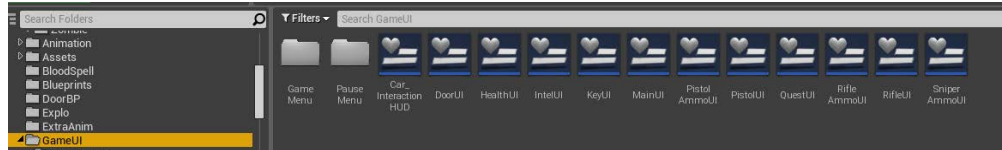


Figure 81: All widget folder

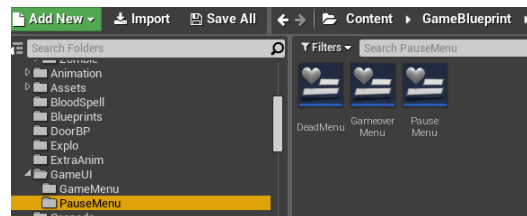


Figure 82: Game over, Death, Pause Widget folder

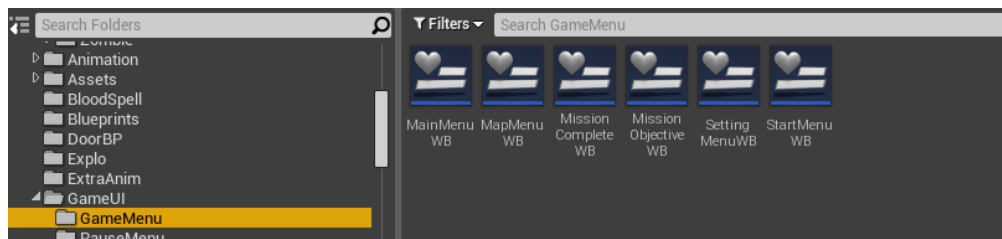


Figure 83: Menu widget folder

In order to start working with Unreal Motion Graphics, you will first need to create a Widget Blueprint as seen below. Click the Add New button inside the Content Browser, then under User Interface, select the Widget Blueprint option.



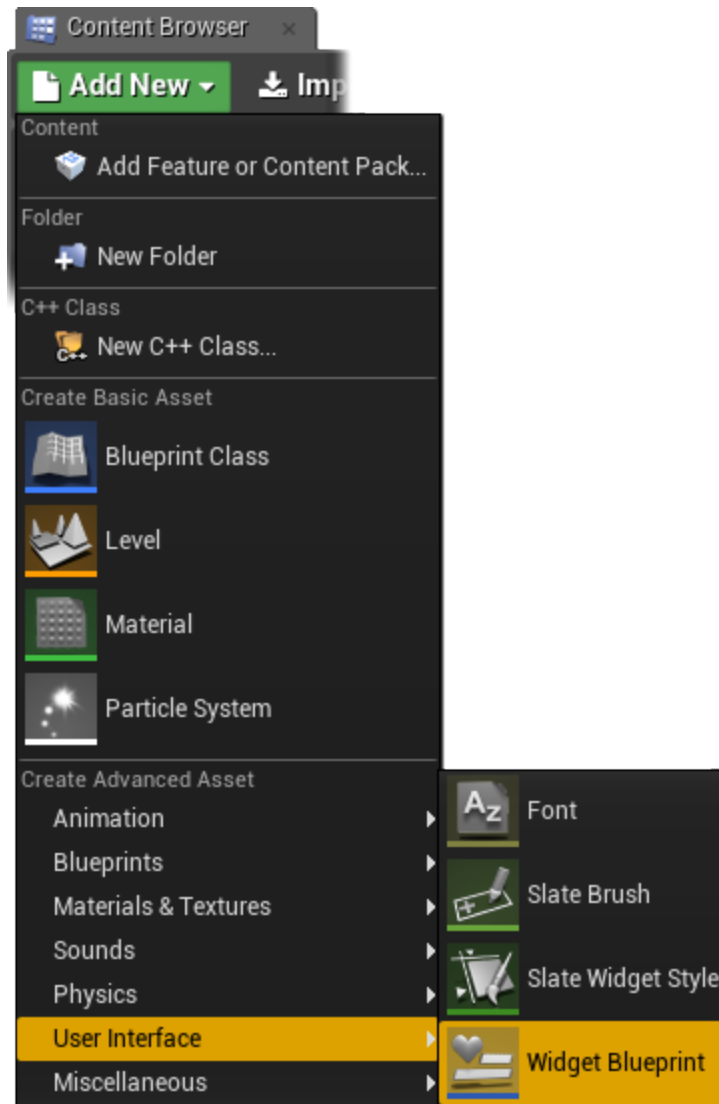
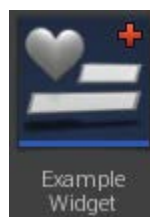


Figure 84: create widget

A Widget Blueprint asset will be created in the Content Browser which you can rename or use the default name for the asset



Double-Click on the Widget Blueprint asset to open it up in the Widget Blueprint Editor.

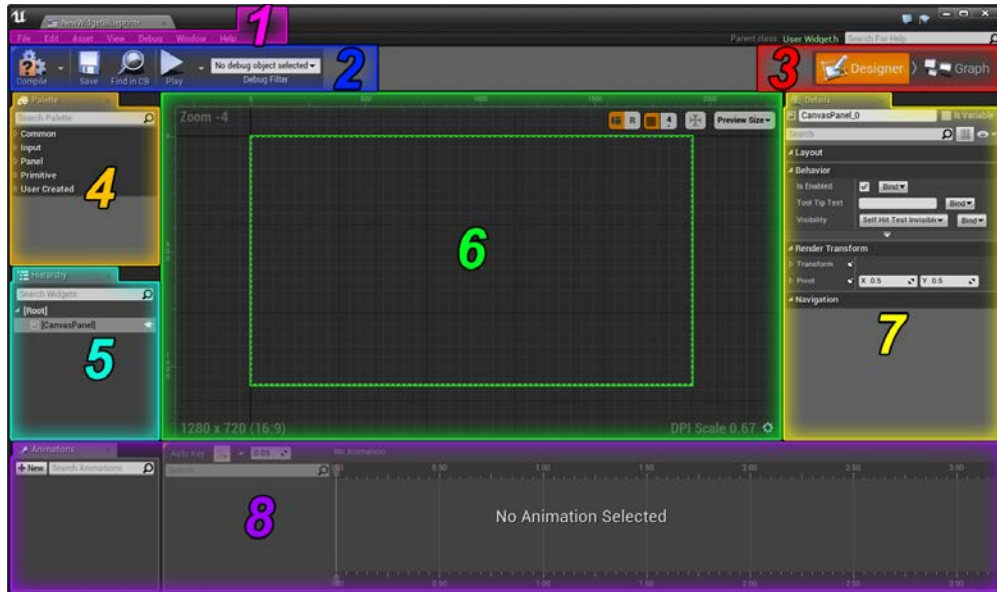


Figure 85: Character blueprint

#### 4.6 Blueprint in level

A Level Blueprint is a specialized type of Blueprint that acts as a level-wide global event graph. Each level in your project has its own Level Blueprint created by default that can be edited within the Unreal Editor, however new Level Blueprints cannot be created through the editor interface.

Events pertaining to the level as a whole, or specific instances of Actors within the level, are used to fire off sequences of actions in the form of Function Calls or Flow Control operations. Those familiar with Unreal Engine 3 should be very familiar with this concept as this is very similar to how Kismet worked in Unreal Engine 3.

Level Blueprints also provide a control mechanism for level streaming and Matinee as well as for binding events to Actors placed within the level.

Each game can specify the default Level Blueprint class in the DefaultGame.ini confer file. The Level Blueprints for all new maps will be created using this class allowing for game-specific additions and functionality.

To open a Level Blueprint for editing, click the Blueprints button in the Level Editor Toolbar and select Open Level Blueprint.

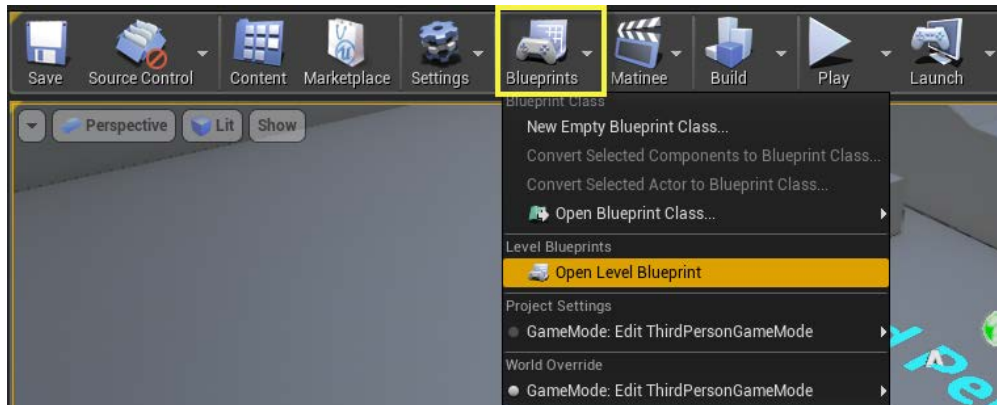


Figure 86: Open Level blueprint

This opens the Level Blueprint in the Blueprint Editor

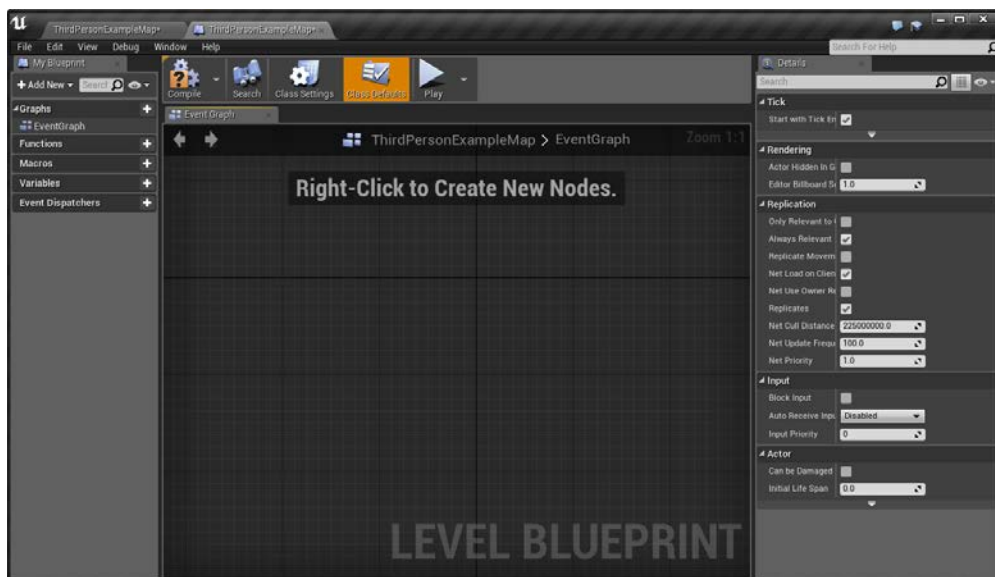


Figure 87: Level blueprint

## CHAPTER 5: HARDWARE REQUIREMENT

### 5.1 Introduction

For playing a good quality graphic game you need good hardware requirement. Otherwise you won't be able to play that game. Often manufacturers of games will provide the consumer with a set of requirements that are different from those that are needed to run software. These requirements are usually called the Recommended Requirements. These requirements are almost always of a significantly higher level than the minimum requirements, and represent the ideal situation in which to run the software. Generally speaking, this is a better guideline than minimum system requirements in order to have a fully usable and enjoyable experience with software.

To be used efficiently, all computer software needs certain hardware components or other software resources to be present on a computer. These prerequisites are known as (computer) system requirements and are often used as a guideline as opposed to an absolute rule. Most software defines two sets of system requirements: minimum and recommended. With increasing demand for higher processing power and resources in newer versions of software, system requirements tend to increase over time. Industry analysts suggest that this trend plays a bigger part in driving upgrades to existing computer systems than technological advancements. A second meaning of the term of System requirements is a generalization of this first definition, giving the requirements to be met in the design of a system or sub-system. Typically, an organization starts with a set of Business requirements and then derives the System requirements from there.

The most common set of requirements defined by any operating system or software application is the physical computer resources, also known as hardware. A hardware requirements list is often accompanied by a hardware compatibility list (HCL), especially in case of operating systems. An HCL lists tested, compatible, and sometimes incompatible hardware devices for a particular operating system or application. The following sub-sections discuss the various aspects of hardware requirements.

Software requirements deal with defining software resource requirements and prerequisites that need to be installed on a computer to provide optimal functioning of an application. These requirements or prerequisites are generally not included in the software installation package and need to be installed separately before the software is installed.

## 5.2 Importance

Following are a few examples of system requirement definitions for popular PC games and trend of ever-increasing resource needs:

For instance, while StarCraft (1998) requires:

Requirements	
Windows	
Operating system	Windows 95 or NT or superior
CPU	Pentium processor at 90 MHz or higher
Memory	16 MB RAM
Hard drive	80 MB available in the hard disk
Media	CD-ROM, 2x or higher
Graphics hardware	DirectX 3.0 or higher

Figure 88: StarCraft (1998) requires

Doom 3 (2004) requires:

Requirements	
Windows	
Operating system	Windows 2000/XP
CPU	Pentium 4 1.5 GHz or Athlon XP 1500+ processor or higher
Memory	384 MB RAM
Hard drive	2.2 GB free hard disk space
Media	8x Speed CD-ROM
Graphics hardware	3D Hardware Accelerator - 64MB of memory minimum DirectX 9.0b
Sound hardware	DirectX 9.0b compatible 16-bit sound card

Figure 89: Doom 3 (2004) requires

Grand Theft Auto V (2015) requires:

Requirements	
Windows	
Operating system	Windows 8.1 64 Bit, Windows 8 64 Bit, Windows 7 64 Bit Service Pack 1, Windows Vista 64 Bit Service Pack 2
CPU	Core 2 Quad Q6600 at 2.4 GHz or AMD Phenom 9850 at 2.5 GHz
Memory	4 GB RAM
Hard drive	65 GB of free space
Graphics hardware	DirectX 10-compatible GPU: GeForce 9800GT 1GB or ATI Radeon HD 4870 1GB
Sound hardware	DirectX 10 compatible sound card

Figure 90: Grand Theft Auto V (2015) requires

### 5.3 Problems

Low FPS is the big problem. In some situations, Reason game can be slow down while you are playing a game. It is can be for hardware. Usually recommended requirements are what are needed in order to play game with decent graphical settings, but nowhere near maxed out. Minimum is what is needed in order to run it bare bones or slightly higher.

Usually if you are looking to max out the graphical settings on any recent game you need a pretty high end rig. When Microsoft lists minimum and recommended for their operating systems, the recommended settings are required to run the OS and anything else at all. With Minimum you might be able to handle paint and notepad.

If you run the game under minimum requirement you might not be able play smoothly. You will face problems such as Lagging, Not so clear resolution etc. Meeting the recommended requirements of a game helps in high graphics, better resolution and no lagging.

## CHAPTER 6: DISCUSSION

### 6.1 Discussion

My project also has some bug which I solve and which I can't solve. I willing to try solve the entire problem. Project like this take long time to complete. For example, GTA V game needs 5 year to complete the whole game and it need 1200 expert to complete it. I am a human so it takes me too for problem solve



Figure 91: Discussion

Testing without requirements can be difficult. Not knowing what is required of the software poses risks in knowing what and how to test the software. After all, how can someone test something if you don't know how it's required to work if it hard? The importance of requirements often goes overlooked.

Software requirements specifications (SRS) are the foundation of the pillars of software. They drive design, development, user experience, support documentation, and more



## CHAPTER 7: CONCLUSION

### 7.1 Conclusion

I am created this project for my final project in Daffodil International university. I have also future plan to work with this. I want to create many more game in unreal engine. I wanted to create this game as educational so people could learn something. Also people can enjoy sometime while playing this game



Figure 92: Conclusion

The game is total 10 GB in size and it need at last 4 GB ram to play this game into someone PC. It also need 1 GB graphic card to play this game. Without graphic car the game will not play. This is a portable game so anybody can play it without installing the game. The game needs some external software for playing this game.

It will need direct x 10 or direct x11 to install. After all of the requirement people can play this game

## FUTURE WORK

I want to do something for gaming industry in Bangladesh and I want to build my career in this subject. I want to study about more about on this subject. There is not very well known idea about gaming industries in Bangladesh. Most of the people have not clear idea about game and gaming industries. Many people think game is a waste of time and harmful for the people. I don't want or do want to harm people by creating this game. Many good message and education can be taught from game. It will be very easy to teach children from this. Children love to play and learning from what they love is very good. Many western countries are now applying this kind of method in their country. I want to do something like that in my country



Figure 93: future work

I find it very enjoyable while I am working on it. I am very happy to work with this project in final year presentation. I hope everybody will love my work. Please correct me if I done some error in this work. Thank you everyone

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- [12] Paragon agora and monolith environment free asset <https://www.unrealengine.com/marketplace/paragon-agora-and-monolith-environment>(Accessed on 26 April, 2018)
- [13] Soul City free asset in unreal engine <https://www.unrealengine.com/marketplace/soul-city>(Accessed on 29 April, 2018)
- [14] Infinity blade enemies free asset <https://www.unrealengine.com/marketplace/infinity-blade-enemies>(Accessed on 2 February, 2018)
- [15] Infinity blade plain lands free asset <https://www.unrealengine.com/marketplace/infinity-blade-plain-lands>(Accessed on 7 February, 2018)
- [16] Open world demo collection free asset unreal engine <https://www.unrealengine.com/marketplace/open-world-demo-collection>(Accessed on 9 November, 2017)
- [17] Third Person shooter Preview. <https://www.youtube.com/channel/UCTA7ggBDBcF30GeSDysBoGg>(Accessed on 07 December, 2018)
- [18] Unreal engine user community help <https://www.facebook.com/groups/UnrealMastersAcademy/> (Accessed on 06 February, 2018)
- <https://www.facebook.com/groups/ue4devs/>(Accessed on 17 May, 2018)
- [19] Royalty free sound download <https://freesound.org/> (Accessed on 12 April, 2018)