

~ Darkseekers ~



Mitchell Arthur - Sean Burke - Emilio Cantu - Gerard Louis - Aaron Russell - Quan Yu

The Game

Story Mode:

You find yourself stranded in a world full of zombies. The only sign of life you find is the voice over a two way radio. You put your trust in this man as he guides you through the zombie infested city.

Survival Mode:

Stay alive as long as possible as waves of zombies attack you.

Controls

Keyboard:

W - Move Forward
A - Strafe Left
S - Move Backward
D - Strafe Right
E - Interactive with items
F - Toggle flashlight
I - Open\Close inventory
H - Use health pack
B - Use battery
ESC - Pause game
1-5 - Weapon Hotbutton

Mouse:

Left Mouse - Shoot
Right Mouse - Zoom



Weapons

Pistol - The pistol has a short range but does a medium amount of damage.



AK-47 - The AK-47 does moderate damage and has a medium range. It has a very slow reload time, but the fire rate is very high.



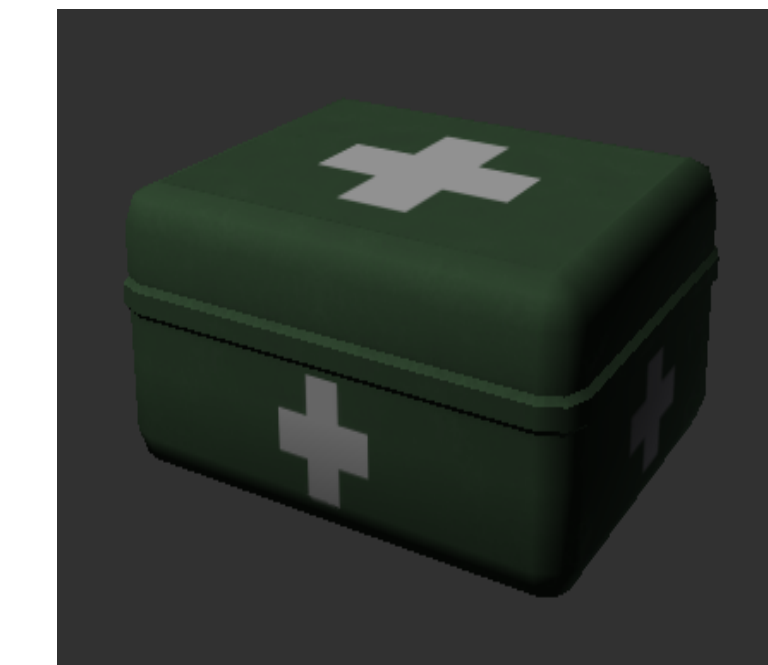
M-16 - The M16 does moderate damage and has a medium range. It has fast reload time but has a medium fire rate.



Shotgun - The shotgun does an extreme amount of damage at very close range, but the further away you are from an enemy the less effective this weapon is.

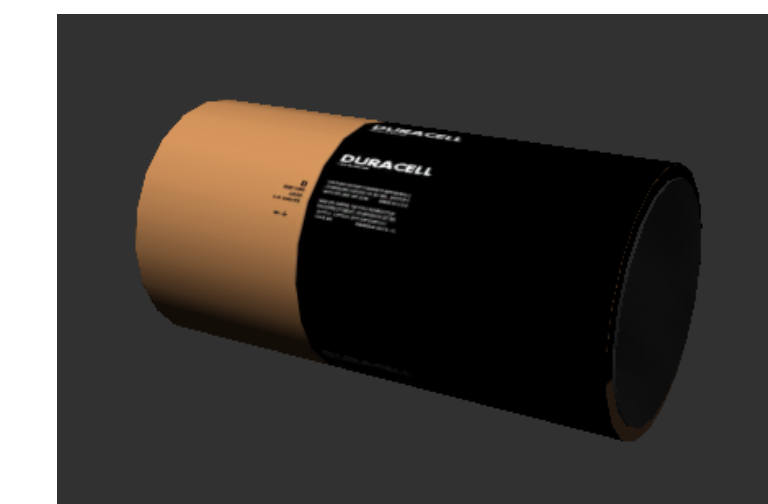


Sniper rifle - The sniper rifle does an extreme amount of damage and has a very long range. This weapon is also equipped with a scope.



Items

Health packs - Health packs restore a maximum of 20 health. Any health beyond 100 will be wasted. A player may carry a maximum of 10 health packs at once.



Batteries - Batteries restore power to the players flashlight. A player may carry a maximum of 20 batteries at once.



Ammo crates - Ammo for the various weapons can be found in ammo crates.

User Interface

Health
Meter
Inventory



Objectives

Minimap

Weapon
/Ammo

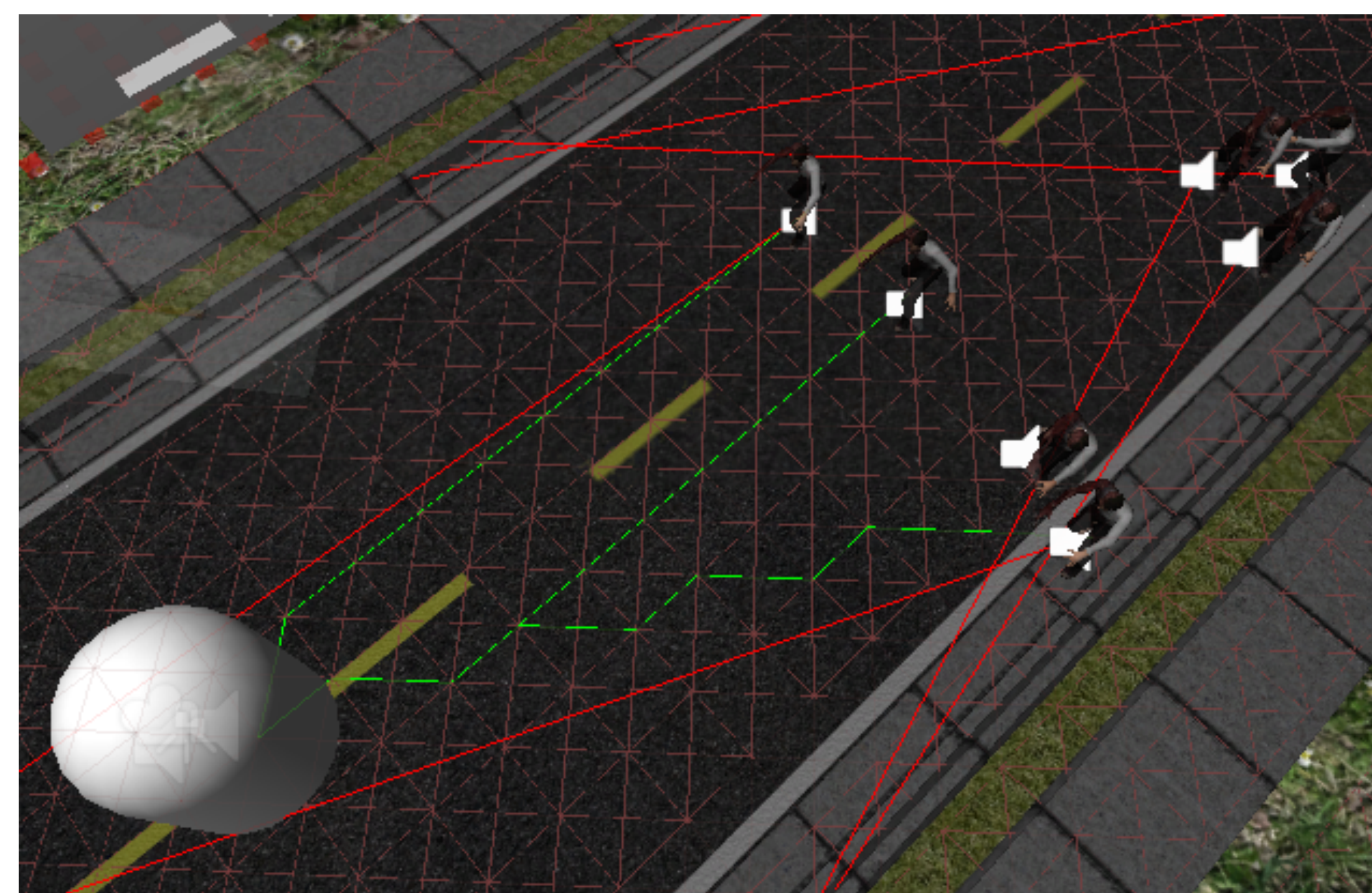
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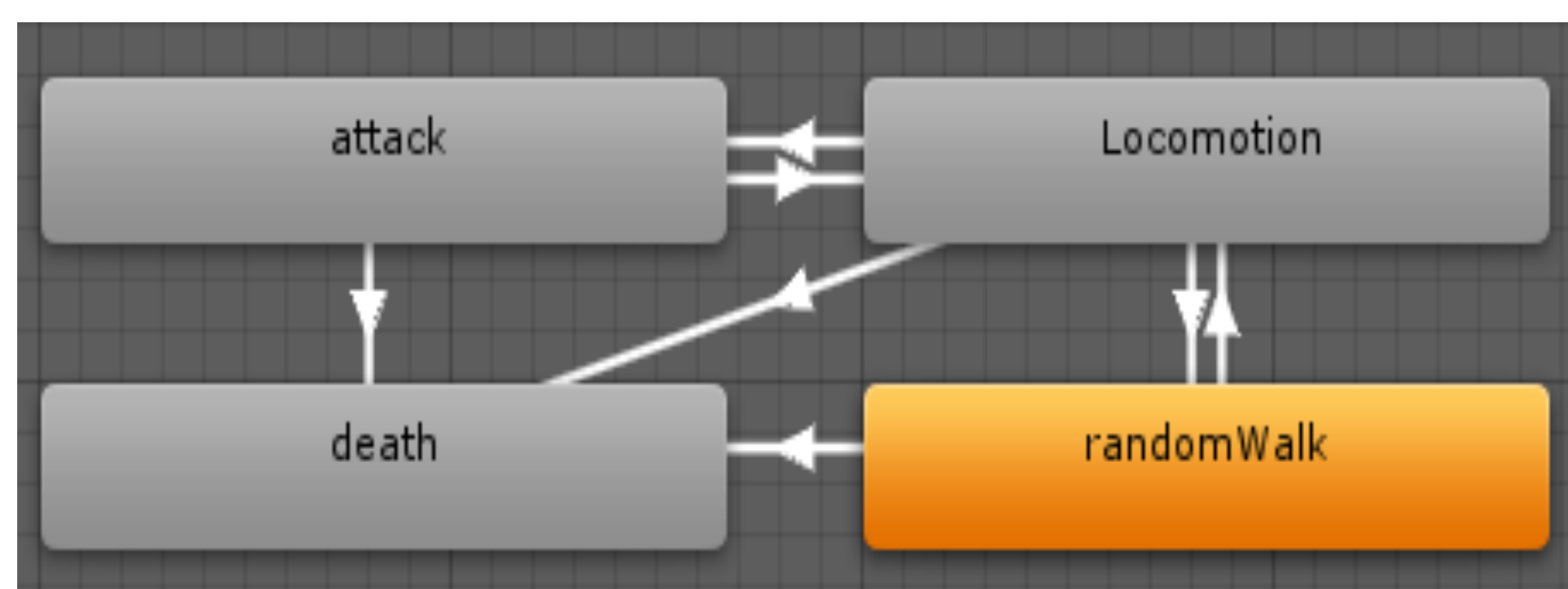
Artificial Intelligence

Smart zombies stay still until player is within proximity range, then run toward the player using A* pathfinding to determine their way around the scene. Dumb zombies just walk around randomly using ray casting to go around obstacles or to follow player if spotted.



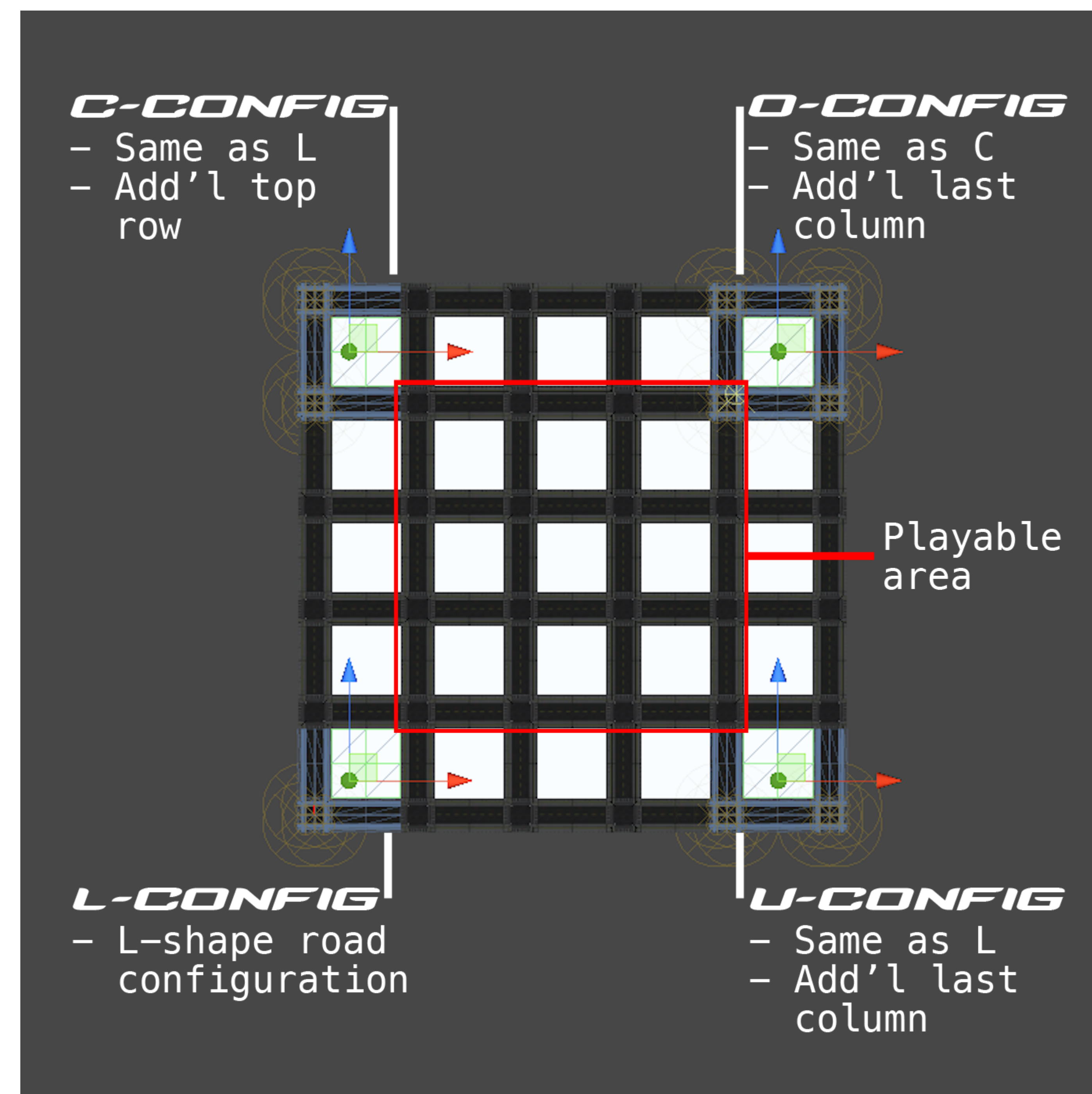
Animation

The Zombies' animation is handled by a built-in Unity 3D feature called Mecanim System. The animation handler has state transitions that are controlled by the zombie's health and distance to the player.



City Generation

1. Given X and Y, the city generated is X+2 blocks wide and Y+2 blocks high (ensures player won't fall off map) using block configurations represented by letters (L,U,C,O)



2. Given current block(x,y):
L's are used when $x < X+2$ and $y < Y+2$
U's are used when $x == X+2$ and $y != Y+2$
C's are used when $x < X+2$ and $y == Y+2$
O's are used when $x == X+2$ and $y == Y+2$

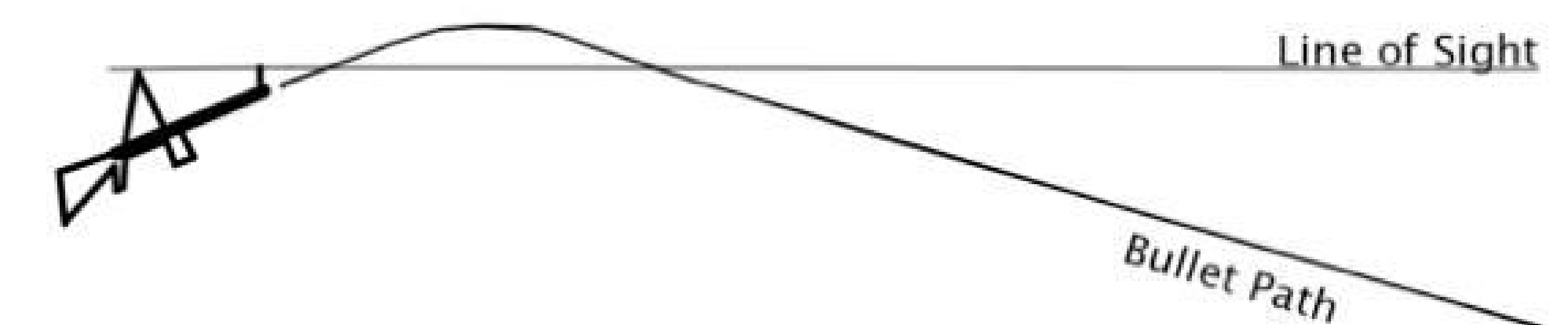
Building Generation

1. Four planes are created with same random height and fixed width.
2. Tiling texture is applied, scaled
3. Planes are moved into place to create walls.

Weapon Mechanics

Bullet Trajectory:

Bullets take into account gravity along their flight path.



Bullet Spread:

When shot, each bullet will have an initial magnitude that is equivalent to the weapon's power and the direction you are aimed, then a random direction vector that is added to the bullet's magnitude. This randomized vector is dependent upon the weapon and becomes larger if the player is holding the weapon's trigger down.

