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Project and Professionalism

(6CS007)

Project Proposal

The Game “Fractured Memories”

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# Abstract

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# Introduction

This project is game development which is related to open-world gameplay. It aims to create a 3D platform open-world game named “Fractured Memories”. This open-world adventure game re-unities the mission of the family, the characters will have to survive in the wild with some skills and their available resources. This project focuses on a dynamic environment. The game has a realistic feature of change in time and weather of the game environment. The narrative will evolve alongside the changing time and weather. Within this game the player will be able to interact and collect the resources available. The game will consist of Non-Pedestrian Characters (NPCs) making the game more realistic.

The targeted audience for this game primarily consists of individuals who have a keen interest in open-world gaming experiences, particularly within the survival game genre. The game will cater to a sense of freedom and exploration, allowing players to interact with the dynamic and unpredictable virtual world. This is the proposed overview of the game where the players can also gather things available, and based on different tactics the player needs to survive.

# Aims and Objectives

## Aims

1. The player can feel nature and enjoy the gameplay without any restrictions.
2. This game will help the player to know the survival and crafting skills which can be related in the real world.
3. This game also has some quests and missions which will help to increase the general knowledge and IQ of the player.
4. The game can help in releasing stress and improve self-satisfaction on winning different stages of the game.
5. The game will help players to live a life inside an environment where they can experience a world they would enjoy.

## Objective

1. To provide the player with the opportunity to play the game with their own choices whether they want to continue the mission or explore the world.
2. To develop a 3D open world game using Unity and Blender.
3. To implement a realistic environment where the player can experience day, night, and season change.
4. To implement survival tactics and character growth in the game while playing and experiencing it.

# Problem Statement

Game enthusiasts face device compatibility issues since different platforms may have different specifications which can lead to difficulties in making games work consistently across different platforms. The gamers do want to experience a game that can help boost their mood and help them to tackle stress, loneliness, and depression. The game that has been proposed will help players to interact in an open world. Players do enjoy a game where they are free to do anything. This gives them a sense of freedom and joy in exploration.

# Project as Solution

As the character progresses through the story, the skills and ability of the character will develop, providing players feel like they made progress and achieved something in the real-world. This game will motivate the player to explore the expansive world of the game, discovering hidden locations and exciting encounters. Lastly, this game will deliver some feelings of importance, loss, love, and happiness to the player.

# Scope and Limitations

## Scope

1. This is an open-world game, the player will have freedom to make significant decisions that will impact the gameplay and can explore the world without any restrictions.
2. A game for gamers with low specifications computer interested in open world games.
3. During the gameplay, the player might get stuck at some point if the character is unable to solve the quests which may decrease the interest of continuing the game. Also, some unidentified bugs may also ruin the gameplay.

## Limitations

1. Although this is an offline story-based game, we can still face the optimization issues for the less powerful system of the player.
2. Budget constraints may affect the ability to acquire assets like trees, cars, and other environmental elements in the developmental phase.
3. As an individual developer, challenges in debugging, identifying the bugs and glitches can be time consuming and complex.

# Literature Review

## The Development of 3D Survival Simulation Game for Identifying Safe Food and Water in Borneo Forest (Kurniawan, et al., 2020)

Traditional methods of teaching survival skills, especially the ability to identify safe food and water in challenging environments often rely on verbal approaches, which may not properly convey practical information to students. Researchers have investigated the use of games as an alternative and useful learning medium to address this restriction, particularly simulation games. This literature review aims to examine the development and effectiveness of a 3D survival simulation game designed to teach players how to identify safe food and water in the Borneo Forest.

The concept of this game was developed based on the learning material, teaching method, gameplay, setting, and plot. The main scenario of this game is Borneo Island, known for rich flora and natural beauty, making it an ideal location for adventure. The research aimed to address this issue by using a simulation game to help players distinguish between edible and toxic substances.

The game involves four missions, each increasing in complexity and difficulty. These missions teach players different techniques for identifying safe food and water, such as recognizing plant characteristics and performing irritation testing. In the material collection stage, the researchers collected images, 3D objects with textures, 3D characters, audio, and animations needed for the game. Most 3D assets were obtained from Unity Assets Store, and any necessary modifications were made using Blender. The assembly stage involved the actual game development using Unity game engine and Visual Studio as a source code editor.

# Artifacts

## 3D Assets

3D assets include the characters, vehicles, buildings, objects, trees, and other visible game objects that the player will be able to see while playing the game.

## UI/ UX

This will help in the interaction of the player character model with the 3D assets that are available in the environment.

## Audio Assets

The audio effects such as in game interaction sound, realistic player movement sound, the sound of vehicles and background music will be the artifacts.

# Software Development Methodology

Software development methodology is a structured and organized process of developing high-quality software quickly and efficiently. The development phase consists of different stages from problem identification, planning, designing, building/ developing, testing, and then deploying the final product. The whole process in software development methodology is called Software Development Life Cycle. SDLC aims to avoid common mistakes in the development phase. The common SDLC models are waterfall method, spiral method, agile method (Alexandra, 2023).

To seamlessly track and manage this project, Kanban methodology for software development will be followed. Kanban is a term from the Japan that means billboard or signboard. The kanban methodology signifies its meaning as the major principle of Kanban is to visualize the work status and progress using the boards. Instead of dividing the work in teams, the stakeholder can add request to the backlogs. Kanban and Scrum are two agile approaches where Kanban doesn’t define roles focusing on cycle whereas scrum has fixed length sprints, specific roles (Mijacobs, et al., 2022).

# Tools and Technologies

## Unity

Unity is a powerful tool used by many game developers to create and enhance their games. It is a game engine that provides tools for creating the core functionality of games and serves as an integrated development environment (IDE), helping in coding, designing, and managing the game elements. Some of the games made with Unity are Temple Run, Monument Valley, Ori and the Blind Forest and many more (Sinicki, 2021).

## Blender

Blender is a free and opensource software that helps in creating 2D and 3D elements, characters and many other objects that require 2D or 3D modeling. Blender is mostly used in video, filmmaking, game development, architecture. Blender will be used to animate the characters and design the models and assets of the game environment.

## Photoshop

Adobe Photoshop is a software that is mostly used for editing, manipulating the photos and graphical contents. It is used by designers, photographers, artists, and other creative background individuals. In this project, photoshop will be used to create the buttons and images used in the game.

## VS Code

VS Code is a code editor software developed by Microsoft. This is a good choice to interpret codes due to tis extensibility, flexibility, and many features that help coding seamlessly.

## C#

C# programming language will be used as the fundamental game development language helping in implementing game logic with high efficiency. It can be utilized in the Unity Game Engine for scripting, offering the ability to implement game logic, physics, user interaction, and more (Kamau, 2021).

# Conclusion

In conclusion, the proposed project aims to create an engaging open-world 3D platform game that immerses players in dynamic and unpredictable virtual worlds. By offering freedom of choice and exploration, the game seeks to cater to diverse audiences, impact survival and crafting skills, and enhance players critical thinking ability.

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