Computer Engineering Department

A.P. Shah Institute of Technology

—G.B.Road,Kasarvadavli, Thane(W), Mumbai-400615

UNIVERSITY OF MUMBAI

Academic Year 2019-2020

A Project Report on

Product Comparison System

Submitted in partial fulfillment of the degree of

Bachelor of Engineering(Sem-7)
in
Computer Engineering
By

Ajinkya Darshane(16102001)
Falguni Tailor(16102031)

Under the Guidance of
Prof. Sachin Malave

1.Project Conception and Initiation

1.1 Abstract

The goal of this project is to develop a simple game using Unreal Engine based on an agile methodology that is economic, sustainable and practical. This methodology comprises of four stages, viz. pre-production, production, testing and post-production. We achieve to prove the applicability of the four-stage methodology to make a first person game that includes switchable characters. The three major game development engines available to freelance programmers are the Crytek engine, the Unity Engine and the Unreal engine, of which CrytekEngine is proprietary. The code generated in the backend of Unity Engine is in C, while that in Unreal Engine is Visual C++.

1.2 Objectives

- The primary objective is to build a system to compare product prices and accordingly show their availability with a respective portal's buy link.

- To provide a platform to different users to buy products online .

- To use a single website to view same product price and details from different websites at a same time .

1.3 Literature Review

- A Price Comparison System Based on Lucene : DOI 10.1109/ICCSE.2013.6553894 : This paper presents a product price comparison oriented product search engine, inorder to show all possible prices of products for customers.

- METHOD AND SYSTEM FOR PROVIDING ONLINE COMPARISON SHOPPING : The system provides online comparison shopping through a designated website accessible by a user via a communication network Such as the Internet. The method includes the steps of compiling a shopping list identifying specific items to be purchased.

1.4 Problem Definition

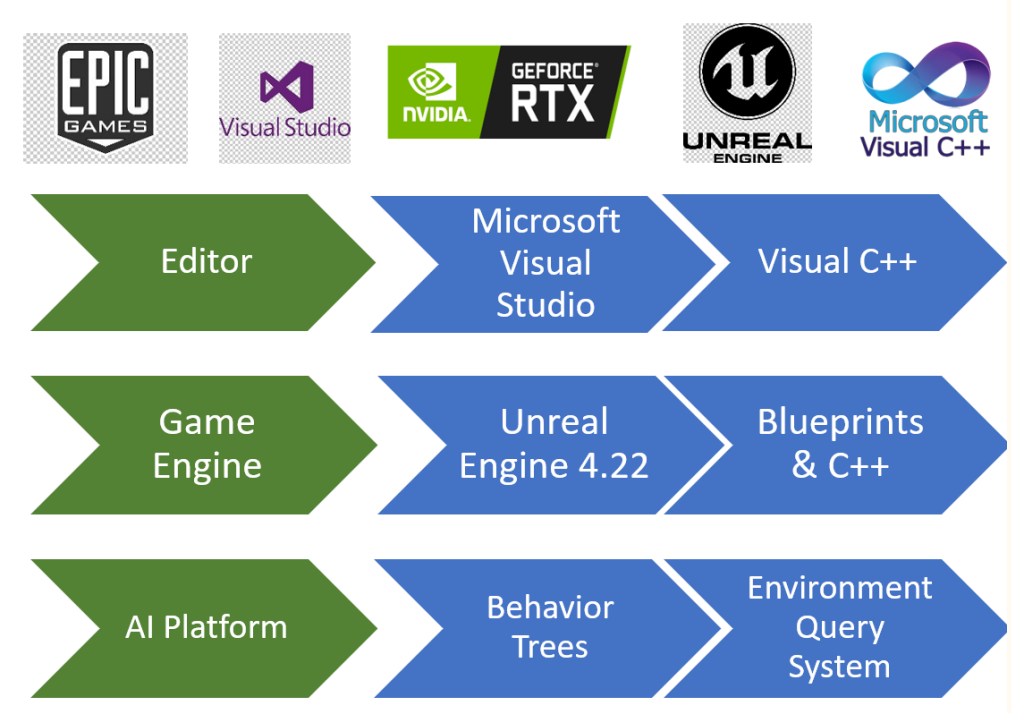
- A videogame that receives overwhelmingly positive reviews on steam is a one that has the perfect gameplay, a well-balanced story between main missions and side-quests, proper graphics optimization for all platforms including PC, XBOX ONE and PS4, a reasonable price and no needless post release DLC. This actually was the case when EA ruled the gaming market in the early 2000s, while as of today, it is rare for a production company to release a complete game that does not involve micro-transactions.
- This has annoyed all gamers alike as they demand a standalone without pay-to-win DLC. This project intends to solve a major fraction of this gamer dilemma whilst deploying the finished product on the Epic Games Store

1.5 Scope

- Our project will provide the availability of product directly rather than checking availability on particular shopping site

- It will help user to compare product’s details from different shopping sites.

1.6 Technology stack



1.7 Benefits for environment

- This project aims to bring into notice the importance of environmental aspects in our everyday life and the deterioration caused by humanity to our surroundings including the atmosphere, flora and fauna, as well as aquatic bodies and make the users of this application aware of their role to the environment and the society.
- The user can exhaust the in-game mechanics to alter the outcomes of each successive mission on the game environment in the form of particle effects rendered in game and the change in the behaviour of the AI. This acts as a direct simulation of how it works in the real world, the only difference being, out there, the changes are irreversible, but this simulation make an impact on users towards their responsibility, especially now that the Amazon rainforest has been adversely depleted, and species are on the verge of extinction.

1.7 Benefits for society

- Video games have long been a part of entertainment well early since the 1970s. But they were very expensive, to say the least. Even the resources for developing such games were very limited, and mostly closed source. With the advent of recent computers (mostly due to their computing power, hardware, memory usage, resource allocation, and being open source), it is now possible to develop simple games using minimum expense and efforts.

2. Project Design

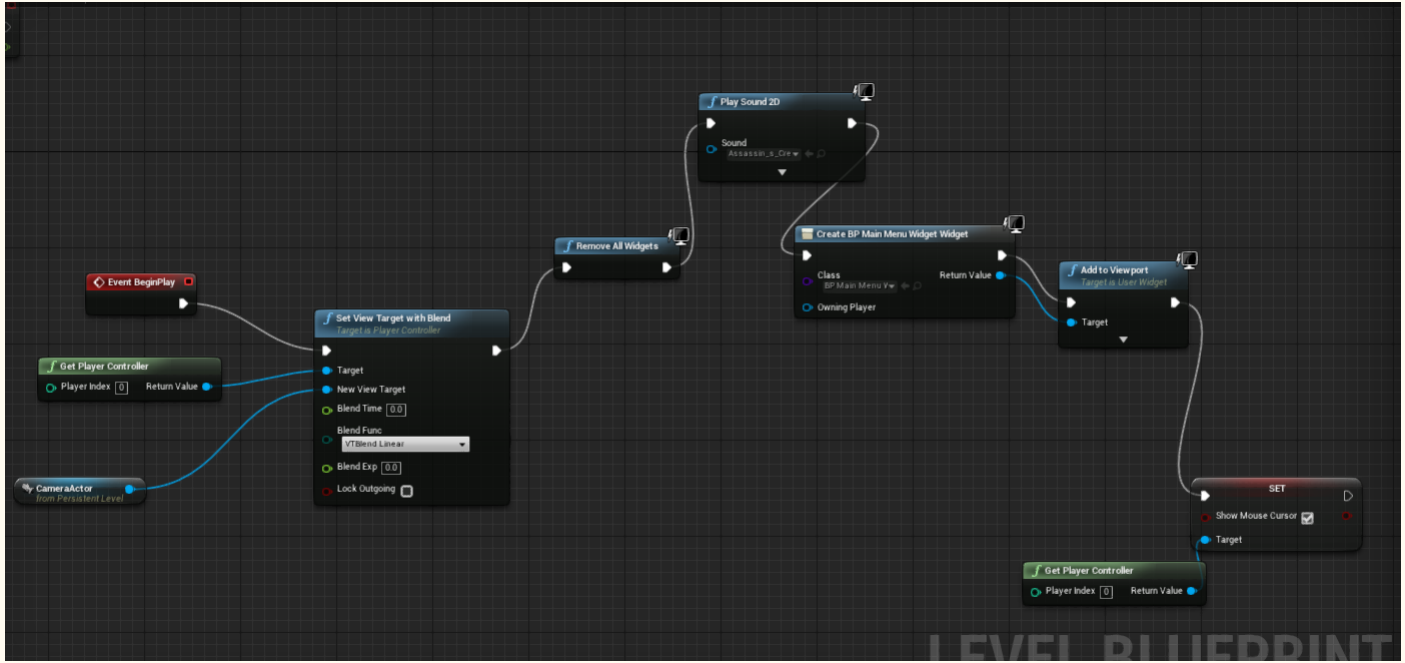
2.1 Proposed System

The Four Stage Methodology

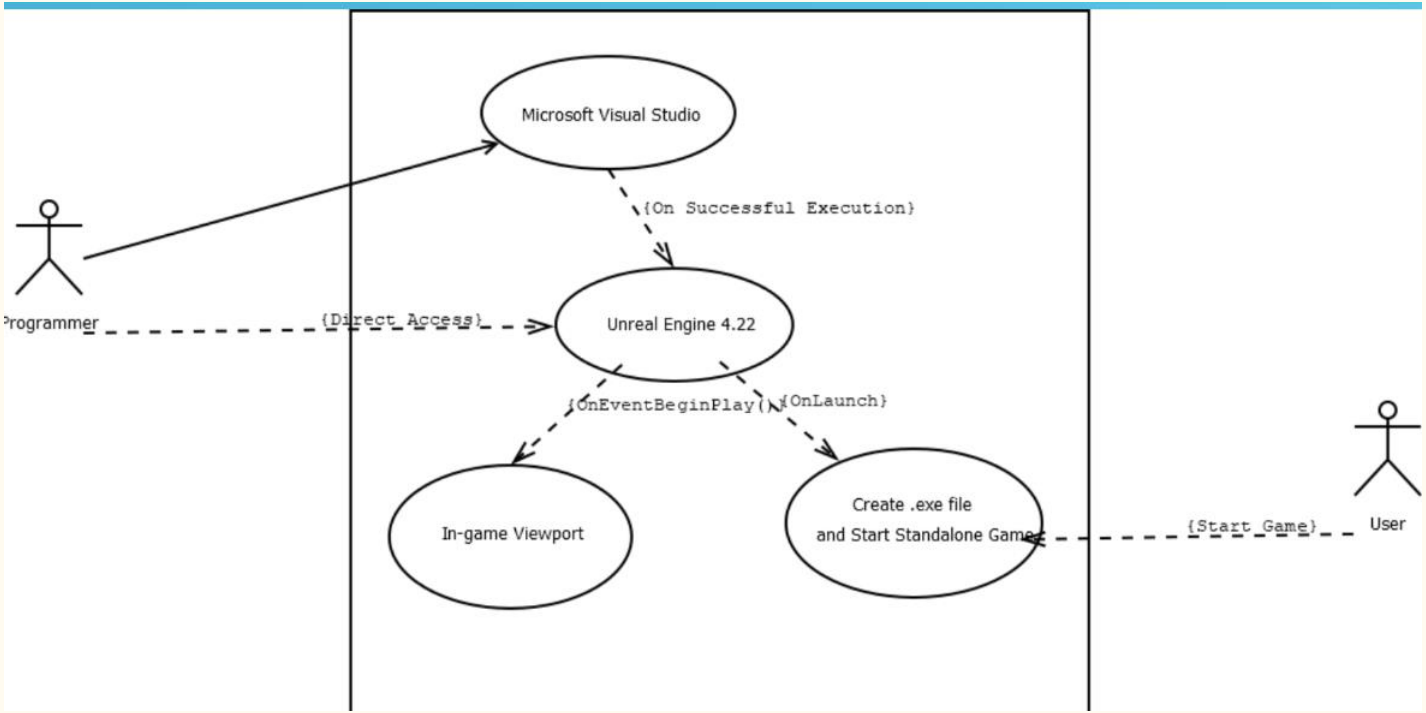
Before starting out, it was necessary to plot the development cycle in terms of stages. For this purpose, we used a four-stage methodology that consisted of four different stages:

- **Pre-production**
- **Production**
- **Testing**
- **Post-production**

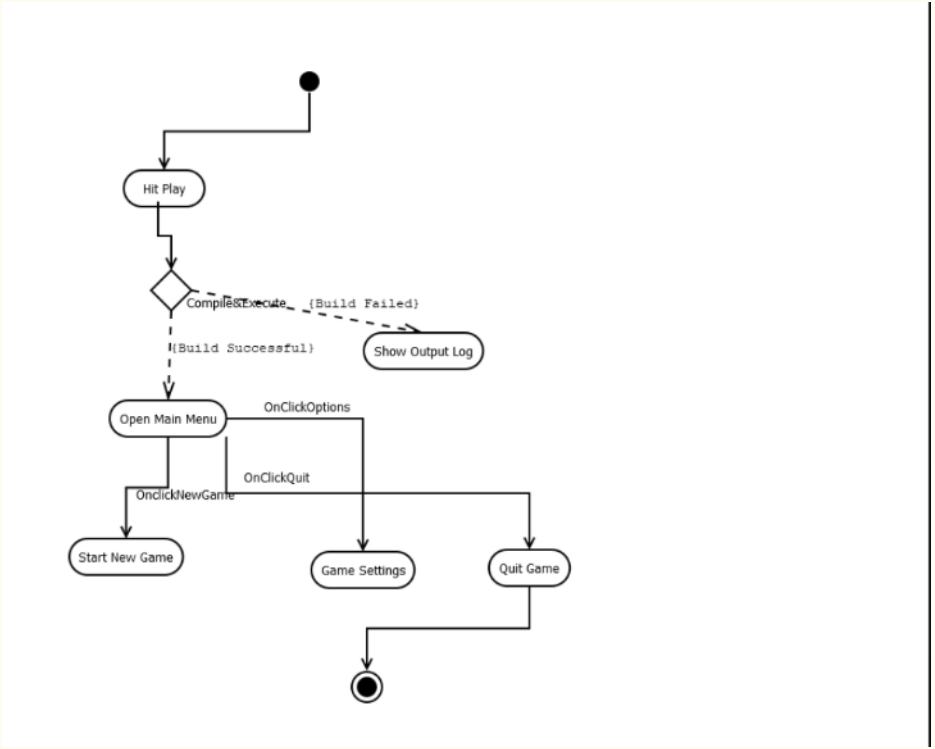
2.2 Design(Flow Of Modules)



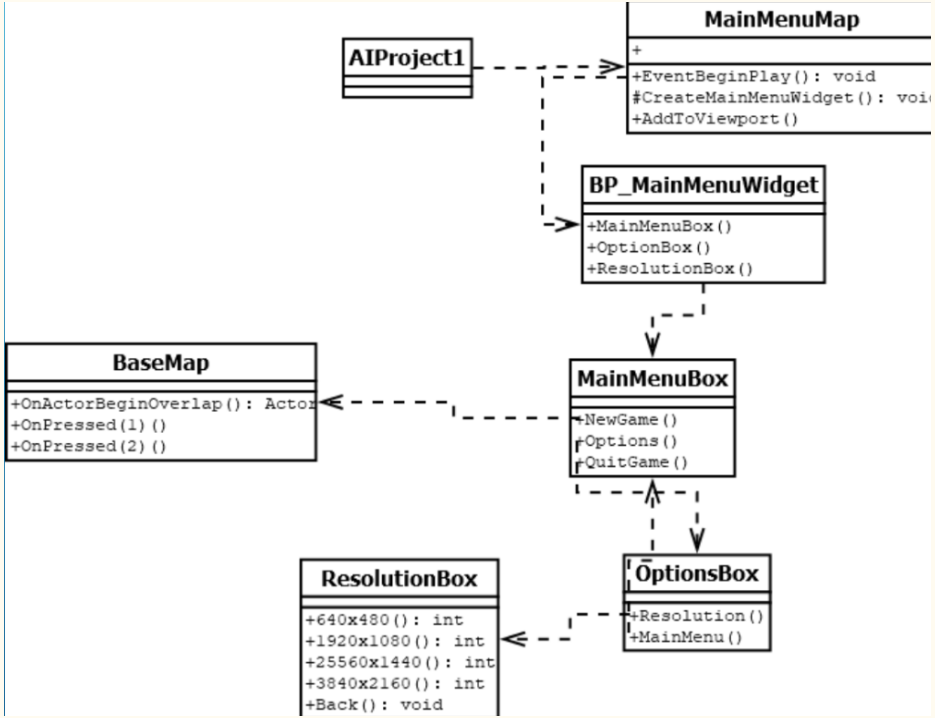
2.3 Description Of Use Case



2.4 Activity diagram



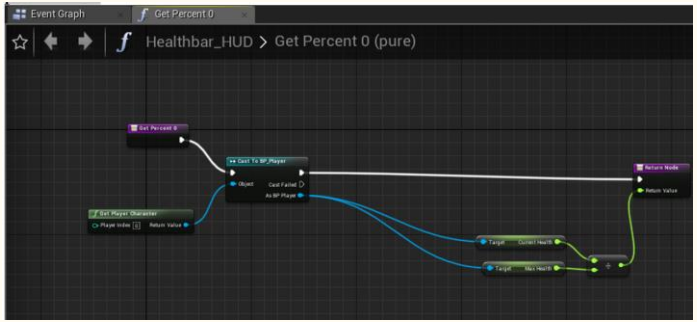
2.5 Class Diagram



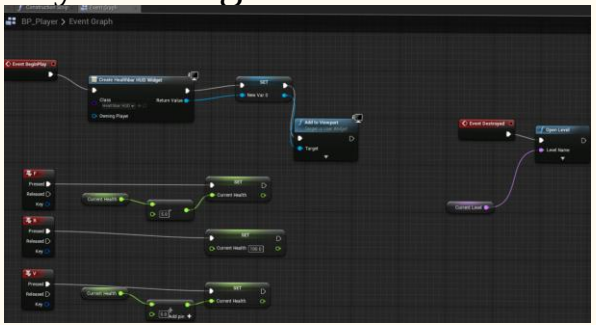
2.6 Module-1: Production

Blueprints and Visual C++

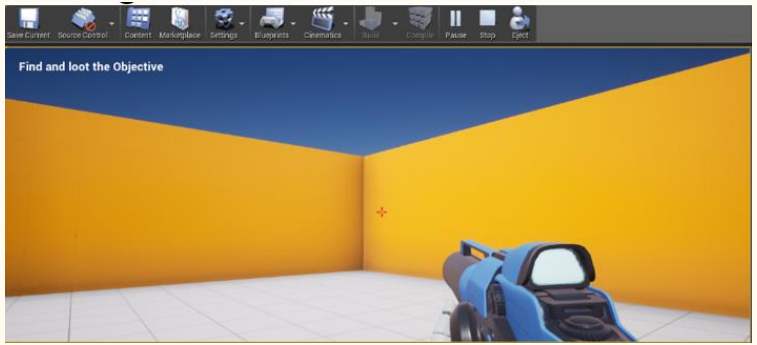
Functions



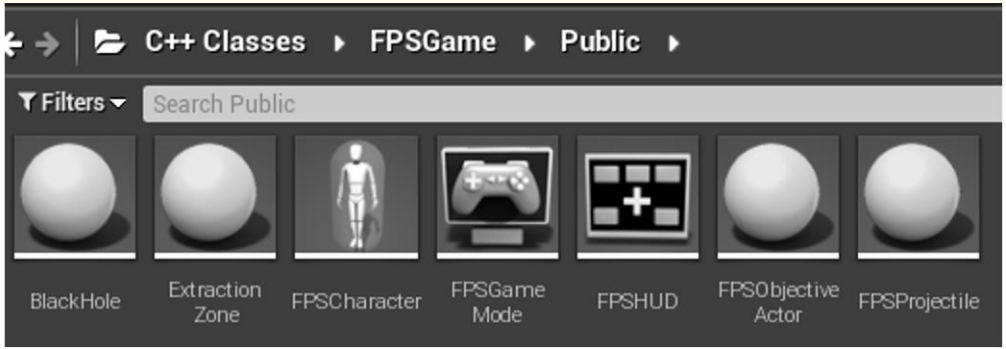
Key-bindings



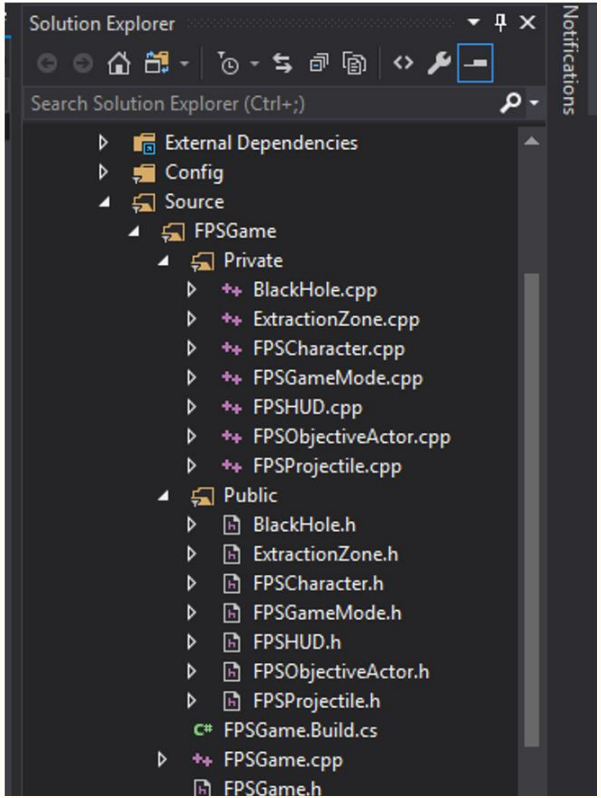
UI and Notifications



C++ Classes as seen from UE4 editor



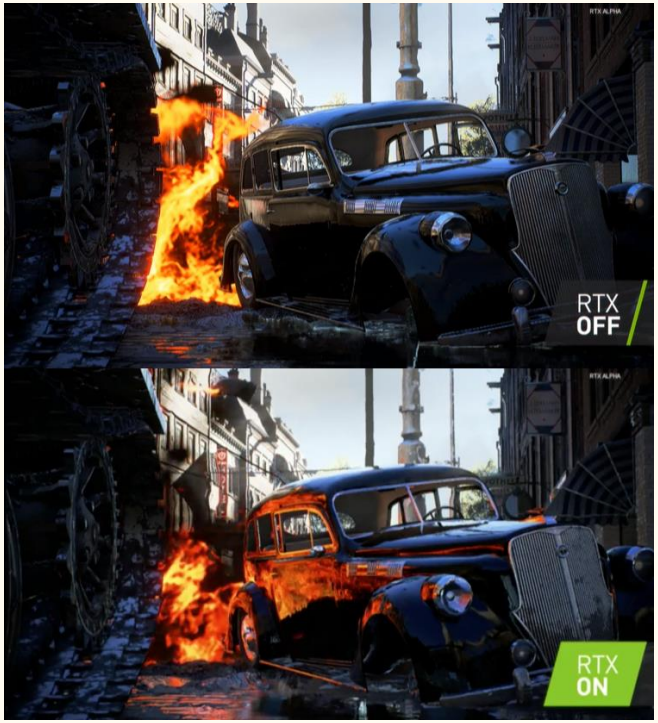
C++ header and source files >



Module-2: Testing

- In this stage, all content used in the previous stage was used for testing purposes. Once the game is packaged and deployed on a dedicated server, it is Beta tested on several platforms in multi-player mode. Here the various bugs and issues such as Spawn-glitches, recoil-control auras, projectile range and accuracy and other pre-rendered components are fixed. The point lights and assets created in the production phase were put to proper use and tweaked if necessary.

Module-3: Post-production



- In this final stage, after gathering enough feedback, the packaged game is compressed in size by removing unnecessary assets, packages and un-used code blocks. It is first checked on all platforms that include Nvidia GeForce RTX or GeForce GTX builds as well AMD Vega and Radeon builds to check for performance.
- The game is then re-rendered to be aesthetically pleasing for all users. Finally, the game is deployed on Epic Games Store as a product.

Conclusion & Future Scope

- The methodologies/phases of game design differ significantly depending on the skill and number of people working on it. These phases differ in some industries in some context, mainly due to the availability of skilled programmers, designers, artists, sound engineers, etc.
- The availability of easy-to-access resources such as Unreal Engine and Visual Studio prove that, given the right time and right people, and using the right methodologies for the project, one could work wonders given the right time.
- Hence, we can say that it is possible to create simple games without too much expense and resources using the right tools (in our case, Unreal Engine).

2.7 References

- [1] Carlos Mauriccio Torres-Ferreyros ; Matthew Alexander Festini-Wendorff ; Pedro Nelson Shiguihara-Jua´rez ,“Developing a videogame using unreal engine based on a four stages methodology”,Publisher: IEEE. https://ieeexplore.ieee.org/document/7836249
- [2] Unreal Engine Documentation https://www.unrealengine.com/en-US/blog/a-new-lookfor-the-unreal-engine-documentation
- [3] Unreal Engine Marketplace https://www.unrealengine.com/marketplace/en-US/store

3.Planning for next semester

—

- Campaign mode
- Multiplayer Gameplay

Thank You