**FPS GAME USING DICTIONARY CONCEPT**

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**Introduction:**

First Person Shooter game is a 3D shooting game which is implemented using Unity game Engine and C#.

**About the Game:**

A first person shooter (FPS) is a genre of action video game that is played from the point of view of the protagonist. FPS games typically map the gamer’s movements and provide a view of what an actual person would see and do in the game.

**Steps involved in making the game:**

1. We start by creating a new Unity 3D project ,saving the scene into a scenes folder.
2. Import the assets from the asset store.

3. Creating a player that can move, shoot, and die

4.Mastering weapons and shooting with C# and object pooling

5.Implementing enemies that can path find using Unity’s Nav Mesh feature

6.Adding health and ammo pickups

7.Setting up audio and particle effects for firing weapons

8.Using Unity’s UI system to create health bars, ammo counters, and more

**Scripts:**

**1.Player Movement:** It is attached to the player to control the player movement (move,reload,shoot).

**2.Enemy Controller:** This script is added to the enemy.State machine concept is used for the movement of the enemy according the player position.According to the player position enemy states(idle,wander,chase,attack,death) will be changed.

**3.Pool Manager:**We use the concept of dictionary here for different pool objects.

**4.Object pool:**This script is attached to object pool in the hierarchy.It is used to enqueue and dequeue the pool.

**5.Game Manger:**It is used to manage the health of the player and spawn the enemies.

**Concepts used in Scripts:**

**State Machine:**Finite state machine is a design pattern that is used in the games as a conceptual machine that can be in exactly

any given number of finite states.

\*Anytime FSM is used in the field of AI to define among things.

\*The behaviors of a computer controlled characters.

\*It is represented as a graph with a node that represents the states and transitions that define the path from

one node to the next.

\*Once a state has been entered the NPC states in that state until the condition of the transition

\*Any state contains 3 processes that it runs at different times.

1.Enter:As soon as the state is transition to the state.

2.Update:Endless loop of update continues to run until the transition out of the state is trigger.

1. Exit:Before leaving the state exit process is run.

**Dictionary:**Dictionary is a generic collection that stores key-value pairs in no particular order.