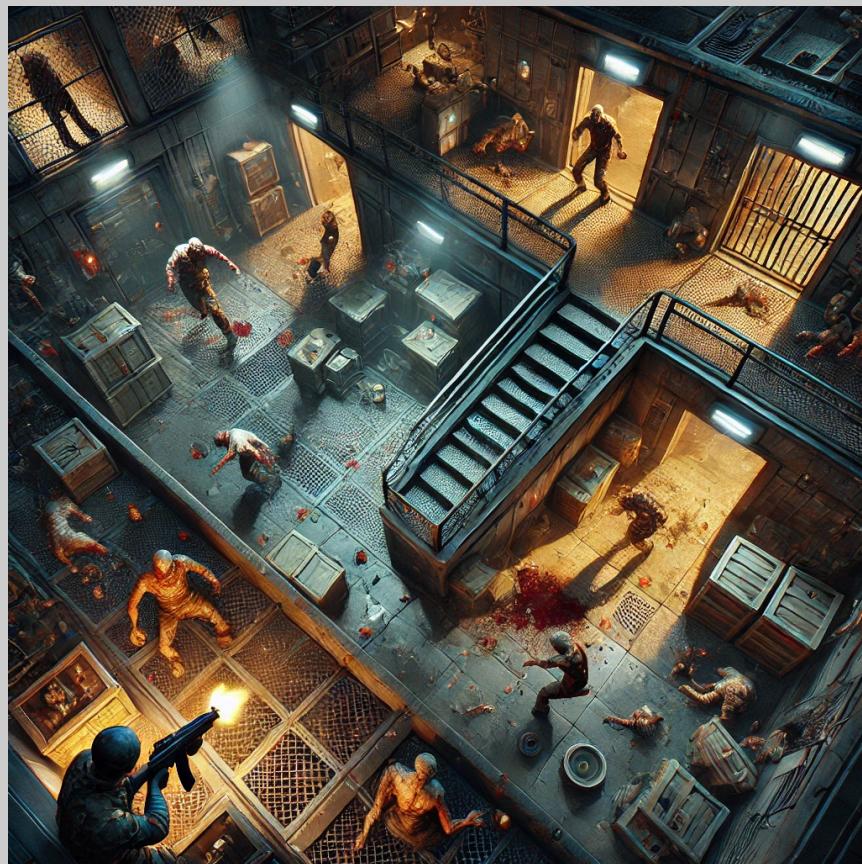


Outbreak

“Stay Silent, Stay Hidden, Stay Alive”



Game Concept By The GaMeRs



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1 Introduction

This document describes the concept and design for *Outbreak*, a top-down shooter game which combines a top-down style with elements from first-person shooters in order to create an immersive and intense experience.

Before getting into the design, here are some brief introductions from the team members.

1.1 Team Member Introductions

Gary: co-lead-designer, co-senior-programmer, co-lead-senior-art-director

Gaming Background: I have a strong preference for single-player FPS shooters and RPGs, particularly those with a "soulslike" style, such as the *Dark Souls* series, *Bloodborne*, and *Elden Ring*. Additionally, I enjoy open-world and fantasy games, often appreciating immersive, narrative-driven experiences across various platforms.

Target Audience: The target player base for my game would consist of casual gamers who play at their own pace, without the pressure of real-time events or falling behind. These players value a personal, engaging experience over the game serving as a social platform.

Working with the Team: I believe I can collaborate effectively with team members who have different gaming interests, provided we share an enthusiasm for designing a game that prioritizes fun and action, with some alignment in the chosen genre.

Renquan: co-lead-designer, co-senior-programmer, co-lead-senior-art-director

Gaming Background: I have a broad range of gaming interests, regularly playing genres such as MMORPGs, open-world games, FPS, SLG, RTS, ARPG, SPG, and idle games, primarily on PC and mobile platforms. For the game I aim to design in this class, I want to target players who enjoy the zombie apocalypse genre and shooting games, particularly those who gravitate towards mobile gaming for its accessibility and convenience.

Target Audience: My interests closely align with this audience, as I share a similar appreciation for these genres and understand the appeal of engaging gameplay on mobile devices.

Working with the Team: Additionally, I'm confident in my ability to work effectively with team members who may have different gaming interests or target audiences. Through my previous internships, I've developed strong communication skills that enable me to navigate

differing opinions, foster productive discussions, and reach collaborative solutions. This ensures that the team can align on a shared vision, even when perspectives vary.

Max: co-lead-designer, co-senior-programmer, co-lead-senior-art-director

Gaming Background: I play all kinds of games. I play tactical fps games, real-time strategy games, rpgs, adventure games, story games, survival games, etc. My favorite games of all time are *Red Dead Redemption*, *Rainbow Six Siege*, and *Terraria*.

Target Audience: I want my game to target people that are curious and like to solve puzzles/problems and find creative ways to complete objectives. I also want people to feel immersed in the game world.

Working with the Team: I love all types of games so I doubt I will have a problem working with team members who have different interests.

2 Game Play Overview

What follows is a general description of gameplay including genre, player character, objectives, rules, mechanics and interface.

2.1 Genre

The game is a blend of multiple genres, primarily horror, shooter, action, stealth, and exploration. Horror elements are conveyed through the environment and enemy design, featuring monsters, mutants, and biological weapons akin to the *Resident Evil* series. Set in a secret underground biological weapon development facility that has suffered a blackout, the game incorporates science-fiction horror themes. Survival mechanics such as resource management and evading monsters are central, with FPS elements introduced through firearms, aiming, and accuracy in a top-down format. Action gameplay emerges from fast-moving enemies attacking in large numbers, challenging players to react quickly and dispatch threats precisely. Stealth mechanics encourage players to avoid direct confrontation, utilizing noise and hearing systems where movement and sound alert enemies.

2.2 Player Character and Main conflict

The protagonist is a new security guard on their first day at the facility. Following a blackout, containment cells are breached, releasing biological horrors. The protagonist must navigate the dark, monster-infested facility to escape. Equipped with a flashlight and access to weapons caches, the player faces environmental and combat challenges to survive.

2.3 Super Objective and Rules

The player's super objective is to escape the facility by progressing through its floors and reaching the top exit floor in order to survive. The basic game rules for progression are as follows. On each floor players must find the exit point (marked by a blue square and arrows) in order to progress to the next level. Players will die if their hit points reach zero and players can lose hit points by being attacked by zombies. Some other fundamental rules are as follows. Zombies will chase the players if there is direct line of sight or if they are within the player noise circle, in a darkroom the zombies are blind unless they are shone with a flashlight. The player cannot shoot while reloading and is slowed, the player can only shoot when there is ammunition in the magazine. Enemies do not appear on screen unless the player character has direct line of sight to them.

2.4 Primary Mechanics and Levels

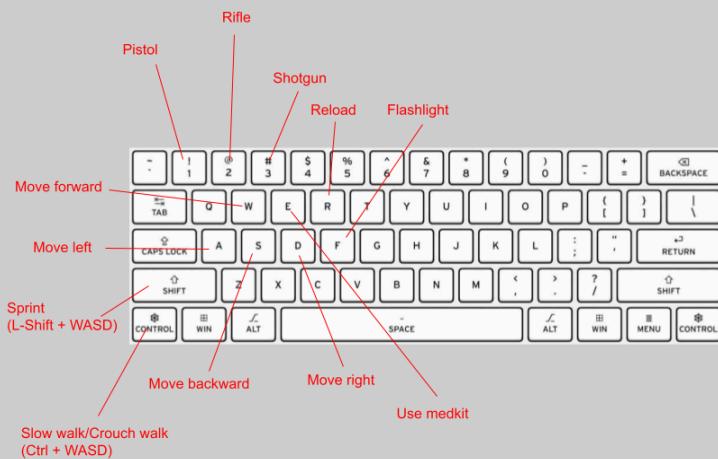
Currently three levels have been planned. The difficulty of the levels will be determined by the number of enemies as well as the number of dark zones/ dark rooms. The first level will have very few dark zones and relatively few enemies, progressing to the second level more enemies will be present and players will have to traverse through dark zones to reach the end of the level. The third level will be completely dark and contain many enemies. The primary mechanics of this game are shooting/gunplay, sound and noise, pickup and flashlight. Players can choose to shoot with three different weapons, pistol, rifle and shotgun provided they have collected ammunition for the gun. When near an enemy that is not alerted players will be able to hear a groaning sound which is essential for navigating dark rooms, conversely the players themselves emit noise in the form of a white circle. Enemies inside the circle can “hear” the player, detecting them. Firing any weapon will briefly greatly enlarge the circle mimicking the player making a loud noise. Players can also find med kits and ammunition throughout the map which can be picked up by touching them with the player character. In dark rooms players may choose to turn on the flashlight which will illuminate the room for better visibility, however shining the flashlight on an unalerted enemy will alert them.

2.5 Interface

Player movement is controlled from a top-down perspective using the WASD keys (see figure 2.5.1), with movement relative to the direction the player character is facing. W moves the character forward, S moves it backward, and A and D move it left and right, respectively. The mouse is used to rotate the character: moving the mouse left rotates it counterclockwise, and moving it right rotates it clockwise. The camera is fixed on the player, so while the character rotates, the map moves instead of the character itself, keeping the character facing the top of the screen and always in the same position (see figure 2.5.1).

Weapon switching is done with the number keys: 1 for the pistol, 2 for the rifle, and 3 for the shotgun. Left-click fires the weapon, while R reloads it, temporarily slowing the character and disabling shooting. Pressing E allows the character to use medkits to heal, and F toggles the flashlight on or off.

Figure 2.5.1: a basic diagram of the keymappings for this game



2.6 GUI overview



Figure 2.6.1: sample viewport of game view and GUI

The GUI in this game is relatively simple but conveys important information to the player (see figure 2.6.1). The white circle around the player represents a "noise radius," showing the range within which enemies might detect the player. It expands and contracts depending on the player's actions. Beneath the character, a red bar indicates the player's remaining health. In the bottom-right corner the GUI displays the currently equipped weapon, ammo count, and the number of health packs (see figure 2.6.1, bottom-right corner). The box in the top-right corner, indicates the current stage (see figure 2.6.1, top-right corner). The environment features limited visibility with darkened areas surrounding the player's field of view, emphasizing stealth. Key interactable items, such as a medkit and ammo pickups, are visible on the map (see figure 2.6.1 ,ammo in the bottom left and medkit in the top left). The GUI is kept as simple as possible to avoid clutter and maximize immersion.

3 Target Players and Similar Games

The following section identifies the target audience and player base for *Outbreak* and pinpoints where *Outbreak* fits into the current gaming market.

3.1 Player Base

This game is designed to appeal to players who embody the **Killer** and **Achiever** archetypes, offering gameplay that aligns with their unique preferences.

Achievers will thrive on the structured challenges the game provides. Whether striving to complete a level in complete stealth or methodically clearing out every enemy in sight, they will be motivated by the sense of accomplishment that comes with mastering and utilizing the game's mechanics to their full potential. Achievers will find enjoyment in resource management, efficient navigation, and achieving optional objectives, such as uncovering hidden rooms or finishing levels with minimal resources used.

The game's difficulty curve and reward system are tailored to keep them engaged and striving for perfection. Killers will find satisfaction in embracing the game's combat-heavy elements, taking on the challenge of eliminating enemies with precision and speed. While the game leans heavily toward stealth, a more aggressive "guns blazing" approach is viable but difficult. Limited resources like ammunition and the high danger of alerting more enemies with combat make this playstyle a challenge of skill and quick thinking. For Killers, the thrill of fast and difficult combat encounters and the rush of clearing dangerous areas such as dark zones will be key highlights.

Explorers will immerse themselves in the horror atmosphere of the game's setting. These players will be more immersed in the environment and explore the levels with curiosity. Explorers will explore every corner of the facility, scavenging for resources like ammunition and medkits. The mechanics of obscured visions, dynamic lighting and shadows ,dark rooms and dynamic sound are designed to increase immersion.

Socializers are less likely to find the game appealing. The solitary and isolated nature of the gameplay, focused on survival and resilience, leaves little room for social interaction or cooperative play. The experience is ultimately a personal one.

This game draws inspiration from titles like *Dead Space*, *Bullet Echo*, *Endoparasitic*, and *Door Kickers*, so players who enjoy these games will likely enjoy this game. The game combines survival horror, tactical gameplay, and resource management to create a unique and immersive experience. Players will navigate a tense, claustrophobic environment, balancing stealth, combat, and exploration as they ascend through the facility's levels. This game offers something for those who crave tension, strategy, and atmosphere.

3.2 Similar Game Descriptions

Our game draws significant inspiration from *Bullet Echo*, a mobile game by Zeptolab, the creators of *Cut the Rope*. *Bullet Echo* focuses on multiplayer, player-vs-player, and battle royale gameplay with innovative map design.



Figure 3.2.1: sample gameplay of the game bullet echo showing the GUI

One mechanic we've adapted is its approach to camera and player movement. In Bullet Echo, the camera moves with the player's input, rotating the map clockwise or counterclockwise while keeping the character fixed at the bottom center of the screen. This setup provides a more intuitive representation of movement from a top-down perspective, enhancing gunplay and aiming precision. Additionally, joystick controls are relative to the player's facing direction, akin to steering a car, which adds a natural and fluid feel to navigation and combat.

We've drawn inspiration from Bullet Echo's visibility mechanics and dynamic shadows. In Bullet Echo, the map is completely dark, and players can only see others by pointing their flashlight at them, while the environment remains visible. This creates tension and adds potential for jump scares and ambushes, as players know the layout but not enemy positions—a concept also seen in *Among Us*.

Another borrowed mechanic is noise circles. In Bullet Echo, players can detect enemies as red footprints when their noise circle overlaps with the player's hearing circle, even without direct visibility. We adapted this mechanic for zombies to detect the player, encouraging a semi-stealth playstyle that adds depth to the gameplay.

In terms of concept, visuals, setting and story we were inspired by the game *Endoparasitic*. The synopsis of this game is as follows.

“Three limbs ripped off, infected with a deadly parasite, you must save your research. Drag yourself through the corridors of a secret research lab on a remote asteroid, fight off horribly mutated monsters, inject countless syringes of vaccines, and survive at all costs.”

The games take on survival, horror and visuals inspired us greatly. The darkrooms are supposed to simulate the visual gameplay of Endoparasitic as in the game the player has a very limited field of vision due to crawling on the ground. In both our games sound is also a central mechanic for preemptively detecting enemies. The survival and resource management aspects of our game are also inspired by endoparasitic.

Door kickers was a general inspiration as it was a unique take on the tactical shooting genre in 2D and a role model for our game. *Door kickers* shares the dynamic vision from *Bullet Echoes* where areas out of view from first person are greyed out in the top down view hiding enemies but not the environment. The gunplay in our game was also inspired by the gunplay in door kickers. Originally we planned on adding more tactical elements similar to those seen in door kickers but due to time restraints the idea was scrapped.

4 Game Art

The following is an overview of the artwork used in *Outbreak*.

4.1 Player



Figure 4.1.1: Sample player sprite

The player character artwork is a 2d sprite. The sprite is wearing a black baseball cap, a dark green jacket, and a camouflage backpack. The player may be carrying three different weapons—the rifle, pistol, or shotgun. The player is animated with sprite frames.

4.2 Map



Figure 4.2.1: Map layout for level 2, dark rectangles represent the area of dark rooms, the blue circle at the middle bottom is the player's starting position in the level

The dark green areas represent our walls, the grey areas represent the floor. The darkened areas represent the dark rooms, which works demonstrated in figure 4.3.2 . Besides that, we have some decorations on the map and yellow arrows that lead the player's way.

4.3 Player View

The player is walking backward in the hallway next to a wall. His noise circle remains a normal level so he won't wake up the zombies hidden in the dark room, as represented by the little red dots. The zombie is in a state of chasing, led by the path-finding node that keeps his head towards the player character.



Figure 4.3.1: This picture demonstrates the scene of a player walking away from a zombie that is chasing him.

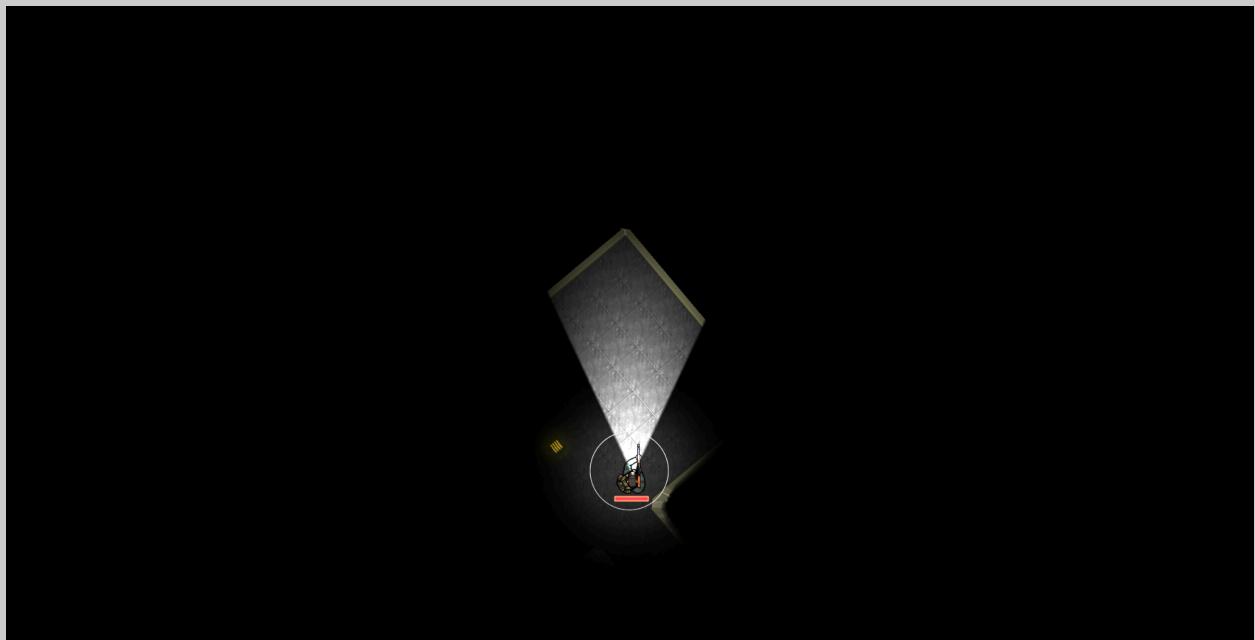


Figure 4.3.2: Viewport when player is in a dark room

This figure demonstrates the vision of the player in a dark room. The player's vision is limited to a circle that is very close around the character's body. He is crouching to make a minimum noise (as you can see the noise circle shrinks) to avoid waking up the zombie. He toggled the flashlight on to gain more vision. There's an ammo pick up next to him that is glowing yellow light.



Figure 4.3.3: This figure shows that player is crouching and approaching a dead zombie with his flashlight toggled on. The player is still shooting, as shown by the yellow stripes on the screen.

The player view in this game is unique in that although the player can see parts of the map that usually cannot be seen in first person, for example in figure 4.3.1 the player can see another corridor on the right despite no direct line of sight. However, although the player has this advantage they are unable to see enemies the same way. Areas outside of direct line of sight are greyed out and areas in line of sight are white as seen in figure 4.3.3. Enemies outside of direct line of sight do not appear on the map.

5 Sample Game Play Description

This section details a guided walkthrough of level 1 of *Outbreak*.



Figure 5.1: player spawn point

At the start of the level you will see two ammo boxes to your left (see figure 5.1), picking them up is imperative as they are your only defense against the horrors ahead.



Figure 5.2: picture shows a medkit and two possible paths

As you progress you pickup the medkit (see figure 5.2) and decide to proceed forwards as the other path is darkened and ominous.



Figure 5.3: player is attacked zombies

Unfortunately , the room you entered is filled with bloodthirsty zombies (see figure 5.3) who immediately spot you in the brightly lit room, without time to react you fire your gun, but it is not enough and soon you are overwhelmed and greeted with a grisly end.



Figure 5.4: player approaches a dark room

In your next attempt you decide to take the other path facing the darkness rather than the monsters (see figure 5.4).



Figure 5.5: player is in the dark room with the flashlight on

The low visibility forces you to turn on your flashlight giving you some sense of direction and location (see figure 5.5). Luckily no zombies were in the room and you move forward realizing that sometimes braving the light is more dangerous than hiding in the dark.



Figure 5.6: player surrounded by dead zombies

Your luck unfortunately runs out as you leave the room. A zombie spots you and attacks, you retaliate with precision and speed neutralizing the enemy but your gunshots have attracted others, leading to a brutal fight which you manage to survive (see figure 5.6). You learn an important lesson that the consequences of firing a gun are not light.

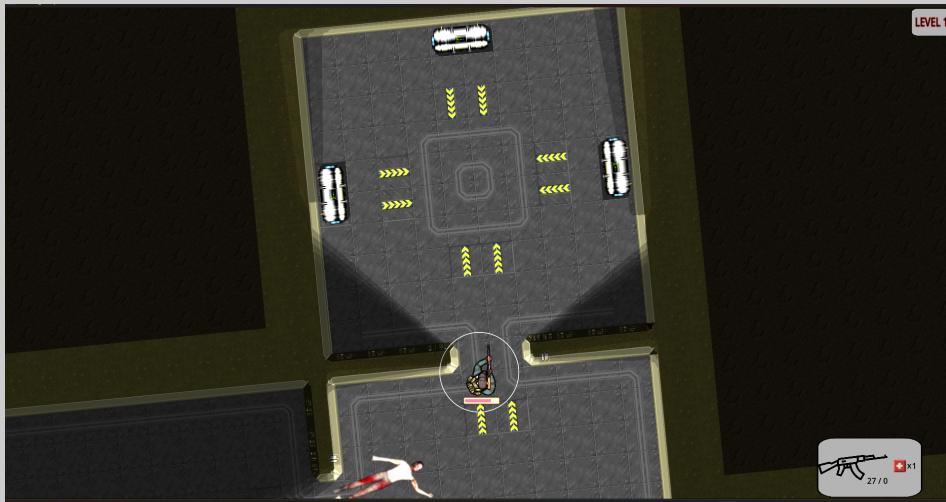


Figure 5.7: player stands in front of the end of level 1

After a few more skirmishes you reach what appears to be an exit (see figure 5.7). As you look around you hear the screeching monsters, you know you have been seen. Without any other choice you walk into the exit, entering the next level.

6 Game Mechanics

A description of the mechanics of *Outbreak*.

6.1 Core Mechanic

Escape:

The core mechanic of the game is to escape the facilities with abilities offered by the primary and secondary mechanics and the player's skills.

6.2 Primary Mechanics

Movement

Visual:

A walking animation or running animation will play depending on whether the character is sprinting or walking and the character will move to a different location

Audio:

Foot step noise will be made while the character moves, the noise will be louder and faster for running animation and quieter for walking animation

Shooting (aim, reload, switch weapons)

Visual:

The character sprite will appear to hold a gun in his hand, a reload animation will play while reloading, switching weapons will visually appear as the character holding a different weapon, a shooting animation will play when shooting and bullet projectiles will be fired.

Audio:

A noise of reloading will play when the animation to reload plays, switching weapons will cause a short sound of shuffling to play. When the shooting animation plays for each projectile that is created and fired a gun shot effect will play.

Noise

Visual:

All player actions will make noise, as visually represented by the white circle on the screen. If the noise circle collides with the monsters, it will wake up the monsters and lead them to the player.

Audio:

All player actions besides movement will have corresponding sound effects to be played, such as shooting, reloading, etc.

6.3 Secondary Mechanics

Pickup

Visual: when the player walks over an item that can be picked up, the item sprite disappears

Flashlight

Visual: when the flashlight is turned on, a ray of light is shined forward making the area visible