

Rise of the Insurgent: A 3D Game

Afeef Picturewala, Faiz Rabbani, Adiba Shaikh¹, Farida Attar²

¹BE IT, ²Engineer/Professor

8, Saboo Siddik Polytechnic Road, New Nagpada, Byculla, Mumbai, Maharashtra 400008

Abstract - The video game industry is the economic sector involved in the development, marketing, and monetization of video games. It encompasses dozens of job disciplines and its component parts employ thousands of people worldwide. Today's generation is leaning into wrong and dangerous habits just to overcome stress which is bad for the teenage group as well as their parents, we would gleam to introduce this interactive 3d game to them which will act as a stress buster for them and help them build their cognitive skills. Gaming industry today is growing at very great pace. Especially, 3D games are in boom amongst today's generation as compared to 2D games. The main reason of selecting a 3D game is to make the player feel interactive and real which is not possible in a 2D game. This game will have a story where enemies will try to invade the virtually created world and player will fight against the invaders. FPC (First Person Controller) will act as a player in the game. The player can interact with different objects in the virtual world. There will be some computer-generated BOTs (enemies) which will act as an obstacle to the player. The user has to overcome the obstacles in order to complete the level. The difficulty level of the enemy will increase as the user completes more levels. Unity is a new and interactive platform which is mainly used for developing interactive 3D game. Unity5 is the new edition of unity, best development platform for creating 3D games and interactive experiences. Unity 5 supports mainly two languages which JavaScript and C#. Unity5 can be used for creating any type of games which can be played via first controller or a third person controller. By using unity5 an entire virtual gaming environment can be created. The languages used: C#, JavaScript.

Keywords – Development, 3D game, FPC (First Person Controller), Unity5, C#, JavaScript.

I. INTRODUCTION

The computer gaming industry began in the 1970s with Pong and has grown with the progress of computing technology into a billion-dollar industry. [1] Today's commercial games are sophisticated pieces of software and may be written in hundreds of thousands of lines of code. Most commercial games require one to three years to develop in contrast to the development cycle typical of games in past. Most of the development cycle involves initial programming and then lengthy testing and changes to the initial code. Many game developers are concerned with the length of game development cycles, as longer game development cycles mean higher costs and a longer period before there is a return on investment. Recent advances in computing have seen functional languages lead to better

productivity in many industries. It is plausible the video and computer gaming industry may also benefit from the use of functional languages. Functional programming languages offer many advantages compared with the imperative languages that are widely used in this industry. Functional programs are much more concise when compared with imperative programs. They allow for the use of powerful abstractions which can be used to improve structure and modularity of code. Functional languages also allow for polymorphism which promotes the reuse of code and less redundancy in programs. An important aspect of game development is the gameplay. In simple terms gameplay means how a game is played. Many games fail to sell well because the way they were designed to be played does not appeal to the consumer. The prototyping of a game is vital when trying to get a third party to fund or distribute a game before it is completed.

II. GAMING GENRES

A. Action games - Action games emphasize physical challenges that require eye and hand co-ordination and motor skill to overcome. They center around the player, who is in control of most of the action. Most of the earliest video games were considered action games; today, it is still a vast genre covering all games that involve physical challenges.

B. Strategy games - Strategy video games focus on gameplay requiring careful and skillful thinking and planning in order to achieve victory and the action scales from world domination to squad-based tactics.

C. First-person shooter - FPS is a video game genre centered around gun and other weapon-based combat in a first-person perspective; that is, the player experiences the action through the eyes of the protagonist.

D. Sports game - A sports game is a video game that simulates the practice of sports.

E. Puzzle video games - Puzzle video games make up a unique genre of video games that emphasize puzzle solving.

F. A role-playing game - A role-playing game (sometimes spelled roleplaying game and abbreviated to RPG) is a game in which players assume the roles of characters in a fictional setting.

G. A simulation video game - A simulation video game describes a diverse super-category of video games. A simulation game attempts to copy various activities from real life in the form of a game for various purposes such as training, analysis, or prediction. [2]

III. WHY 3D GAME

The age of 2D games has now become past, but there are some developers which are always looking for the 2D games to get the innovative look to the games but in the present

time most of the developers are always developing the 3D games by looking at the interest of the gamers.

There are many advantages of 3D games over 2D games. It depends on the gamer to select the proper games based on the taste and story combination. Designing of the 3D game is also important one for the 3D gamer.

In 3D games the defense games are most popular because it is easy to play for the new player. Same way the online arcade game is so easy to play by the gamer. The developed of the single games or multiplayer games are also popular amongst the gamers because the defense and sport games need more graphics and artificial intelligence in the game. It is easy for the more than one player to play the 3D games with interest. Sport games puzzle games and action type games are more popular amongst the gamers. Sport games are much popular amongst the users. 3D games give better visualization than the 2D games. It is looks very live than the 2D games. There are different types of game are developed in the 3D games designing platforms for the development.

With the changing web technology in the resent era, the new developer is design the game using the better technology. Presently there are various types of 3D games are available online in different categories like sports games, fighting games and many other games needs proper development so developer is always like to develop the games based on the taste of the gamers. It is one of the most essential parts of the gamer to develop the games that are more interactive and easy to play the games in the computer. You must have to use the proper version of 3D game development to make it user-friendly. [3]

IV. EXISTING SYSTEMS

Point Blank is a fast-paced online first-person shooter, which is very similar in terms of gameplay to Counter-Strike. It also features destructible and dynamic environments, as well as deeper character and skill customization options.

In Point Blank, players join either the Free Rebels or CT-Force team (the Free Rebels are based on the Terrorists from Counter-Strike, while CT-Force is based on the Counter-Terrorists). Each team attempts to complete their mission objective and/or eliminate the opposing team. Each round starts with the two teams spawning simultaneously, usually at opposite ends of the map from each other.

A player can choose to play as one of four different default character models (Acid and Keen Eyes for CT-Force, and Red Bull and Tarantula for the Free Rebels). There are four purchasable deluxe character models: Fennec and Pit Viper for CT-Force or Cheshire and Shadow for the Free Rebels. Players are generally given a few seconds before the round begins, or before respawning, to change weapons and/or equipment. It belongs to military genre and was developed by zeppto.[4]

Advantages-

- (i) Free-to-play MOFPS, developed on Zepetto's proprietary iCube game engine (I3Engine), with nine gameplay modes (might vary in local versions) including Deathmatch, Explosion, Annihilation, Search & Destroy, Sabotage, Custom, Escape, AI Mode and a Dino Mode.
- (ii) Extensive weaponry and gear: Real-world military items like bulletproof helmets offer in-game advantages and unique looks, real-world weapons
- (iii) Customizable Characters: Players have the ability to customize four base characters, two male and two females, available for each faction. [5]

Disadvantages-

- (i) Difficult to understand the concept of this game.
- (ii) It depends what you mean by "shot at", A unit with range ability adjacent to an enemy unit cannot use its range ability, it must fire point blank. Therefore, a unit attacked by an adjacent range unit can battle back if it is bold.
- (iii) In this game I found "fire at point blank" misleading as it suggests it is still a range attack. I would prefer simply melee, and just say the range unit isn't as effective in melee than it is with range/other infantry units - hence the no sword/shield "bonus" hit. [6].

V. PROPOSED SYSTEM

The game will start with a story where it will be depicted that enemies which are computer generated BOTs are trying to invade the virtually created world of the game and are trying to cause destruction to nature and mankind. The player will have to rescue the world from the enemies. By this story being shown at the start of the game, the player will know the idea behind the game and the main objective which is to be achieved by the player.

Rise of the insurgent is a first-person shooter game, which will be very similar in terms of gameplay to counter strike. It consists of a virtual environment which will be viewed by the user as First-Person Viewer. FPC is a type of 3D controller game featuring a first-person point of view with which player sees the action through the eyes of the player character. The player can interact with different objects in the virtual world. There will be 2 levels in the game and then 3rd level will be the boss level. The computer-generated BOTs or the enemies in the game will prevent the player to complete the objective. The player must remove all the obstacles in order to complete the level and move to the next level. The next level will have higher level of difficulty and more powerful enemies. Every level will have a different virtual environment. This 3Dgame can be implemented using Unity 5.

Advantages over existing system-

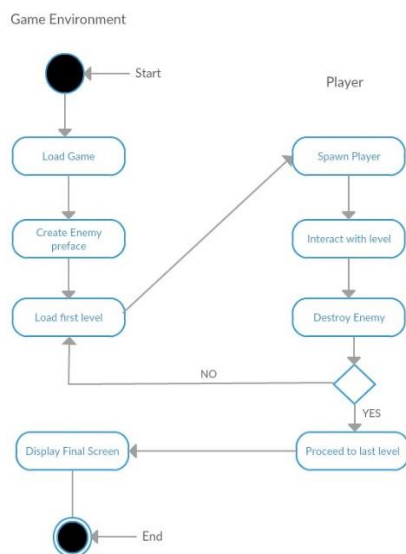
- (i) User friendly game to play.
- (ii) Game will be developed on Unity5 to get high graphics.
- (iii) Ease of control and concept as well.

- (iv) We will be using Artificial Intelligence for Bots according to difficulty level.
- (v) We will make this game with optimum size of a 3D game so that it won't lag even on a small system.

VI. RISE OF THE INSURGENT A 3D GAME

The aim of this project is to develop a game which will be based on a fiction story that will consist of virtual environment. Rise of the Insurgent: A 3D game is a desktop game in which player act as First-person shooter.

The game will have 3 levels with each level having a different virtual environment. The player will start with level 1 and will have to defeat computer generated BOTS in order to proceed to higher levels. Different arms and ammunition will be available in the game which user has to collect in order to defeat the computer-generated BOTS. Player can also interact with different objects in the virtual world. As the player proceeds to higher levels the difficulty level of the game will also increase. The game will have a main player which will interact with the level and needs to accomplish all the objectives in order complete the level and proceed to the next level. The enemy AI in the game will prevent the main player to complete the objectives. The player must overcome all the obstacles in order to complete the level. The next level will have higher level of difficulty and more powerful enemies. The main menu screen of the game will contain options like play game in which there will have to select any one of the virtual environment, settings which will contain options like in-game sound and game controls and exit with the help of which player can quit the game. The game will start with a story where it will be depicted that enemies which are computer generated BOTS are trying to invade the virtually created world of the game and are trying to cause destruction to nature and mankind. The player will have to rescue the world from the enemies. By this story being shown at the start of the game, the player will know the idea behind the game and the main objective which is to be achieved by the player.



Rise of the insurgent is a first-person shooter game, which will be very similar in terms of gameplay to Counter strike. It consists of a virtual environment which will be viewed by the user as First-Person Viewer. FPC is a type of 3D controller game featuring a first-person point of view with which player sees the action through the eyes of the player character. The player can interact with different objects in the virtual world. There will be 2 levels in the game and then 3rd level will be the boss level. The computer-generated BOTS or the enemies in the game will prevent the player to complete the objective. The player must remove all the obstacles in order to complete the level and move to the next level. The next level will have higher level of difficulty and more powerful enemies. Every level will have a different virtual environment. This 3D game can be implemented using Unity 5.

The purpose of this game is to first to benefit all the users by boosting their abilities to greater vision, mental rotation and task-switching. Spending a lot of time reading on a computer is bad for your vision but spending a lot of time playing first-person-shooter games is not harmful for your vision and entertaining at the same time. This game also helps the user to interact with the gaming environment. A epic - role playing experience with multiple levels.

The game will have attractive achievements which will increase user's interest in the game. As the game requires fast reactions from the player, the game will provide user to increase response time and agility. The game will provide entertainment for today's young generation as today's youth's main source of entertainment is computer and mobile games. The prime objective of our project is to create game with minimum requirements with high level graphics.

Rise of the Insurgent: A 3D game will be a full-fledged working game which would provide an interactive user experience and prime entertainment for its users. The user will not only find third game entertaining, but also, he can interact with the whole new virtual environment. This game will have different animations which are created inside unity which can be controlled by the user at the runtime.

The game will be developed using game developing engine called UNITY. Unity is interactive platform which is mainly used for developing interactive 3D games developed by Unity Technologies in Denmark. Unity integrates a custom rendering engine with the NVidia PhysX physics engine and Mono, the open source implementation of Microsoft's .NET libraries. Unity 5 is the new edition of Unity. Unity 5 supports mainly two languages for programming and implementing the graphics of the game which are JavaScript and C#. Improved efficiency of the Unity makes the hard work smoother and more fun, and with the industry's most comprehensive multiplatform support. Unity 5 can be used for creating any type of game which can be played via first person controller or third person controller. By using Unity an entire virtual gaming environment can be created.

VII. GAMING TECHNOLOGY

Basic Components of Gaming –

User Input: the user input is given through keyboard and mouse. There will be specific keys for controlling the movement of the player and also other inputs like sound settings can be done with the help of mouse. The input given by the user will have impact on the game's virtual environment.

Game Logic: the game logic is coded and designed using unity editor and monodevelop IDE.

The difficulty level of the game will increase with higher levels. The player will have the defeat all the enemies to proceed to next level. The final level will be the boss level and most difficult level of all.

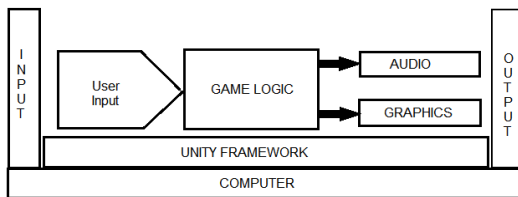


Figure 1: Basic Components of Gaming

Audio and Graphics: the audio and graphics are created using external software's such as Maya editor.

Unity framework: the framework consists of IDE Monodevelop which consists of JavaScript and C#. JavaScript will be used for animation and graphics in the game and C# will be used for programming of the game. We will also make use of another application such as blender to create a 3d character in the same and then import that unity5.

VIII. FUTURE OF GAMING

This game play is the most emerging technology in the world. This technology also reduces the overhead of creating virtual environment and character design. First-person shooters often focus on action game play with fast-paced and firefights. Games provides entertainment as well as increase in faster and more accurate attention allocation, higher spatial resolution in visual processing and enhanced mental rotation abilities. Playing such game enhances problem-solving skills and critical-thinking. Video games can be great way to test our brain and learn to overcome different problems and obstacles.

Playing such games will help a person to reduce the stress and pain. People come from a long day at school or work, and they can relax and unwind by playing such 3D video game.

IX. UNITY 3D

Unity 3D is the latest and currently growing game engine for game development used by many leading game manufacturers and developers for game designing and creation. Unity 3D is a multi-platform, cross-platform, integrated IDE for scripting games, and working with 3D virtual worlds. Unity is notable for its ability to target games

to multiple platforms. Within a project, developers have control over delivery to mobile devices, web browsers, desktops, and consoles. It is easy to use and consist of powerful tools that are convenient for game file generation.

Unity 3D Basics:

- (i) Scene: Scene is same as Hierarchy which is same, just different views, that are editable (design-time) to edit 3D game objects in the current scene.
- (ii) Hierarchy: Text list of game objects and sub-objects in the current scene.
- (iii) Inspector: Properties for currently selected.
- (iv) Game: Preview how game will look when executing.
- (v) Project: Contents of Project 'assets' folder (i.e. files in that folder)– library of scripts, digital media files, and scenes.

Games using unity:

- (i) BattleStar Galactica Online
- (ii) Family Guy Online
- (iii) Dead Trigger
- (iv) Temple Run 2
- (v) Angry Birds 2
- (vi) Firefly Online
- (vii) Ghost of a Tale

The user-based comments in the form of text are classified into positive or negative or neutral dictionaries and comments in the form of emoticons are classified into positive or negative by parsing the words in each comment. Each parsed word is then matched with the dictionary, if the match is found in any of the positive or negative or neutral dictionaries then the count increases else if the match is not found then it is auto-added in the neutral dictionary and the polarity of these auto added words can be determined with the help of considering the polarity of its neighbouring words. We have used Unity 3D game engine for our project. [7].

X. CONCLUSION

Rise of the Insurgent: A 3D game will be a full-fledged working game which would provide an interactive user experience and prime entertainment for its users. The user will not find third game entertaining, but also, he can interact with the whole new virtual environment. This game will have different animations which are created inside unity which can be controlled by the user at the runtime. This paper includes Unity 3D game engine used for learning different virtual reality concepts. Unity is powerful, complete game development system with scripting to control animations or scene changes etc. Also, the environment can be used for training and knowledge evaluation purposes. Future developments will include additional basic and complex Game objects. Also, the project can be extended on Android devices (mobile phones and tabs), displaying the highest score worldwide, introducing multi-players and updating new characters.

XI. REFERENCES

- [1]. https://en.wikipedia.org/wiki/History_of_video_games
- [2]. https://en.wikipedia.org/wiki/List_of_video_game_genres
- [3]. http://www.streetdirectory.com/travel_guide/137876/gaming/key_advantage_and_difference_between_3d_games_and_2d_games.html.
- [4]. [https://en.wikipedia.org/wiki/Point_Blank_\(2008_video_game\)](https://en.wikipedia.org/wiki/Point_Blank_(2008_video_game))
- [5]. <http://www.fpsreport.com/games/point-blank.html>
- [6]. <https://boardgamegeek.com/thread/143413/could-someone-outline-disadvantages-point-blank>
- [7]. [https://en.wikipedia.org/wiki/Unity_\(game_engine\)](https://en.wikipedia.org/wiki/Unity_(game_engine))