PROJECT TITLE

LOVE MAZE

A Project Report Presented to Department of Information Science (Data Science)

Professor:

Dr. Sharad Sharma

University of North Texas

In Partial Fulfilment

Of the Requirements for the Class

INFO 5900 VIRTUAL REALITY AND ITS APPLICATIONS

GROUP MEMBERS:

| NAME	STUDENT ID
Sai Vishal Thota	11583571
Swetha Garnepudi	11557772
Harini Pogaku	11607941

CONTENTS

ABSTRACT:

The goal of the Love Maze VR project is to develop an immersive and compelling virtual reality experience that challenges users to find their love interest by navigating a maze. There will be a maze structure in the virtual environment with different obstacles. To create a realistic and romantic ambiance, the scene will be developed utilizing 3D modelling tools, such as 3ds Max or Google Sketchup, Unity Assets, and various textures, materials, and lighting effects. Additionally, landscaping components like trees, plants, and water features will be used to give the area a beautiful, natural appearance. To create a more romantic ambiance, heart shape animations have been added. The project attempts to give the player a distinct and good experience using a maze structure. The Love Maze VR project's overall goal is to give players an immersive and compelling experience as they work their way through a maze to find interesting game findings, utilizing virtual reality technology to improve the experience.

INTRODUCTION:

Using unity virtual environment, a maze has been built. The environment of the game is assumed to be a love island which has assets related to the nature. The male and female avatars are the main characters that runs the game. There is no specific point for the characters to succeed the game. In a standard love maze game, you must make your way through a maze-like layout to find your love interest or a partner. The main goal of the game is to find your love interest waiting for you at the end of the maze after completing the maze. Finding the right route through the maze while avoiding dead ends is required. To go through the maze, you might need quick reflexes and strategic thinking. Overall, the backdrop of a Love Maze game is created to be a romantic and captivating, challenging the player's navigation, problem-solving, and strategic thinking abilities while keeping them interested and immersed in the game.

IMPLEMENTATION:

Navigation: The player can find their way through the maze. The player will be able to look around the environment by using the controllers to look left and right, move forward and backward, and move left and right.
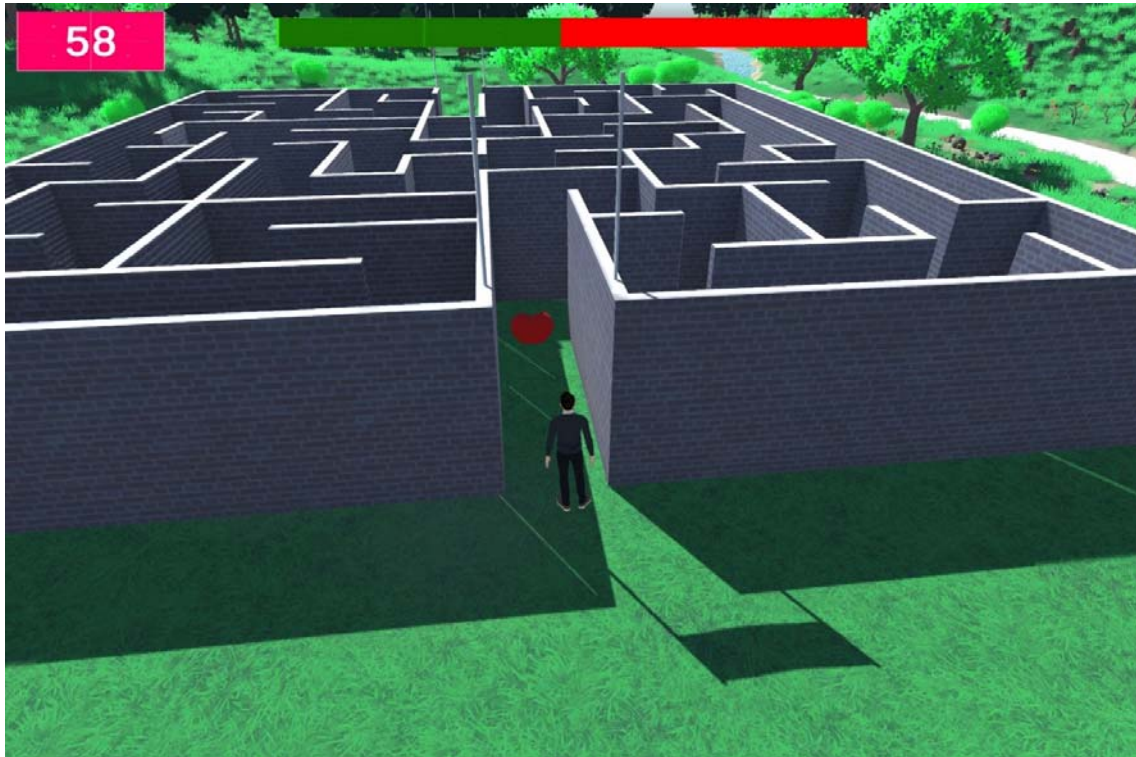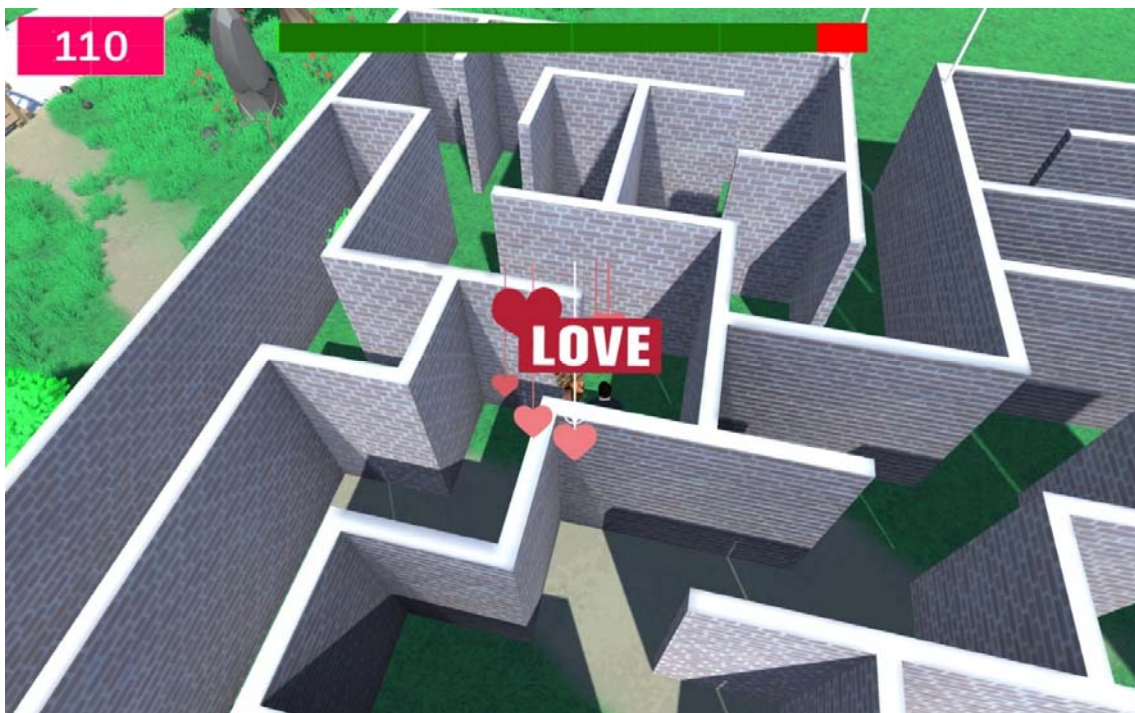
Interactions: Using the controllers, the player can engage with elements of the surrounding environment using keys.

MAZE GAME

CREATE ROOM	Enter text...
JOIN ROOM	Enter text...

LEVEL FAILED

HOMES

Aesthetics: The setting are developed using a variety of different textures, materials, and lighting effects to produce an intimate and immersive ambiance. The textures will be applied to the walls of the maze so that the environment has the appearance of being real.

Audio: The surroundings will have various sounds and music playing in the background to help set the mood and contribute to the overall vibe. Realistic and immersive sound effects are going to be produced for this game, which will make the overall experience more interesting for the user.

ACKNOWLEDGEMENTS:

REFERENCES:

https://www.studytonight.com/3d-game-engineering-with-unity/maze-game

https://www.youtube.com/watch?v=wZLoyxmTDkg

https://play.google.com/store/apps/details?id=com.hgame.mazes&hl=en_US&gl=US&pli=1

https://lagged.com/en/g/maze-lover

GOALS AND OBJECTIVES:

To design a virtual reality experience which is immersive and entertaining, with the goal of challenging players to find their way through a maze to the person they love.

• To create a setting that is visually beautiful and offers a romantic and immersive mood for the player to experience while playing the game.

• To give the player an experience that is both tough and entertaining using a variety of capabilities, such as navigation, interactions, sounds.

• To build a high-quality virtual reality experience by utilizing the Unity game engine and VR technologies.

• To offer the player a fresh and challenging experience each time they play the game by randomly generating new structures within the maze.

MODELLING:

The envisioned virtual environment for the "Love Maze VR" application is a surreal and visually captivating space designed to evoke emotions and create an immersive experience. It combines elements of a maze with multiple dimensions, incorporating various architectural structures, natural landscapes, and interactive elements.

Geometry and Textures:

The geometry of the environment consists of intricate and complex shapes, including winding pathways, interconnected rooms, and portals that lead to different dimensions. The use of textures, play a crucial role in creating an otherworldly atmosphere. These textures will range from vibrant and surreal colours to ethereal and dreamlike patterns, enhancing the sense of wonder and enchantment.

Animations and Behaviour:

Animations are employed to bring the virtual environment to life. Objects within the environment, such as trees, flowers may sway gently or react to user interactions.

Functionality:

The primary purpose of the "Love Maze VR" application is to provide an immersive and interactive experience for users. It aims to engage users emotionally and intellectually by presenting them with a maze-like environment that challenges their navigation skills and problem-solving abilities.
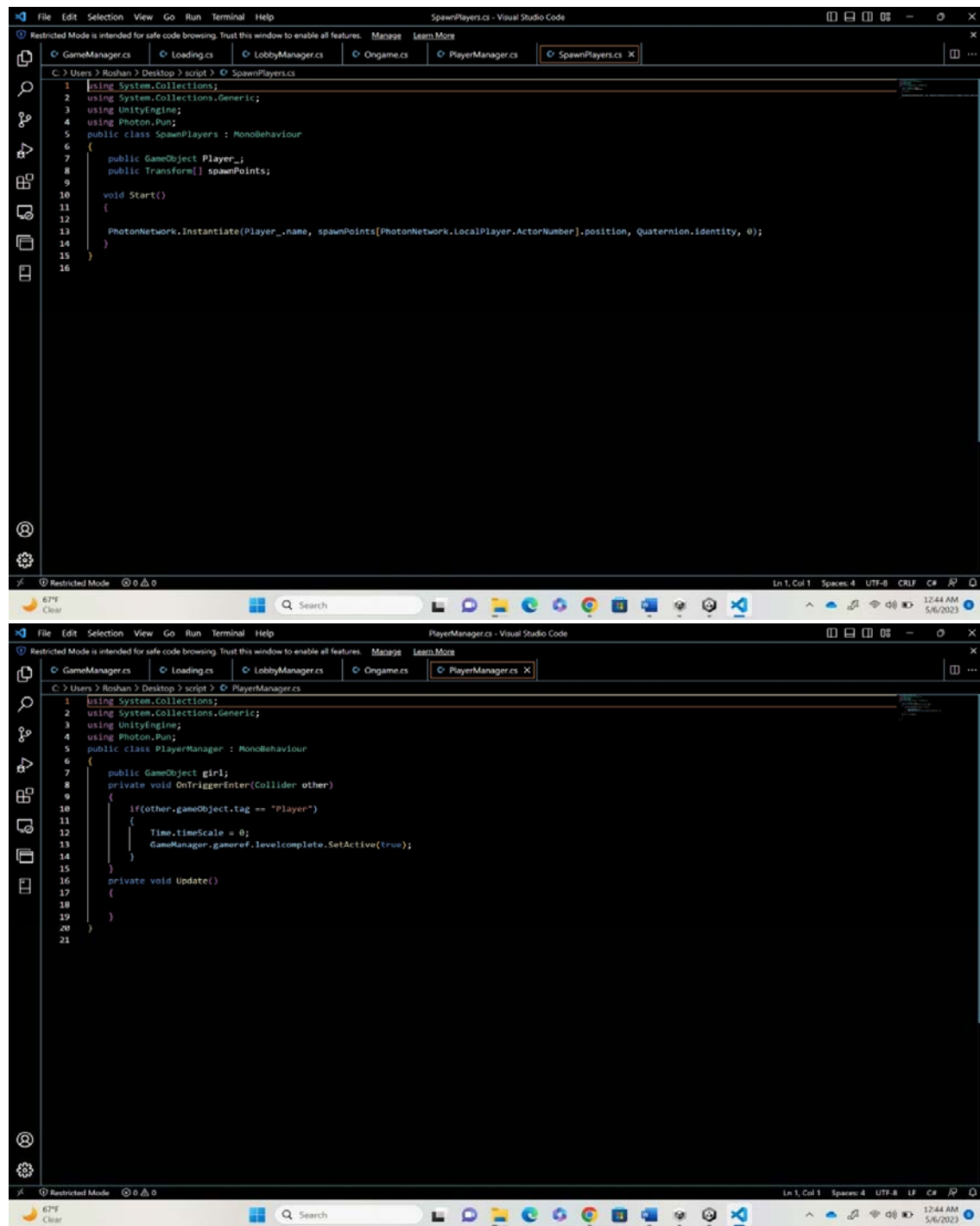
Users and Interactions:

The application is designed for users who are interested in exploring virtual environments and experiencing unique and immersive worlds. Users will navigate the virtual space using virtual reality (VR) equipment, such as VR headsets and controllers. They can interact with objects and elements within the environment through hand gestures or controller inputs, enabling them to solve game.

Modelling in unity:

The modelling process for creating the "Love Maze " environment is done using 3D modelling software unity. This tool allowed designers to create and manipulate 3D geometry, apply textures, and set up animations. The software provides a range of tools and features for precise modelling, texture mapping, and animation workflows, enabling the creation of complex and visually appealing virtual environments. Designers can use these tools to build the maze structure, place objects, apply textures and materials, and define animations and interactions within the virtual space.

PROGRAMMING:

```csharp
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
using Photon.Pun;
public class SpawnPlayers : MonoBehaviour
{
    public GameObject Player_;
    public Transform[] spawnPoints;

    void Start()
    {

        PhotonNetwork.Instantiate(Player_.name, spawnPoints[PhotonNetwork.LocalPlayer.ActorNumber].position, Quaternion.identity, 0);
    }
}
```

```csharp
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
using Photon.Pun;
public class PlayerManager : MonoBehaviour
{
    public GameObject girl;
    private void OnTriggerEnter(Collider other)
    {
        if(other.gameObject.tag == "Player")
        {
            Time.timeScale = 0;
            GameManager.gameref.levelcomplete.SetActive(true);
        }
    }
    private void Update()
    {

    }
}
```

GameManager.cs · Loading.cs · LobbyManager.cs · Ongame.cs ×

C: > Users > Roshan > Desktop > script > Ongame.cs

```csharp
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
public class Ongame : MonoBehaviour
{
    public GameObject gameover;
    public void Onnn()
    {
        gameover.SetActive(true);
    }
}
```

GameManager.cs · Loading.cs · LobbyManager.cs ×

C: > Users > Roshan > Desktop > script > LobbyManager.cs

```csharp
using UnityEngine;
using Photon.Pun;
using Photon.Realtime;
using TMPro;
public class LobbyManager : MonoBehaviourPunCallbacks
{
    public TMP_InputField createinput;
    public TMP_InputField joininput;
    public byte maxplayers;
    public void CreateButton()
    {
        RoomOptions roomOptions = new RoomOptions();
        roomOptions.MaxPlayers = maxplayers;
        PhotonNetwork.CreateRoom(createinput.text, roomOptions);
    }
    public void JoinButton()
    {
        PhotonNetwork.JoinRoom(joininput.text);
    }
    public override void OnJoinedRoom()
    {
        PhotonNetwork.LoadLevel("Game");
    }
}
```

File Edit Selection View Go Run Terminal Help

Restricted Mode is intended for safe code browsing. Trust this window to enable all features.   Manage   Learn More

GameManager.cs   Loading.cs ✕

C: > Users > Roshan > Desktop > script > Loading.cs

```csharp
1   using UnityEngine;
2   using Photon.Pun;
3   using UnityEngine.SceneManagement;
4   public class Loading : MonoBehaviourPunCallbacks
5   {
6       private void Start()
7       {
8           PhotonNetwork.ConnectUsingSettings();
9       }
10      public override void OnConnectedToMaster()
11      {
12          Debug.Log("Connected");
13          SceneManager.LoadScene("Lobby");
14      }
15  }
16
```

Restricted Mode   ⊗ 0 ⚠ 0   Ln 1, Col 1   Spaces: 4   UTF-8   CRLF   C#

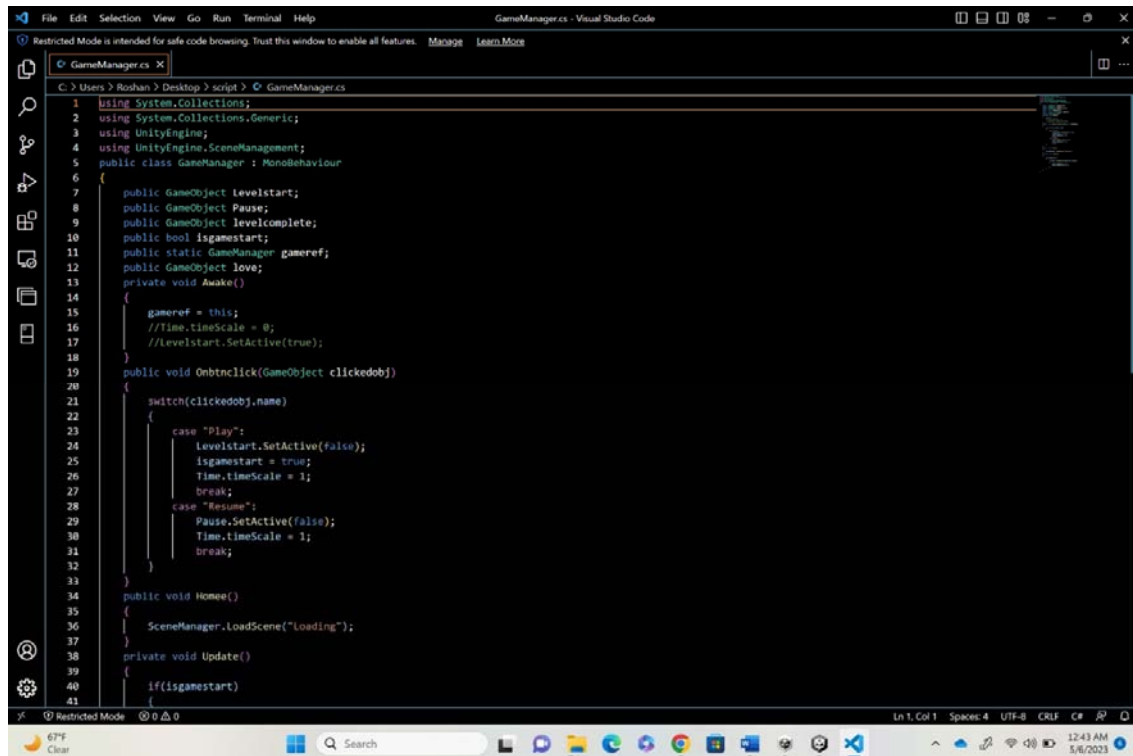
File Edit Selection View Go Run Terminal Help

Restricted Mode is intended for safe code browsing. Trust this window to enable all features.   Manage   Learn More

GameManager.cs ✕

C: > Users > Roshan > Desktop > script > GameManager.cs

```csharp
10      public bool isgamestart;
11      public static GameManager gameref;
12      public GameObject love;
13      private void Awake()
14      {
15          gameref = this;
16          //Time.timeScale = 0;
17          //Levelstart.SetActive(true);
18      }
19      public void Onbtnclick(GameObject clickedobj)
20      {
21          switch(clickedobj.name)
22          {
23              case "Play":
24                  Levelstart.SetActive(false);
25                  isgamestart = true;
26                  Time.timeScale = 1;
27                  break;
28              case "Resume":
29                  Pause.SetActive(false);
30                  Time.timeScale = 1;
31                  break;
32          }
33      }
34      public void Homee()
35      {
36          SceneManager.LoadScene("Loading");
37      }
38      private void Update()
39      {
40          if(isgamestart)
41          {
42              if(Input.GetKeyDown(KeyCode.Escape))
43              {
44                  Time.timeScale = 0;
45                  Pause.SetActive(true);
46              }
47          }
48      }
49
50
```

Restricted Mode   ⊗ 0 ⚠ 0   Ln 49, Col 1   Spaces: 4   UTF-8   CRLF   C#

FUNCTIONALITY:

Vision:

A maze with the avatars is created using walls and the players movement defines the game. Use of textures and 3D models in a Love Maze project can provide detailed information about the environment, such as the walls, floors. Textures can be applied to these surfaces to make them appear more realistic or stylized, while 3D models can add depth and complexity to the environment.

Sound:

Sound is used in a Love Maze project to provide information about the environment or to enhance the mood and atmosphere. Win moment, lose moments sounds, movement of the player.

Animation:

Animation is used in a Love Maze project to bring movement and interest to the surroundings can make a space feel more alive and active. To showcase the environment as a

real kind there are movements for the trees. heart shaped animations that improve health of the avatar and increases the game period.

Interactivity:

Interactivity is a key aspect of a Love Maze project, as it allows users to navigate the environment and engage with the elements. An environment for the maze game has been chosen as a theme for the game. A love island in which a maze game was the assumed scene. There is a collision detection for better realistic experience. Avatars movements are controlled by the keypad arrows.

Characters/Avatars: Animated agents or avatars are used in a Love Maze project to create a sense of presence and interaction within the environment. There are two avatars, male and female aiming to meet at one point in the maze. These agents can follow paths or behaviours and can be controlled through user input such as keyboard or mouse.

Player: A player controller is required for a Love Maze project since it lets users to travel and interact with the environment. A third person perspective is used to provide multiple viewpoints and gameplay options. So, we have used third person controller. Players movements are controlled, collision detection.

AI Implementation: AI functionality is implemented in a Love Maze project to create dynamic and interesting behaviours within the environment. When two avatars meet at a point the game wins. There is a possible chance that both the avatars might not meet each other through their life times and this case will lead to game failure followed by returning to the home page.

Interface Elements: Designing a clear and user-friendly interface is important for a Love Maze project, as we allow users to access and control the various features of the environment. Menu items such as buttons are used to provide easy access to different options and settings. Displaying the maze, health meter, timer for game.

Explain the behaviors implemented for different agents/avatars

The behavior of the two avatars are similar to each other. Avatars will move through the maze with the help of the keyboards up, down and sides arrows. The keyboards arrows will navigate the avatars through maze. Since there is collision detection it is not possible for the avatars to go through the walls. Around the path the avatars movement will happen. There are heart animations on which when the avatar steps, there health meter gets increased. This will help the avatar game time assumed to be the lifetime of the avatar.

Why this application is useful?

A Love Maze application in Virtual Reality (VR) can be useful for a variety of reasons. Here are some potential benefits:

Entertainment: As users explore the maze and interact with its aspects, a Love Maze VR application can be a pleasant and interesting way to spend the time

Emotional engagement: A Love Maze in VR is emotionally moving experience as users navigate the maze's twists and turns and face numerous hurdles and issues associated with love and relationships.

Therapy and self-reflection: A VR Love Maze can be used for therapy or self-reflection since it allows users to explore their feelings and thoughts about love and relationships in a secure and controlled environment.

Education: A Love Maze in VR can be used as an educational tool to teach users about healthy relationships, communication, and problem-solving skills.

Social connection: A Love Maze in VR can be a social experience, as users can explore the maze and interact with each other in a shared virtual space.

Overall, a Love Maze application in VR can provide a unique and engaging experience that allows users to explore the complexities of love and relationships in a memorable and impactful way. It can be useful for entertainment, emotional engagement, therapy, education, and social connection.

Why virtual reality is the appropriate technology.

Virtual Reality (VR) is an appropriate technology for a Love Maze application for several reasons:

Immersion: VR offers an immersive experience that allows users to feel if they are physically present in the surroundings. This can make the Love Maze experience more engaging and emotionally impactful.

Interaction: VR allows for more natural and intuitive interaction with the environment.

Simulated scenarios: VR allows users to replicate settings that would be difficult or impossible to recreate in real life. This is especially effective in a Love Maze application, where users may be challenged with difficult emotional or interpersonal circumstances.

Safe environment: A Love Maze VR application can give users with a safe and controlled setting in which to explore their feelings and views about love and relationships. Users can play with various scenarios without the risks and consequences associated with real-world interactions.

Customization: The setting and features of the Love Maze can be customized using VR to meet the needs and interests of various users. This can improve the experience's personalization and effectiveness.

Explain problems encountered and remaining shortcomings (Future Work)?

Technical limitations: VR technology is still improving, and there may be technical restrictions to what can be accomplished with existing hardware and software. The processing capacity of the user's computer or the capabilities of the VR headset, for example, may limit the quality of visuals, sound, and interactivity.

Motion sickness: When utilizing VR, some users may feel motion sickness or discomfort, especially if the movement in the environment is not adequately matched to the user's movements. This could be a big issue that limits the Love Maze application's appeal.

Lack of real-world feedback: Because VR is a virtual environment, it may not provide the same level of real-world feedback as true social interactions. For some users, this may reduce the efficiency of the Love Maze program.

Limited social interaction: While VR can provide a shared virtual space for users to interact with each other, it may not be able to fully replicate the nuances and complexities of face-to-face social interaction. This may limit the social benefits of the Love Maze application.

In terms of future work, there are several potential areas for improvement and expansion of a Love Maze application in VR. For example:

Enhanced interactivity: Future work could concentrate on increasing the Love Maze environment's interaction, with more natural and intuitive ways for users to navigate and engage with its sections.

Advanced AI: Advanced AI and machine learning methods could be utilized to generate more sophisticated and realistic virtual agents with more complex behaviours and interactions within the Love Maze environment.

Social networking: Future research could look into ways to combine Love Maze with social networking platforms, allowing users to connect and share their experiences.

Personalization: Future development could concentrate on developing more personalized experiences within the Love Maze environment, with customized scenarios and challenges depending on each user's unique requirements and interests.