Game Design Document

Project Zombia

Jagan Mohan Reddy Dwarampudi, E18CSE070

**Circle

Description automatically generated with low confidence**

**Table of Contents**

**TABLE OF CONTENTS ................................................................................................................................... 2**

**I. GAME OVERVIEW ...................................................................................................................................... 3**

A. EXECUTIVE SUMMARY ............................................................................................................................. 3

**II. CORE GAMEPLAY ..................................................................................................................................... 3**

A. MAIN GAME VIEW ...................................................................................................................................... 3

B. CORE PLAYER ACTIVITY .......................................................................................................................... 3

C. GAME CONTROLS ........................................................................................................................................ 4

D. IN-GAME GUI ................................................................................................................................................ 4

**III. CONTEXTUAL GAMEPLAY ................................................................................................................... 4**

A. GAME FLOW DIAGRAM .............................................................................................................................. 4

B. GAME MECHANICS ...................................................................................................................................... 4

**IV. GAME ELEMENTS ................................................................................................................................…. 5**

A. CHARACTERS ................................................................................................................................................ 5

B.LEVEL / MISSION / AREA DESIGNS ........................................................................................................... 5

C. MENU ............................................................................................................................................................... 6

D. HOW TO PLAY ................................................................................................................................................ 6

E. END SCREEN ................................................................................................................................................... 6

**V. SOUND ............................................................................................................................................................. 6**

A. SOUND EFFECTS ............................................................................................................................................ 6

**VII. APPENDIX A: GAMEFLOW DIAGRAM ................................................................................................ 6**

**I. GAME OVERVIEW**

1. EXECUTIVE SUMMARY

You play as a lone survivor of a zombie apocalypse in a city block that is isolated from the outside world to protect against the wandering zombies but the zombies have found their way into the city and you must use your skills to defend against them while they keep trying to kill you. Your arsenal of the last remaining rifle is at your disposal.

**II. CORE GAMEPLAY**

1. MAIN GAME VIEW

This game is a 3D action survival game. It is based on the classic endless runner genre games like Temple Run, Subway Surfers, etc. but modified as an open world game.

A picture containing sky, outdoor

Description automatically generated

It has an infinite round dependent enemy difficulty model where the difficulty increases linearly with the number of levels survived. Your task is to kill all the enemies in each level to proceed further to a new harder level.

Use your shooting skill to kill as many zombies as you can and you try to survive as long as possible to achieve the highest score.

1. CORE PLAYER ACTIVITY

As the game starts, you will be able to move in any direction of the map. Use the mouse to adjust your camera view or aim at any location. You will also be able to jump to climb onto any abandoned objects or debris. You will not be able to cross the city limits.

Zombies spawn at random locations and navigate towards you using an AI generated navigation path. Zombies can affect the player only through direct contact i.e., a collision between the player and a zombie would affect the player’s health.

Zombies can attack from any direction, even from the direction which is not included in your field of vision. Zombies are half dead, so you can only kill them by aiming for their head. The more zombies you kill, the more levels you pass, spawning even more zombies.

You start with a health of 100 and each zombie attach costs you 20 health. Post round 10, you get a power to make zombies attack other nearby zombies. So, you can kill a zombie and make it kill others for your advantage.

1. GAME CONTROLS

The game controls are intuitive and straight forward as most of the games.

**Movement / Action**

|  |  |
| --- | --- |
| W / ↑ (Up arrow) | Walk Forward |
| S / ↓ (Down arrow) | Walk Backward |
| A / ← (Left arrow) | Walk Left |
| D / → (Right arrow) | Walk Right |
| Space | Jump |
| Primary Mouse Button | Shoot |
| Mouse Up Movement | Turn Up |
| Mouse Down Movement | Turn Down |
| Mouse Left Movement | Turn Left |
| Mouse Right Movement | Turn Right |

1. IN-GAME GUI

The GUI will feature the following information:

1. Current round number (Top Left)
2. Player health level (Bottom Right)

The GUI elements will appear on top of the game view as plain text.

**III. CONTEXTUAL GAMEPLAY**

1. GAME FLOW DIAGRAM

See Appendix I.

1. GAME MECHANICS

**Zombie Description**

Zombies are half dead, half alive people that feed on humans to live. Zombies can sense humans at their level but lack logical thinking. So, as soon as a zombie enters the city, they head towards the player. They can be killed by a few headshots. A zombie attack drains the player’s health.

**Zombie “Death”**

Each zombie starts with a limited health and with every successful gunshot, their health decreases. Once a zombie health reaches zero, it disappears denoting its death. During an active power-up though, no visible change occurs but the character of the zombie itself is altered to attack other nearby zombies. When two zombies collide, they both end up dead.

**Power-Ups**

There are no visual power-ups in the game but it is pre-coded to activate when the player completes round 10. The power-up for the player is not seen visually but when the player kills a zombie, it gives the player the ability to turn the zombie against another one, creating death to 2 zombies at once. This is given with the gameplay in mind and to ease the level hardness after round 10.

**Scoring**

The is no particular scoring function assigned to the game but rather, the rounds survived is displayed at the end making the number of rounds successfully survived as the metric to measure.

**Level Progression**

All the levels in the game happen in the same location. A level change occurs when all the zombies of a previous round are eliminated. This change can also be visually notices at the top right corner, where the round number is shown.

**IV. GAME ELEMENTS**

1. CHARACTERS

|  |  |
| --- | --- |
| A picture containing weapon, toy  Description automatically generated | This is the first person player character that the user controls. The character does not have a full body figure since the user only needs to have a visible hands and weapon.  The character floats mid-air to create a feeling of body presence for the player. The character is assigned with a shooting animation that plays when the primary mouse button is clicked. |
| A picture containing dark, automaton  Description automatically generated | Zombie is the one and only enemy of the player. Multiple copies of the zombie spawn around the city.  They are intelligent enough to track you on the ground. |

1. LEVEL / MISSION / AREA DESIGNS

**Basic Levels**

All the level in the game have the same fundamental structure. Each round starts by spawning the corresponding number of zombies at random spawn locations. The zombies use their navigation abilities to track down the player and attack.

Once all the zombies are eliminated, the round number increases, spawning even more zombies. If the player loses all the health, an end screen appears showing the rounds survived altogether. The same design principles are followed throughout all the game levels.

**Power-Up Levels**

Post round 10, the player is granted with the power to kill a zombie and then use its attacking ability to attack other zombies. As soon as the zombie is killed, it does not die but rather, it starts following other zombies. Zombies that work under the player can not harm the player.

1. MENU

The Menu will appear at the start of the game. It will have the game title and 2 buttons – Play, and Exit respectively.

1. HOW TO PLAY

No instruction screen is provided as the game control follow the most common 3D game controls and are fundamentally intuitive.

1. END SCREEN

An End Screen is shown when the player dies. It contains the number of rounds survived and a button Play Again that restarts the game.

**V. SOUND**

1. SOUND EFFECTS

Sound effects are added to the following events:

1. Player walking

A walking sound is looped as long as the player moves to create a sense of walking.

1. Zombie attack

A zombie attack sound is triggered whenever a zombie touches a player or when two zombie attach each other.

1. Gunshot

A rifle sound is played whenever the primary mouse button is clicked.

**VII. APPENDIX A: GAMEFLOW DIAGRAM**

**Diagram

Description automatically generated**

**Diagram

Description automatically generated**