Making a Game using Unity3D

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Abstract— In today's huge gaming industry action games are nothing new and neither is puzzle games or mazes, these things have been a part of gaming for a long time. But rarely is it that these things are properly meshed together and even if they are, the most they focus on is a single aspect among the three. There are many different examples for this and if you're an avid gamer, a few titles might have even popped up in your head. We're not proposing that these are necessarily bad or shouldn't be a part of gaming as we know it. Now, what we propose is a type or genre of gaming where a learning process is not a gimmick that the game has but rather a core part of what gaming is as a whole. With the game we are making, even though this is our first time developing a game, we are all gamers and would like an experience that is both fun and educational. Our game is a combination of all these and if the future allows it, maybe a lot more.

Keywords: Unity3D, Game Engine

I. INTRODUCTION

A video game is an integral part of our lives today. Each and every single person has played at least one game in his/her life and that is a very conservative number. Since today's generation has a powerful computer in their pockets, it's no longer necessary to sit in front of a TV or a console to play a game, one can do so in the palm of their hands. Video games are no longer a thing that only a certain group of people used to play; it has become a worldwide phenomenon. So, with that thought let us first understand what a video game is. A video game is an interface that gives the player control of a scenario in which, with the help of the player's input a certain outcome is generated. Usually one would need a platform to play a game, but nowadays that platform can be anything, a mobile phone, a computer, a dedicated console or anything else in between. These platforms usually have something called a "Game Engine" that can be used to develop a game for that particular system. Major companies have their own engines that they use to make games, but for the individuals who don't have the time or budget to create such a system, there are many other options. There are many options for such individuals who provide such engines for a low price or sometimes even completely free.

One of such engines is Unity Engine, which we will be using to make our game. Unity isn't completely free but it still provides many features that are satisfactory for the use of students and hobbyist. They can use this engine for free as they are not selling these games, or if their profits don't reach a certain margin. If this is not an option for people then there is an alternative called Unreal Engine, which unlike Unity is completely free of cost.

A. Unity3D:

It is a cross-platform real-time engine developed by Unity Technologies. It can be used to create both 2D and 3D games; it can also be used as a physics emulator and used for simulations and animations of different kinds. The main language supported by unity is C#. It used to support Javascript at one point but they don't anymore as the version that supported it, unityscript is no longer supported. This engine is supported by both windows and MacOS, and a version for linux is in its experimental stage.
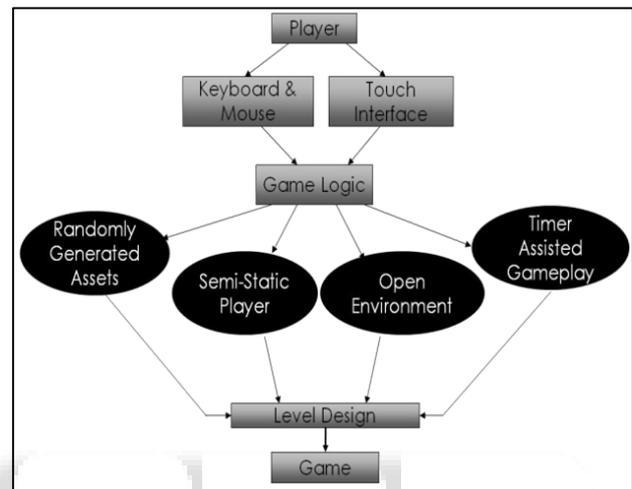
II. PROPOSED SYSTEM

Fig. 1: Architecture of a Typical Game

A. System Requirements

For development
OS: Windows 7 SP1+, 8, 10, 64-bit versions only; macOS 10.11+
Server versions of Windows & OS X are not tested.
GPU: Graphics card with DX10 (shader model 4.0) capabilities.

B. Our System

OS – Windows 8.1
RAM – 8 GB DDR3
CPU – Intel Core i5
GPU – nVidia Grforce GTX 1050 ti w/ DirectX 11+
HDD – 500 GB

III. OUR PROPOSED SYSTEM

There isn't a game that focuses on action and the learning process at the same time, what we did is make a game where the learning process isn't a mere gimmick but part of the whole gaming process. We have taken the most action-oriented game genre –Shooters and combined them with their polar opposites –Mazes and Puzzles. The game will have an action and learning element game oriented gameplay, the player will be bombarded with enemies while he either tries to solve a puzzle or get out of a maze. The first level of our game is designed to have a maze filled to the brim with rapidly re-spawning enemies and traps, which the user will have to overcome to complete the game. We know that video games already have a positive effect on the reflexes of a person; these things have been proven by multiple surveys

done by respected universities, so we shall take them as accurate. Then if the games already have an effect of improving the hand-eye co-ordination of a person, then it should also help by improving the mental health of a person, because games today have a bad rep for wasting people's time and making people dumb, it's time we try to change that.

IV. CONCLUSION

The game proposed in the document will be a prototype created with the idea presented above. In today's bigger picture, gaming can be a very powerful learning tool. They are something that can be designed with every important detail in mind, and this in turn gives them the power to express ideas in a way that is not possible in various other methods. They can also be interactive, which is the most optimal and fastest method to learn anything. Games have the power to do that, so in conclusion we would like to say is that there is a need for a new genre where learning can coincide with enjoyment while playing a video game.

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The following are a few things that we kept in mind while making this document.

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