## Controls:

P - Toggle camera-cursor offset

WASD - Player movement (up, left, down, right, respectively)

ESC - Exit the program

R - Reset the program

Scroll wheel - Zooming in/out

Mouse 1/ spacebar - fire bullet

## Test Plan

1. Hold W,A,S, and D to move up, left, down, and right respectively, also should see animation playing.
2. Hold adjacent keys moves diagonally such as WA - moves up and left
3. Hold opposite direction keys - stops player movement
4. Hold WASD - no movement
5. Hold WA, release A - moves up due to W still being held (try other combinations)
6. When pressing movement keys, camera should follow player’s center
7. Press P to activate the camera-cursor offset, then move the cursor around on the screen. Camera should be centered between cursor and player
8. Press P again to deactivate the offset and the camera should smoothly transition back to the center of the player
9. Press mouse 1 or spacebar and release -> fires one bullet from center of players model
10. Hold mouse 1 or spacebar -> rapidly fires bullets toward mouse position
11. Hold mouse 1 or spacebar while moving with WASD and mouse- bullet should be in front of player and faster than player
12. Hold mouse 1 while moving with WASD and don’t move mouse - bullet should be shooting at mouse cursor position
13. Fire at enemies to damage them which kills them after 6 bullets land
14. Walk towards enemies and touch them and take damage.
15. Walk along the edges of the room to test room boundaries.
16. Press ESC to exit the game
17. Press R should reset the game, with the player in the middle of the screen and camera centered on player
18. The game also resets upon player death.
19. When player dies, screen should slowly turn dark
20. Scroll up - should zoom in and stop at a certain point
21. Scroll down - should zoom out and stop at a certain point
22. Audio tests
    1. Fire a bullet to hear bullet firing sound
    2. Hit a enemy to hear enemy being hit sound
    3. Get hit by a bullet to hear player being hit sound
    4. Lose all your health to hear death sound
23. Fire a bullet at the wall and watch it disappear (bullet to collision test) - also works for enemy bullets
24. Invulnerability for player after getting damaged (bullet should pass through them - to be changed later)
25. Player or enemy being hit, their color should flicker red for a quick second
26. Press T -> tutorial pop up on the screen in loaded font
27. Press G -> debug mode is enabled. The user should see all aabb colliders of entities being shown as red rectangle.
28. Move cursor around -> player character should always look at the cursor no matter of their walking direction.
29. Stay still and wait for enemy spawn -> wolves should shoot three bullets at a time (shotgun), bees should shoot one bullet at a time, and bombers should try to hit the player with their body. Bullets cause one damage and bombers cause two. They will be deleted once collide with player.
30. When enemy is killed, some of them should drop pickable sushi.
31. When player pick up sushi, they should be healed up as shown by the health bar. If they reach maximum health then nothing should happen.
32. When enemy bullet shoot directly to player, it should be deleted once it hits the player character mesh.
33. When player walk to enemy, it should not be damaged as long as the mesh is not colliding to enemy’s aabb.
34. AI tests
    1. Stay far away from the enemy. The enemy should be moving and idling randomly.
    2. Stay closer to enemy but hide behind an object. The enemy should try to find the player with A\* algorithm.
    3. Stay out of the object. The enemy should move closer to player and start shooting from a distance.
35. When stay still, player idling animation should be played.
36. Bees and bomber should face the direction of player.
37. Wolves should face to the direction they are travelling.
38. Walk around an object (a pillar) and see the layers of rendering. Every entity should be drawn that the one in front is rendered afterwards.