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ALMA - A Story Based 2D Game Using Unity

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Abstract:- Computer gaming is a key component of the rapidly growing entertainment industry. Building computer games has typically been a commercial endeavor, we believe that designing and constructing a computer game is also a useful activity for educating us about geometric modeling, rendering, collision detection, character animation and graphical design[1]. Moreover, building an advanced game provides us exposure to the real-world side of software engineering that they are typically shielded from in the standard computer class. Our project is a story based 2D game. The game is developed using unity and various other tools such as blender to model[2]/animate/cutscenes and photoshop[3] to design/concept art. The game delivers dynamic story telling and environment. The story is set in a dystopian era with dark elements clearly indicating the dreary and horrific background of the game. The story switches between characters that lives in totally different eras. The game is strictly linear and not open-world but the players will have various side quests that will help towards finishing the main game. The story is set in chapters and genre of the game is horror/adventure. The programming language going to be used is C# (for unity)[4]. The game will be released in two parts with the initial release covering first two chapters.

I. INTRODUCTION

2D games are also known as Platform game. The word platform describes that something held on a platform. Here the player can run, jump, shoot, collect powers on a platform. In 2D gaming, there are two types of perspective i.e.

- First person shooter/perspective
- Third person perspective

Orthogonal view is arranged in level editors here it is dividing the screen into small squares which are called tiles. The simplest view to implement as game developers is the orthogonal view because its map coordinate matches screen coordinates and game objects or sprites can easily be manipulated.So we use orthogonal view for our game[1].

Our primary objective is to create a story based 2D game and the genre of the game is adventure and horror. In particular we are exposed to the practical issues surrounding topic such as geometric modeling, rendering, collision detection, character animation and graphical design. Moreover building an advanced game provides us exposure to the real world side of software engineering that they are typically shielded from the standard computer class. Our game delivers a dynamic story telling and environment, The story switches between characters that lives in totally different eras. The game is strictly linear and not open world but the players will have various side quests that will help towards finishing the main game. The game will be released in 2 parts with the initial release covering first 2 chapters.

II. EXISTING SYSTEMS

Demon's Souls

Demon's Souls[5] is an action role-playing game developed by Bluepoint Games, with assistance from Japan Studio, and published by Sony Interactive Entertainment.

Our game will feature a similar saving system to that of Demon's Souls where the player sits at a bonfire/campfire and the game saves the data. Also, the player will lose all progress upon death and the player has to retrieve the lost items. A second death before retrieval will result in losing items permanently. The players must be more cautious when it comes to retrieving the items to avoid death. The items lost will always be non-essential to the quest/plot, therefore the player can continue the run.

Don't Starve

Don't Starve[6] is a firm wild endurance game brimming with science and magic.Where we can play as Wilson, an intrepid Gentleman Scientist who has been trapped by a devil and transported to a mysterious wild world. Wilson must learn to exploit his environment and its inhabitants if he ever hopes to escape and find his way back home. Our game will feature similar play-styles as that of Don't Starve:

- Uncompromising Survival and World Exploration: No instructions. No help.No hand holding. Start with nothing and craft, hunt, research, farm and fight to survive.
- Dark and Whimsical Visuals: 2D characters and odd creatures inhabiting a unique 3D world.

Skyrim

Skyrim[7] is an open world action role-playing video game created by Bethesda Game Studios and distributed by Bethesda Softworks. It is the fifth primary portion in The Elder Scrolls arrangement, following The Elder Scrolls IV: Oblivion, and was delivered worldwide for Microsoft Windows, PlayStation 3, and Xbox 360 on November 11, 2011.

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The game's primary story spins around the player's character, the Dragonborn, on their mission to crush Alduin the World-Eater, a mythical beast who is forecasted to obliterate the world. The game is set 200 years after the occasions of Oblivion and happens in Skyrim, the northernmost territory of Tamriel. Throughout the span of the game, the player finishes missions and fosters the character by improving abilities. The game proceeds with the open-world practice of its archetypes by permitting the player to travel anyplace in the game world whenever, and to disregard or defer the principle storyline inconclusively. Our game will include a similar: Combat framework, Weapon wheel, Stamina framework as that of Skyrim.

III. PROPOSED METHOD

1) Creating character models using photoshop and blender(assets)
2) Creating a unique and custom environment for the game (assets)
3) Level designing (editor)
4) Concept art using photoshop (optional)
5) Animation/rendering/cutscenes
6) Menu ui/animation
7) Soundtrack - menu/game
8) Story writing/dialogue writing/voice acting
9) Scripting Languages: C#
10) Game Engines: unity
11) Rendering: Blender

Fig. 1. Main Menu.

IV. SYSTEM MODULES

The system is divided into six modules namely, Game Mechanics, Level Design, Characters, Keyboard/Controller Configuration, Main Quests, Side Quests.

- **Game Mechanics**

Game mechanics are the principles that administer and guide the player's activities, just as the game's reaction to them. A game's mechanics consequently viably determines how the game will function for individuals who play it.All games use mechanics; nonetheless, there are extraordinary hypotheses regarding their definitive significance to the game. As a rule, the cycle and investigation of game plan are endeavors to concoct game mechanics that take into account individuals playing a game to have a drawing in, yet not really fun, experience. The association of different game mechanics in a game decides the intricacy and level of player collaboration in the game, and related to the game's current circumstance and assets decide game balance.

- **Level Design**

Level design is a control of game advancement including making of computer game levels, areas, stages, or missions.This is normally done utilizing a level editorial manager, a game improvement programming designed for building levels; in any case, a few games highlight worked in level altering devices.

Level design for every individual level in a cutting edge game commonly begins with idea craftsmanship, portrayals, renderings, and actual models.Once finished, these ideas change into broad documentation, climate displaying, and the putting of game explicit substances (entertainers), as a rule with the guide of a level editorial manager.

- **Characters**

A game character is a person or any other entity acting in a game. Here there are mainly 3 characters that is 1 Playable and 2 Non-playable characters. The playable character is Trevor and he is controlled by a player.The Non-playable characters are Priest and Tiffany they were controlled by a game-master.

- **Main Quests**


Fig. 2. Lighting.

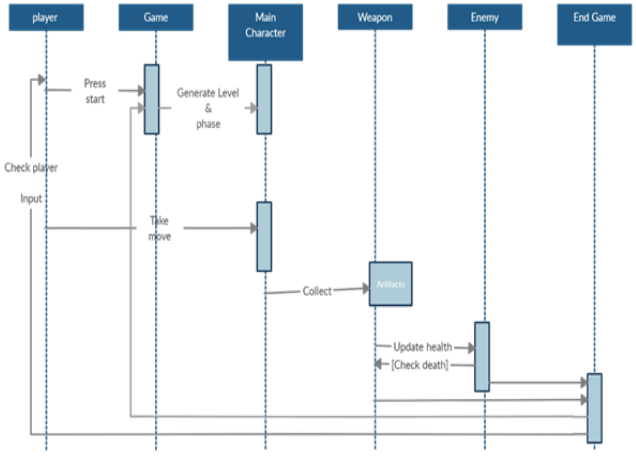

Fig. 3. System Design.

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Find the main character (playing as the Priest) and it sets out to do various quests set by the Priest. The Main character is asked to retrieve the artefacts and On retrieval, the game takes a new turn.

- **Side Quests**

Side Quest is all about Collecting firewood/food/items Fighting with enemies and Clearing Paths

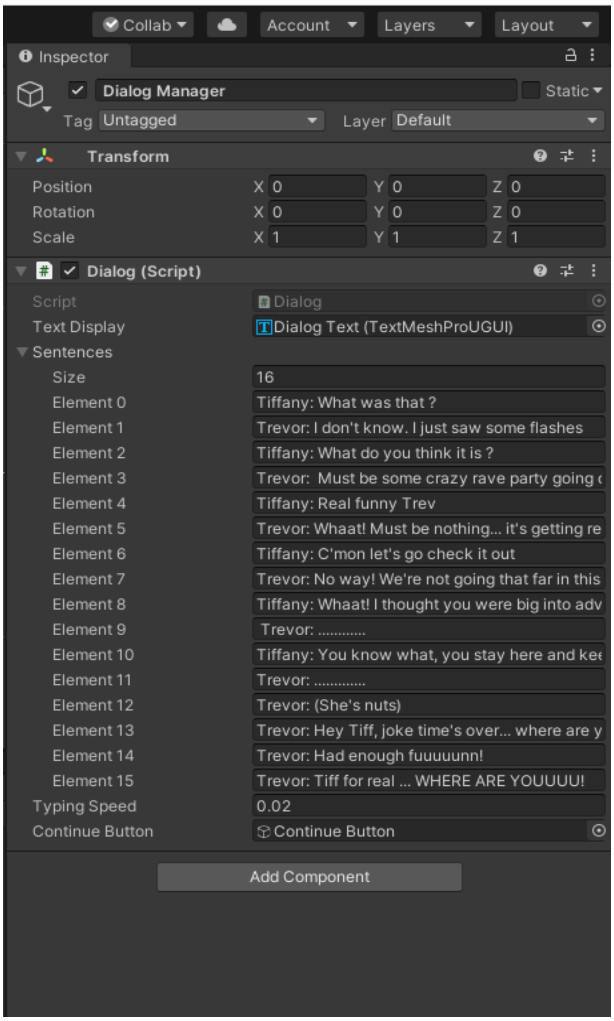

Fig. 4. Dialog Manager.

V. TECHNOLOGY USED

- Blender[2]
- Photoshop[3]
- Unity[4]
- Scripting Language : C#
- Digital audio recording : Ardour
- Audio editing : Audacity

VI. CONCLUSION

The aim of the project is to create a 2.D game.The story of the game is set in chapters and genre of the game is horror/adventure which Provides an important overview of the technologies available to make game development a simpler process. This game will take the player on a journey of adventure and exploration through multiple levels and scenarios.In future we are planning to extend levels,improve graphical performance, add new features(outfits, NPCs, etc.), environment and additional cutscenes.

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