1. Title Page: Game Design Document (GDD)    
Followed by the Game Implementation Plan

1.1. **Game Name**: Prison Burst

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2. **Game Overview**

**2.1. Game Concept**

**Introduction**: Prison Burst is a first-person escape game. The protagonist is a infiltrator and survivor, who is sent to investigate the remains of a prison corrupted by a virus. Our protagonist must survive the horde of undead and escape safely.

**Background**: Prison Burst is a game developed using Unity.

**Description:** Grey is a military veteran who had many years of service and is recruited again to infiltrate and investigate the ruins of a prison fallen to the people corrupted by the Vritra virus. The player must kill or sneak past the line of sight of undead still guarding the building to safely return to base with new information.

The goal of Prison Burst is to provide a challenging experience keeping the player on their toes by allowing versatility in the approach possible with monsters.

2.2. **Target Audiences:** Teenagers & Young Adults.

2.3. **Genre(s):** FPS, single-player, action, closed world, survival.

2.4. **Game Flow Summary** – How does the player move through the game? Include both the interface and the game itself.

The game flow starts with a main menu in which the player can click to start the game. The rest will consist of the player following a set of corridors and exploring rooms that come before them. Equipped with two guns, the player can use whichever they prefer and look for an exit. If they find the gate first, the player will be asked to retrieve a key, if they find the key first, they will have to look for the gate which will trigger the victory screen assuming they did not die in the process which would lead to a death screen allowing the player to re-try from the beginning.

2.5. **Look and Feel** – What is the basic look and feel of the game? What is the visual style?

The Player will feel like a they are in a medieval dungeon that is not maintained while all they can see is prison cells, torches and zombies. This makes the player believe in is a dire situation and that survival is key and the only thing that can help him live is wit and his trusty guns.

3. **Gameplay**

3.1. **Objectives** – What are the objectives of the game?

The objective, put it simply is to escape, kill everything in your path or sneak past unalerted zombies to acquire a key and open its corresponding gate to return to base with brand new information about the strange prison.

3.2**. Game Progression**

The player will start in a more open environment with few undead and as the player traverse the map, they will find more rooms filled with zombies in a higher number count hunting the player down even if they did not visually see the player and the game will end once the player has collected the key and has approached the gate while in the possession of the key.

3.3. **Play Flow** – How does the game flow for the game player

The Player will start with two guns, one is a semi-automatic rifle and the other is a full-auto. The first floor is designed to be an introductory level with only a few enemies and only some present in diverging rooms, once the player goes down the spiral stairs, they will enter the second level of the building. In this level, the enemies are more present and as the player progresses, more will be waiting around walls to jump on the player and in higher numbers too. The player needs to be cautious and needs to check all angles before entering a new room. The player can choose to shoot from range enemies that have not picked up their location or can sneak pas them.

3.4. **Mission/challenge Structure**

The first floor is a beginner section with only a few enemies and only a couple around corners and separated rooms. The second floor which is found after going down the spiral stairs has more separated rooms and will contains more enemies around the corner approaching the player in higher numbers. The player is punished if he tries to run away from zombies after alerting them because they have a higher speed and attack the player from behind. Therefore they must eliminate each threat that they awaken before letting their health bar go out.

4. **Mechanics (Key Section)**

4.1**. Rules – What are the rules to the game, both implicit and explicit.**

The player has a vast amount of ammunition but has a limited amount of health. Every zombie takes the same amount of damage to go down and must be eliminated in order to not take damage, because they enemies close in on the players position vast and attack them when they have spotted the player. When the health bar depletes, the player dies and needs to restart the game. The player must simply touch the key when they find it by going near it to grab it and must bring it to its corresponding gate to escape the prison before dying.

4.2. **Model of the game universe. Think of it as a simulation of a world, how do all the pieces interact?**

Each room and corridor is part of a prison. Some doors are open, some are half open and some are closed showing that many zombies have escaped their cells. Some half open doors will be inaccessible showing the zombies that were once human before getting affected by the virus once shrinked and then got bigger. There are stairs leading up to an office in which the key is located and a labyrinth is found on the opposite side where the exit resides.

4.3. **Physics – How does the physical universe work?**

Gravity is present in the game allowing for the player to drop from multiple high level surfaces, there is collision using rigid body for example between bullets and the enemies allowing them to be hit and ultimately die. Particle physics, they are used on the weapons muzzle as the muzzle flash. Projectile physics is implemented when the player shoots his weapons and the bullets have velocity.

4.5. **Character movement in the game**

“W A S D” will be the primary player movement, these keys will allow the user to go forward, backwards, to the left and to the right and can be paired up with shift to allow the player to run. The space bar will allow the user to jump. Moving the mouse will allow the player to change the direction of the hip fire crosshair and look.

4.6. **Objects – how to pick them up and move them?**

Only a key is available for pick-up in this game and can be done by simply approaching and touching that item with their body.

4.8. **Combat – If there is combat or even conflict, how is this specifically modelled?**

The player has two guns which they can select on their own will. The player needs to shoot the enemy 5 times to kill them, and the player has a health pool of 50 health that will deplete every second a zombie is around the player. The one second delay is associated with the enemies one second delay for their attack animations. When either one of their hp hits 0, they will die and in the case of the player, they will be brought to a death screen. The combat encourages a cautious approach because if the player alarms too many enemies and swarm the player, they will start losing hp very fast. So they must eliminate all enemies or be careful enough to not alert many.

4.9. **Screenflow -- How each screen is related to every other and a description of the purpose of each screen**

Refer to Appendix ...

4.10. **Game Options - What are the options and how do they affect gameplay?**

Start: Pressing start allows the player to transition to the real game in the main menu.

Replay: Allows the user to replay the game in the victory screen.

Retry: Allows the user to retry the game in the death screen.

Exit: Allows the player to terminate the application

4.11. **Replaying and saving**

There is a replay option once the player beats the game on the victory screen or they can select retry in the death screen to try again and finish the game this time.

5. **Story and Narrative**

5.1. **Back story**

The world was hit by the Vritra Virus 2 years ago. Military veteran code name “Grey” was recruited for an infiltration mission in a remote prison suspected to have been infected by the virus that turns humans into hungry tall monsters. The virus could only be given through injection and reports have said that they might have experimented at that prison. Grey has now infiltrated the prison and was brought to his cell by humans. He found the stash of weapons secretly deposited in his cell, but the humans seem to have left the prison, only the undead remain. He must now return to base with this new piece of knowledge and visual confirmation alive.

5.2. **Plot elements**

Grey found the stash of weapons and has loaded up, he then opens the gate of his cell.  
  
Grey has reached the gate and is now free from danger.

5.3. **Game story progression**

N/A.

6. **Game World**

6.1. **General look and feel of the world**

The world seems to be in despair, no signs of life is around except the monstrosities and our protagonist is the only person alive in the prison. Each area feels like a dungeon filled with cells and broken items illuminated by only flames. Giving it an eerie feeling.

6.2. **Areas**

6.2.1.**General description and physical characteristics**

Floor 1: A simple upper part of a dungeon like place with a few open gates  
  
Floor 2: A more open but dangerous area with zombies around the corners and more prison cells. The floor 2 is connected to the officer’s chamber which is filled with drawers and a table and also the labyrinth which is filled with walls and empty cages.

6.2.2.**How are the rooms connected?**

The world is linear, connecting corridors to every part of the prison. Spiral stairs connect both floors and stairs connect the labyrinth, the officer’s chamber and the second floor.

7. **Characters.**

7.1. **For each character**

7.1.1.**Back story**

Grey: Ex-military veteran who is hired to scout the suspicious prison

Infected enemies: Humans affected by the Vritra Virus who have shrunken for a couple of months and the became taller than before and more deadly hungry for human flesh.

7.1.2.**Personality**

Grey: Intelligent, cautious.

Infected enemies: N/A.

7.1.3**.Appearance**

Grey: muscular and well-equipped.

Infected enemies: Muscular and tall.

7.1.4.**Abilities - Skills**

Grey: Jump.  
Infected enemies: N/A

7.1.5.**Relevance to the story**

Alpha: Main character.

Infected enemies: Main enemies of humans

7.2. **Artificial Intelligence Use in Opponent and Enemy**

All enemies have a field of view which goes through walls acting as a “sound” proximity detector. The enemies will find get the location of the player if they have been alerted and will actively try to get in range to attack the player. They will then attack the player once they are in range. They will restart running if the player chooses to run as well.

7.3. **Non-combat and Friendly Characters**

N/A

8. **Levels**

8.1**. Training Level**

 (N/A)

8.2. **For each level**

8.2.1**.Synopsis**

Level 1: Easy level with only a few enemy combatants.

Level 2: More difficult level with more enemies and surprises.

Officer’s chamber: Open room with few enemies and the key item.  
Labyrinth: Closed space with a lot of enemies and surprises ending with the final gate.

8.2.2. **Required introductory material and how it is provided**

Level 1: N/A

Level 2: N/A

Officer’s chambers: N/A

Labyrinth: N/A

8.2.3. **Objectives**

Level 1: N/A

Level 2: N/A

Officer’s chambers: Get the key.

Labyrinth: Approach the gate with the key.

8.2.4. **Details of what happens in the level**

Level 1: N/A

Level 2: N/A

Officer’s chambers: Player collects key.

Labyrinth: Player exists prison.

8.2.4.1. **Map**

*Refer to Trello “Appendixes”*

8.2.4.2. **Critical path that the player needs to take**

When arriving at the open area of level 2, the player can choose to take 2 sets of stairs, one leading to the room with the key, the other with the gate. Both rooms will need to be accessed to finish the game because both elements are needed to finish the game.

9. **Interface**

9.1. **Visual System**

9.1.1.**HUD**

Refer to Appendix 5

9.1.2. **Menus**

The main menu is displayed at the start of the game allowing the player to start or exit the application. The death menu is found after the player dies allowing them to restart and the victory menu is found after the game is cleared allowing the player to replay the game.

9.1.3. **Camera model**

First-person camera view.

9.2. **Control System – How does the game player control the game? What are the specific commands?**

[W A S D] -  Player Movement

[Space] - Jump

[Shift] - Run

[Left-click] - Shoot

[Scrollwheel] or [1-2] - Switch Weapons

9.3. **Audio, music, sound effects**

There is sound effects when the player shoots, runs or jumps. There is also sound effects for the zombies states such as idle, run and attack.

9.4. **Game Art – intended style**

Refer to Appendix

9.5. **Help System** N/A

**Appendixes**Diagram

Description automatically generated  
Diagram

Description automatically generated Diagram, schematic

Description automatically generated Diagram

Description automatically generated Diagram

Description automatically generated

**Game Implementation Plan**

* Get prison asset dungeon asset
* Make Level 1: ->
* Make gates
* Make corridors
* Make small cells
* Make cell door
* Make torch objects
* Make floor
* Make stairs
* Make invisible stair mesh
* Make spiral stairs
* Make extra candles and barrels on the floor: decoration
* Make Level 2: ->
* Add more cells
* Add chains and locks
* Add double staircase
* Clone floors and ceilings
* Add texture to gates, floors, ceilings and walls
* Make Officer’s Chambers ->
* Make desks
* Make drawers
* Make chair
* Make key object
* Make Labyrinth: ->
* Clone walls, ceiling, floors
* Add empty cages
* Add more torches
* Add final gate
* Add FPS asset character
* Make guns
* Make bullets
* Make muzzle flash
* Add movement
* Add bullet shooting projectile
* Add muzzle flash showing up when fired
* Add sound effect when gun is shot
* Make bullet collide
* Make player jump
* Make player switch guns
* Add weapon ammo manager
* Make reload animation
* Add health bar UI
* Attach health to player
* Add enemy
* Add idle, run, walk, attack1, attack2, death animations
* Make enemy see player
* Make enemy follow player
* Make enemy attack player
* Make enemy attack damage player per second
* Make enemy die if shot 5 times
* Make enemy walk on floor (bake)
* Add sound effects to enemy animations
* Make key object collectible
* Make key object alert gate that it has been collected
* Make gate object change scene if key object is collected
* Add Main Menu scene
* Make main menu start game on press of button
* Add play button
* Start game on button click
* Add death screen
* Make death screen load game scene when retry clicked
* Add retry button
* Attack death screen to player death
* Make victory screen load main menu scene when replay clicked
* Add replay button
* Attach victory screen to gate when key is collected, and gate is collided