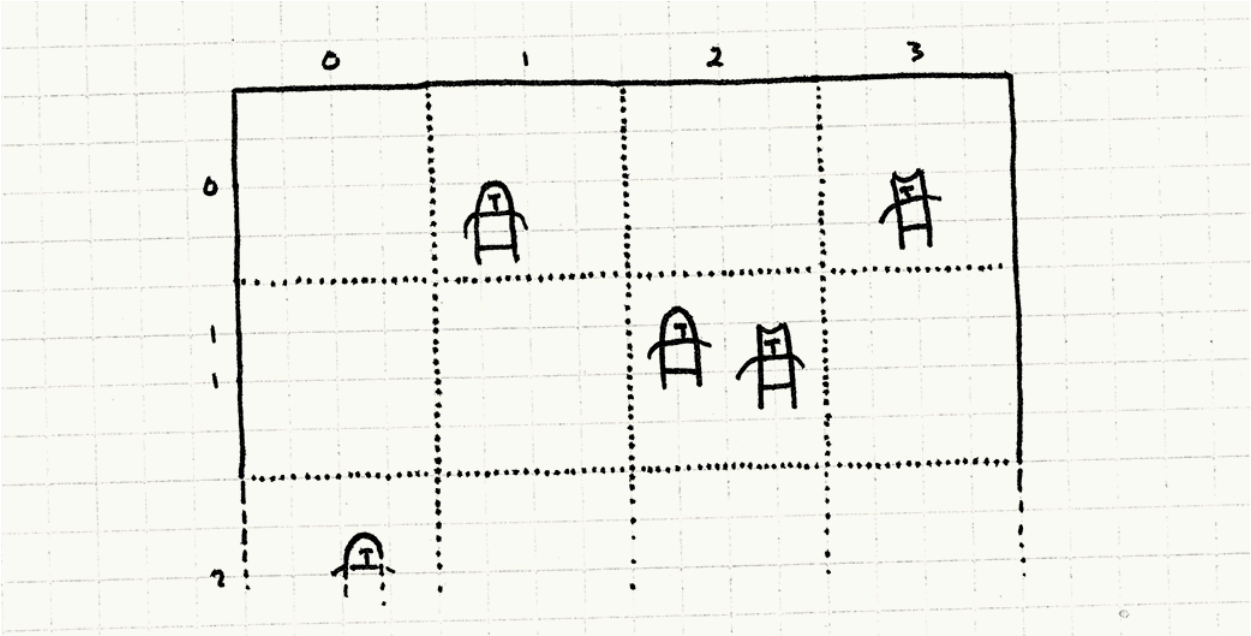
In a 2D game with many sprites, checking each sprite against every other one for collisions would be inefficient and could potentially slow down the game.

Since our sprites don't rotate, we can simplify their shapes to rectangles aligned with the game's grid. These are called **Axis-Aligned Bounding Boxes (AABBs)**. Checking if two such rectangles overlap is straightforward and quick.

To further reduce unnecessary checks, we can divide the game world into smaller sections:



We can overlay a uniform grid on the game world. Each cell of the grid keeps track of which sprites are inside it. Now, to check for collisions, a sprite only needs to be compared with others in the same or neighboring cells. This reduces the number of checks significantly.

In the picture above, let's suppose the the player moves to cell (1,2). As soon as the player moves to this grid cell, we can start collision detection in this specific cell.