Cosc 341 A1 Report
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Implementation:

- Player is a sphere that can roll around and jump. Can only jump when touching the ground or a wall.
- Camera follows the player's movement along the z and y axes.
- Collectible items increase score when they are collided with by the player
- Enemies move by following the player or patrolling through their ‘home’ location
- Enemies are killable by jumping on top of them, and will increase your score
- When the player dies by enemies or falling, reduce score and teleport back to the start.
- Final two platforms move along the x axis, but the player does not inherit their velocity.

Challenges:

- Moving platforms were tough, and are not in the shape I would like. I can’t get them to be a rigidbody without having their paths altered by the player landing on them. So instead they are just colliders, and have their position altered by 0.01 each frame rather than having a velocity. The side effect of this is that they are non-inertial (the player does not inherit their velocity)

- I implemented the killable enemies by checking the normal vector of the impact point. Dotting this with (0,1,0), if the result is > 0.8 then the impact point was on the top part of the enemy, so it dies. I had a prior implementation that added in a disk that sat above the enemy, and killed the enemy if it was hit, but when this was a child of the enemy it interfered with the rolling, and if it wasn’t a child I couldn’t use the same script for multiple enemies because of the way I was referencing them. The new solution is much cleaner.

- Sometimes wall jumps give only a tiny jump, I don’t know why.