**2D Physics**

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…

Y coordinate - (0,0) Top left corner

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 , 29, 30, 31, 32, …

X coordinate

A



B

1. Gravity can be created by increasing our Y coordinate after every frame. We can increase the speed of the player falling by increasing the step. Step 🡺 1 (slow fall), step 🡺 50 (very fast fall).

To stop the player sinking through the ground, we need up thrust. This can be created by check if the player is touching the ground (or an obstacle).

While True:

Step 🡺 0

while Player not touching\_floor():

Step += 1

Y += step

1. for the collision detection: first draw an invisible box around the player, next we can simply get the RGB value of each pixel around the perimeter of the box. And check if any of the pixels match the colour of the floor.

Calculating the perimeter:

1. get X, Y coordinates for all 4 corners of box.
2. Get X, Y coordinate for every point from each corner around the box.
3. Check each coordinate, to see if it matches floor colour