Gravity

In the code we scripted, the player is not affected by gravity

→ ∵ Player does not have Rigid Body Component

Instead of adding this component to Player, we will script the gravity in Unity.

① Let's modify "Player Movement"

```
public class PlayerMovement : MonoBehaviour
{
    ... (same as previous)
    // Gravity variables
    private Vector3 playerVelocity;
    private bool IsGrounded;
    public float gravity = -9.8f;

    ... (same as previous)

    void Update() {
        isGrounded = controller.IsGrounded;
    }
```

→ checks if Player is touching ground (if it collided with any colliders)

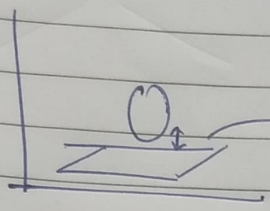
→ CharacterController has a in-built IsGrounded

```
    public void ProcessMove(Vector2 input)
    {
        ... (same as previous)
        playerVelocity.y += gravity * Time.deltaTime;
        if (isGrounded && playerVelocity.y < 0)
            playerVelocity.y = -2f; // Reset y position
        controller.Move(playerVelocity * Time.deltaTime);
    }
}
```

(*) change depending on Player's root position

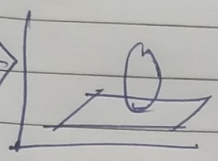
↓ move towards ground

Keep in Mind :-



→ set player's root position such that it's touching ground

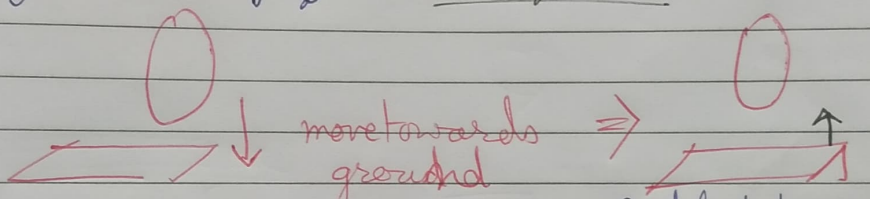
That means ⇒



If its not, it will continuously move up & down

Why ? → because of controller.Move (playerVelocity * Time.deltaTime)

Every time the player is not grounded

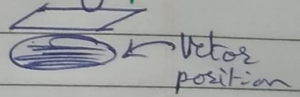


In ProcessMove ( ) :-

playerVelocity.y += gravity * Time.deltaTime; ↓ -9.8 (along y)

if (isGrounded && playerVelocity.y < 0) → Checks if y position is below plane

playerVelocity.y = -2f; ⇒ Reset position



[controller.Move (playerVelocity * Time.deltaTime);]

↳ This is outside if statement.

Hence, it continuously move towards playerVelocity ↓ -9.8

↳ (0, -9.8, 0)