World Z

Final Game Report

G12

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1. Introduction

When we first started with our game development project, we thought it would be no big deal, just fun and games, but we quickly realized it was more than just switching some knobs in order to make an original game. We concluded that we wanted to make an FPS-styled Zombie shooter game.

1.1 Overview

We have now created a fully functional Zombie FPS shooter with a realistic touch. Building a realistic and well-functioning game takes time. But we managed to finish our desired project. Over the past few months we have had a weekly plan to follow. Containing different features and things we needed to implement in a relevant order. This made sure that we stuck to a schedule, finished our implementations on time, with time to spare if we encountered problems.

1.2 Objectives

Our goal with our FPS-Zombie shooter game was to create a original, fun-to-play, exciting and realistic finishing touch. We wanted to implement a generic FPS-type character, with realistic animations, guns, running and walking features. We wanted the player to feel alive in our game and not feel stuck to basic character movement and boring animations, like in other indie games. We wanted to create a realistic looking environment with AI-based enemies (Zombie).

1.3 Methodology

Our game is made by using the Unity Engine. Our method for developing our game is simple:

- Create/import static objects with no/little functionality.
- Add functionality to game objects using the script system build in unity. (C# scripts coding).

As of version control, we have stuck to GitHub. (5. Links). When we first started we didn't add version control right away, but quickly figured out that it would be very necessary since the project quickly grew in size.

2. Project description

2.1 Story

Our original story as from our project description was:

'*The player woke up one day and the world around him was not the same as before. The zombies had taken over the world, and there was only one thing that could be done. Defeat all the zombies and find the cure against the zombie infection.*'.

We have since stuck with this story, and our levels are built on the same idea.

2.2 Aesthetics

Our goal with the aesthetics of this game was to implement a realistic type environment and quality. When we started building our game we figured we would implement URP instead of the build in Render Pipeline, since this added tons of quality improvements that could be implemented while not being High-End Computer dependent compared to the better looking HDRP and its features.

2.3 Environment

Since our game consists of levels we can further use that advantage to implement different 'feels' for different levels. Different levels could have its very own style. This furthermore improves the player experience by not sticking to just one boring level.

We made our environment also feel realistic, by importing realistic textures, adding normal and other texture maps to make the environment feel real.
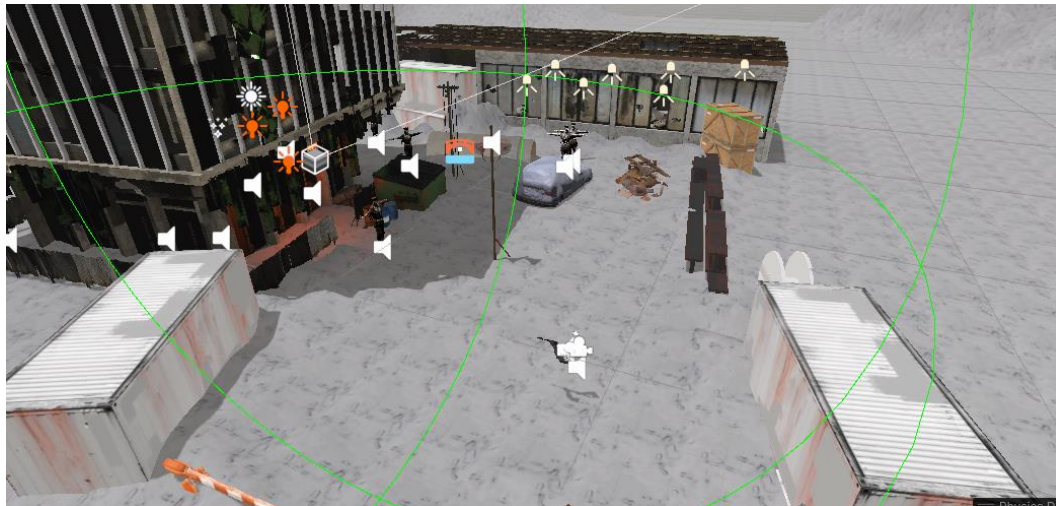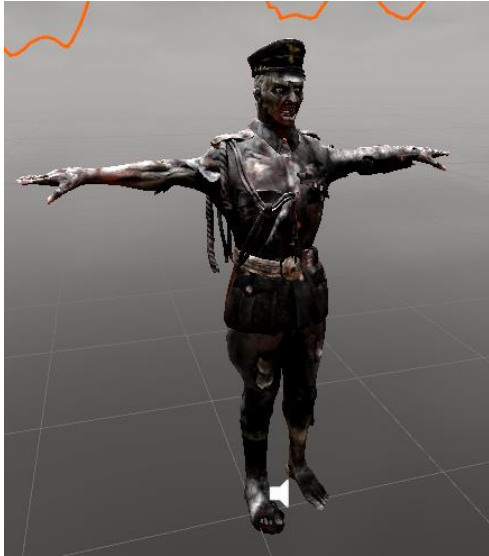

Image from our Snowstorm map

2.4 Characters

We imported a free zombie asset mesh from 'mixamo.com', as well as different animations we needed for the different zombie states. Animations we imported included: Idle, Running, Standing Up, and turning. We implemented a ragdoll functionality for our zombies, which made our 'killing zombies' experience way more realistic.

Zombie from our levels

2.5 Gameplay

The gameplay of World Z consist of fast paced shooting, running around and exploring different locations on the level, encountering zombies, missions and a level finish (when all objectives are done).

Image taken from the game in action. Snowstorm map

The player has a health-bar which decreases when taken damage from zombies, a working radar to spot zombies/objectives (useful for low visibility levels). The player does also have a view of the objectives he/she has to finish, viewmodel for the gun and visible ammo for knowing when to reload.
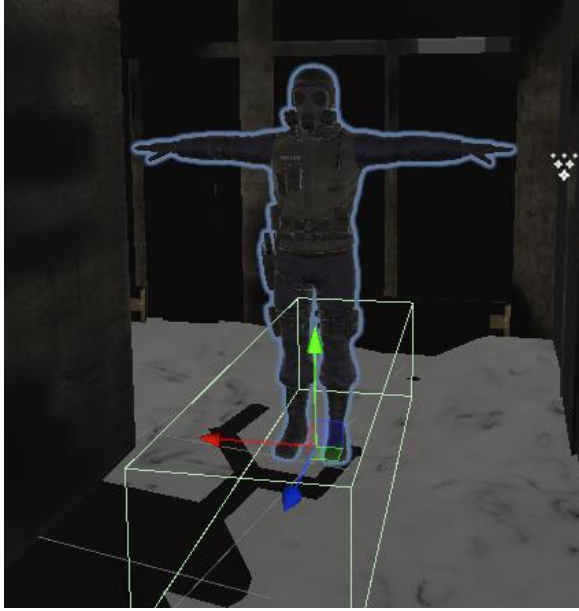
Image of 'save objective'. It is a player mesh, when interacted with finishes one of the objectives on the map Snowstorm.

2.6 Game mechanics.

Game mechanics:

Player:

- Movement (walk, run, jump)
- Weapons (shoot, weapon switch, reload)
- UI (Pause game, edit settings, change graphics)
- Die (level lost)

Zombie:

- Movement (idle, run)
- Attack system (attack)
- Vision (field of view system, detects if zombie can see player based on field of view)
- Die (turn into ragdoll, the zombie does also have a functionality to respawn. Since it is in a ragdoll state it repositions the bones and runs the standup animation).

2.7 User Interface

As also shown in our game walkthrough (as an additional .mp4 file), our game UI takes care of level selection and settings. Levels can be loaded through our main menu, settings can be edited from our main menu as well from the in game perspective by pressing 'ESCAPE'. Settings are saved by utilizing

the serialization functionality in the C# scripts system by unity. Settings are saved to disk and fully loaded back in the game when saved. Settings remain when exiting and running the game.
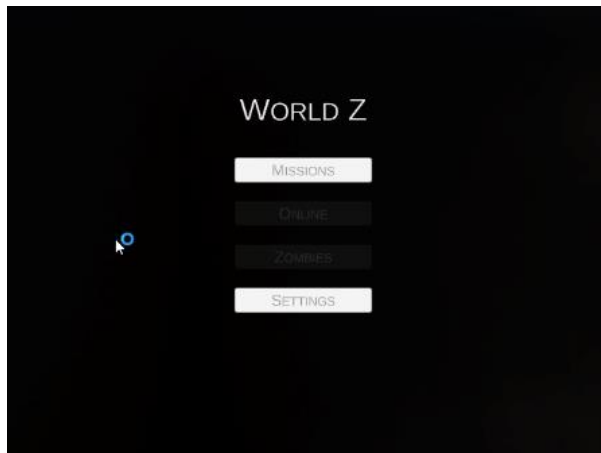
Main menu options. Settings consist of character settings (sensitivity and ads sensitivity), audio (main volume, sfx, music) and graphics (Quality, fullscreen, screen size, max fps). (Shown in the game walkthrough).

3. Our experiences

3.1 Reflection

Although we have had our complications throughout this journey of game development, we have learned a lot. We have reached our goal by creating a realistic looking zombie FPS-shooter game that we are proud of. It took a lot of dedication and time, but we made it work. We did reach our desired target as from the game proposal, except inventory feature. While our player what looks like an inventory, considering he has weapons which can be switched between, he cannot pickup other weapons.

4. Contribution (Added as individual files)

Members:

10009

10004

5. Manual

Switch weapons with keys 1 and 3.

Sprint by holding Left Shift

6. Links

Itch.io WebGL build (have to press full screen sometimes cause of itch.io bug) :

https://streafe.itch.io/world-z

GitHub repository : https://github.com/Streafe/world-z-urp

Zombie & Hostage models: https://www.mixamo.com/#/?page=1&type=Character

Humanoid animations: https://www.mixamo.com/#/?page=1&type=Motion%2CMotionPack

Other assets included from:

https://sketchfab.com/feed

https://polyhaven.com/