VR BASED GAME APPLICATION

Abstract:

In order to enable users to get an immersive experience in the game environment, a VR interactive game design method based on Unity3D engine is proposed. According to the VR game design process and the interactive methods in the game, analyse the VR interactive game design concept, according to the data structure of the VR interactive game, combined with the state space search method to traverse, use the gravity acceleration component of the multi-axis acceleration sensor to calculate the pitch of the VR device Angle, according to the user's pitch angle, acceleration and gravity sensing information, real-time positioning of the user's head movement, controlling the position of the VR device in the game engine, and optimizing the rendering result of the VR game space structure, completing the Unity3D engine-based VR interactive game design.

The experimental results show that the experience satisfaction of the VR interactive game design is higher than that of the traditional VR interactive game design, and it fulfils the requirements of obtaining an immersive experience in a virtual reality game environment.

Existing System:

A routine mobile based game doesn’t have the immersions into the game, which loses the wow factor of the game. These games are not interactive though.

Proposed System:

Here, in this project we are building a mobile game which can be inserted into the VR Box and immersing the user into the Virtual Reality world. We would be creating a game with VR 360 experience using Unity3D Game Engine and creating some kind of interactive-ness with the game object and will be moving that game object with the help of head movements.

Our mobile will have gyroscope sensors and accelerometers and these sensory data will be passed to the unity game object and thus the game object will be moving according to the head movements. And, this involves immersive-ness also so that the user will be in virtual world while playing this game.

Software Tools:

1. Unity Hub
2. Unity 3D
3. C# .NET
4. Google VR SDK

Hardware Tools:

1. Laptop
2. Operating System: Windows 11
3. RAM: 16GB RAM
4. ROM: 8GB
5. VR Box
6. Mobile Phone with Gyro

Applications:

1. This game architecture can be integrated with any non-VR game to create it as a Virtual Reality game.
2. Media, Games and Entertainment.
3. VR 360 for Movies.