

# Invasive

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IAT 410 D100

Advanced Game Design

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## Primary Gameplay Mode

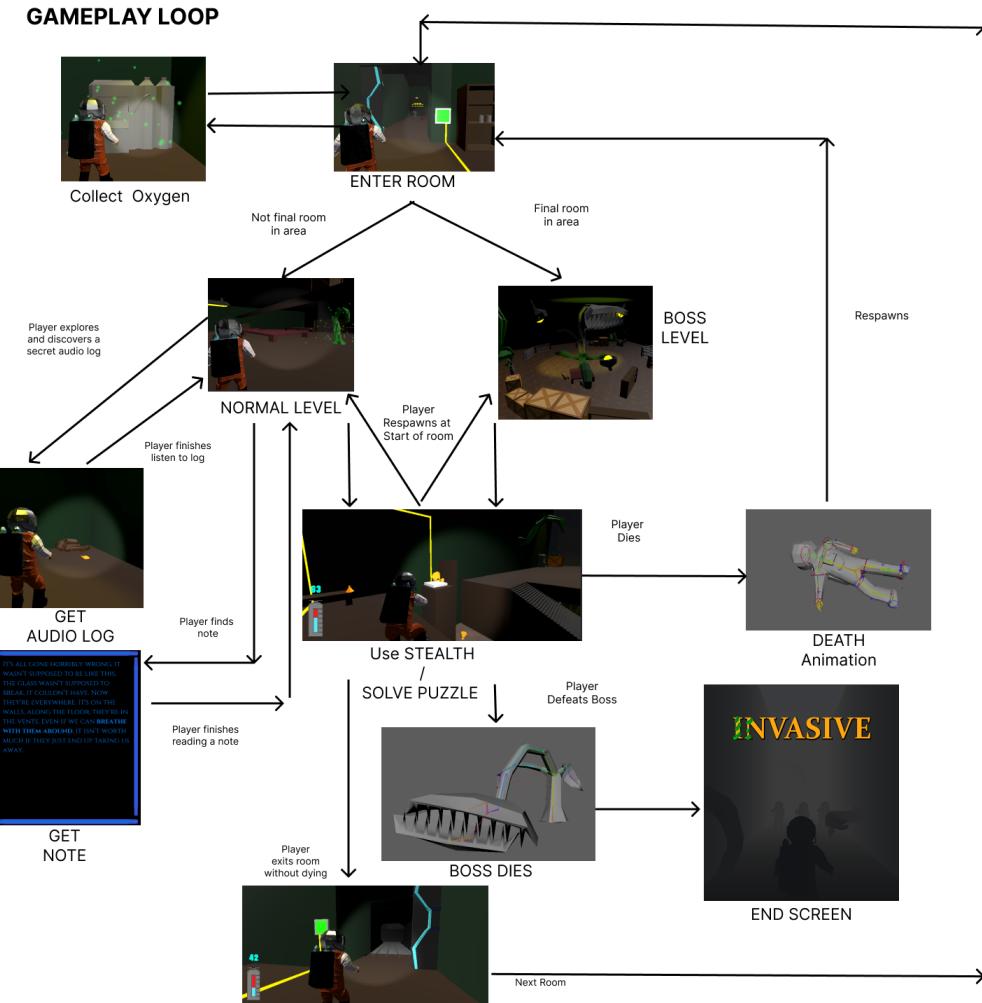
### **Perspective** - 3rd Person, Over-The-Shoulder/Free Camera

The Majority of Gameplay is executed in a 3rd Person perspective. The camera is placed behind the player in an over the shoulder aspect but will also be free from the front-facing view of the player so it can be moved around without rotating the player. The point of this was to allow for more visibility on the player's side as well as allowing the player to look around them while being able to stay in one location as the camera is free from the rotation of the character. Having the player in 3rd person will also allow them to see around the map while aiming the throwable item without hampering their sight too much.

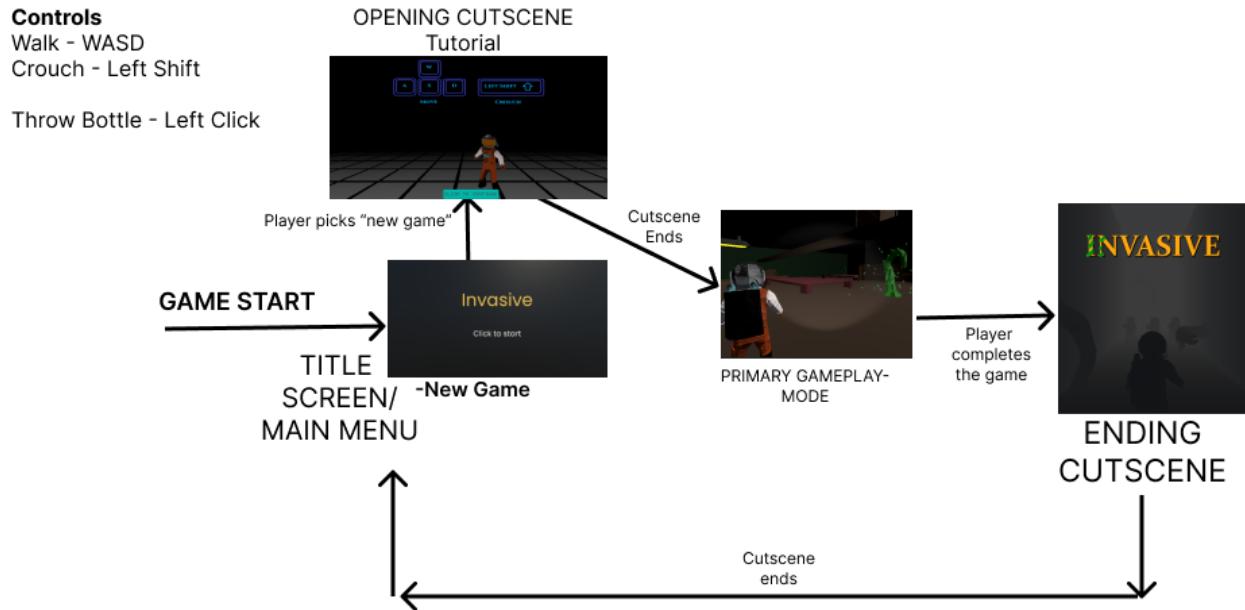
### **Interaction Model** - Avatar based

The player has a physical avatar that they can use to interact with the surroundings, sneak past enemies, and move around the environment to solve puzzles and defeat enemies. This also allows us to provide more context and narrative of who the character is based on their design. As we use similar models for the player and some of the enemies, we show that other people like the character have been corrupted and killed by this plant. By seeing this similarity, we are able to see that the player is just as easily killed as these other enemies.

## Core Loop -



## REVISED FLOWBOARD



**Standard Rooms** - These are rooms where the player will have to maneuver around obstacles and enemies in order to get to the next location. These areas could include a number of enemies and multiple paths to get to the next location. These rooms will also typically have a mini puzzle that the player will need to complete in order to open the door to the next location. The “Winning Play” for the player is killing enemies in the location and solving the puzzles to get to the next location.

**Puzzle Rooms** - These rooms are primarily focussed on a large puzzle that takes up a majority if not all of the room that the player will need to complete in order to move on. While there may be “enemy-esque” aesthetics in these rooms, they are relatively harmless and are not designed to hamper the player too harshly as they try to solve the puzzle and make it to the next location. The “Winning Play” in these rooms is simply to solve the puzzle and proceed through to the next location.

**Boss Room** - There will be a large plant-based boss in the room. The player cannot directly fight the boss, instead will have to outwit the boss and solve a puzzle to destroy or incapacitate the boss.

### Strategies:

**Strategy: Oxygen** - The player has a limited oxygen meter that depletes over time. If it hits 0, the player dies. Being near plants (or plant based enemies) causes oxygen to regenerate. So finding hiding spots near plants or where enemies will patrol will give players oxygen. Levels will have good hiding spots, but these will not have oxygen, so the player is limited in the time they

can spend there. More dangerous spots will have better oxygen sources. So the player will have to balance safety with oxygen. They may also choose to take a safe route with oxygen breaks, or try to sprint through levels so that oxygen is not an issue. The player is expected to die somewhat often, but in doing so will figure out strategies and layouts for rooms. Dying only causes you to go back to the start of the room that you died in, which means you won't lose much progress.

*Strategy: Log* - While the player will want to get through areas as fast as possible, they might also want to explore rooms out. They may find an audio log which will help them discover the story of the game. These logs (audio and note based) are hidden throughout the facility. The player's character will be able to learn certain things about the game and certain enemies or offer hints as you continue playing. Getting creative and finding that secret area with the audio log is key to finding it.

*Strategy: Throwable items* - Players can pick up bottles around the map and use them in a variety of ways. It can be used to distract enemies and draw them away from you. They can be used to move enemies into a location to solve puzzles. Throwable items can also be thrown onto certain buttons in order to open doors.

*Strategy: Killing Enemies* - Crates can be found around the map. They are able to be knocked off of platforms and dropped onto an enemy. If they are dropped onto an enemy then the crate will kill the enemy. This can be used in order to open up new paths for the player to travel.

## Protagonist:

- ❖ **Jesse Bentleye:** an Astronaut who is an ex-space marine.
- ❖ Age and gender are purposely left ambiguous so that it is easier for the player to relate and place themselves into the character's shoes.
- ❖ Their abilities consist of Survival Skills in dangerous situations, technical work as an electrical engineer so they know how to use electrical systems, and combat skills (however that will mainly consist of the ability to utilize stealth and dodging out of the way).
- ❖ The tools available to them are their space suit that allows them to survive in the space station's toxic atmosphere, their oxygen tank for them to breathe, and an array of throwable items that can be found on the ship and will help them to distract the enemies and solve puzzles.

- ❖ Character's knowledge is very basic. They do not know what happened on the space station or what is in the space station. They also do not know the layout of the space station or where people are located. They know how to use the equipment they find on the space station as well as the knowledge of basic botany as their wife was a botanist for the lab experiments.
- ❖ Backstory: The player (Jesse)'s wife works at a secret facility where a distress signal was sent out. The distress signal describes the facility's experiment having broken out and that people should not approach. Receiving this signal, the player decides to try to approach the facility to rescue the remainder of the crew and save their wife.



Player Crouching

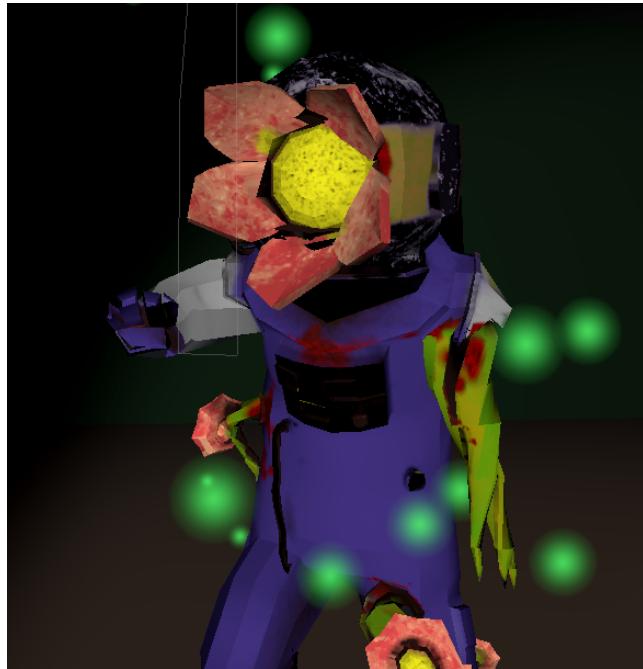


## Antagonist:

- Invasive Plant Creatures: There are four types of enemies in the game that the player needs to avoid and defeat. There are the vine enemies, the shambler, the fungal leaper, and the Venus Fly Trap Boss.
- **Basic enemies:**
  - **Vine enemy:** a large vine that is protruding from a flat surface. The vine enemy will rotate towards the player once they get close enough. The vine will then attack the player once they reach a certain distance. The player may use this enemy to damage buttons and open doors nearby.



- **Shambler:** A walking “zombie” enemy that will chase the player if they spot them. The player is able to sneak by these enemies by crouching and walking past them. Additionally the player is able to maneuver enemies towards buttons that open up doors.



- **Fungal Leaper:** The Fungal Leaper is a fast enemy that will rush at the player if the flashlight is turned on. These enemies are made out of large mushrooms and give off a bioluminescent glow that betrays their location. These enemies are fast paced and will rush the player when activated.

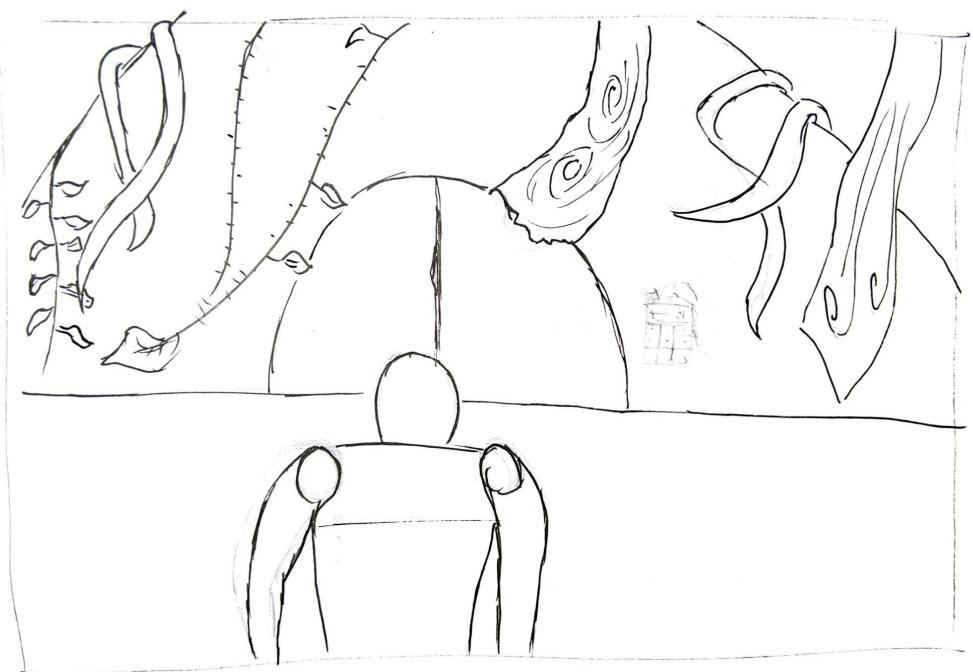


- **Boss enemy:**

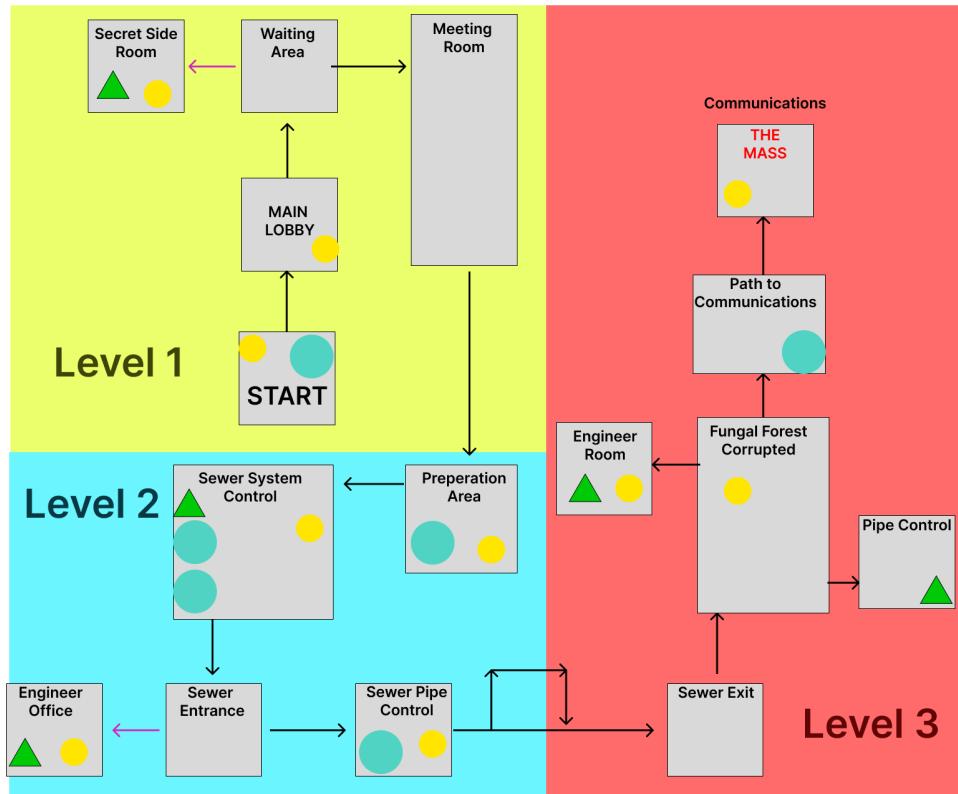
- Final Boss: A massive venus fly trap that has taken over the station. This venus fly trap is larger than the other creatures you've fought and has been spawning new creatures around it. The venus fly trap will act in a similar manner to the vine enemies and will try to lunge at the player once they are close enough.
- The plant was experimented on using new genes that made it adapt to its surroundings to be used for faster terraforming, however this also made the plant more aggressive. The plant eventually grew to encompass the station and grew its own environment, succeeding in creating a new habitat. It has been growing and thriving up until an invasive creature arrived to destroy it.

## Gameplay Sketches





## World Map



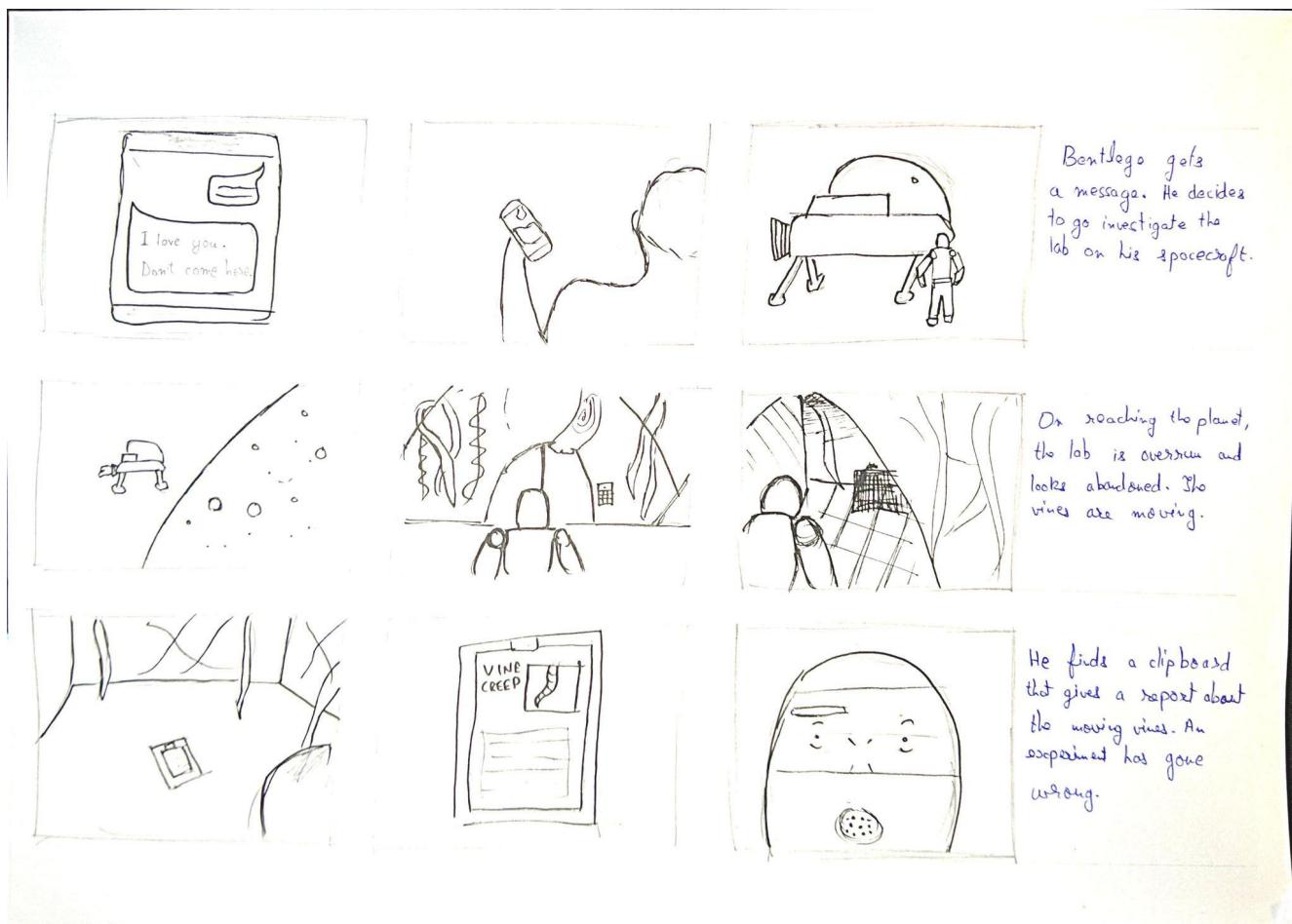
### LEGEND

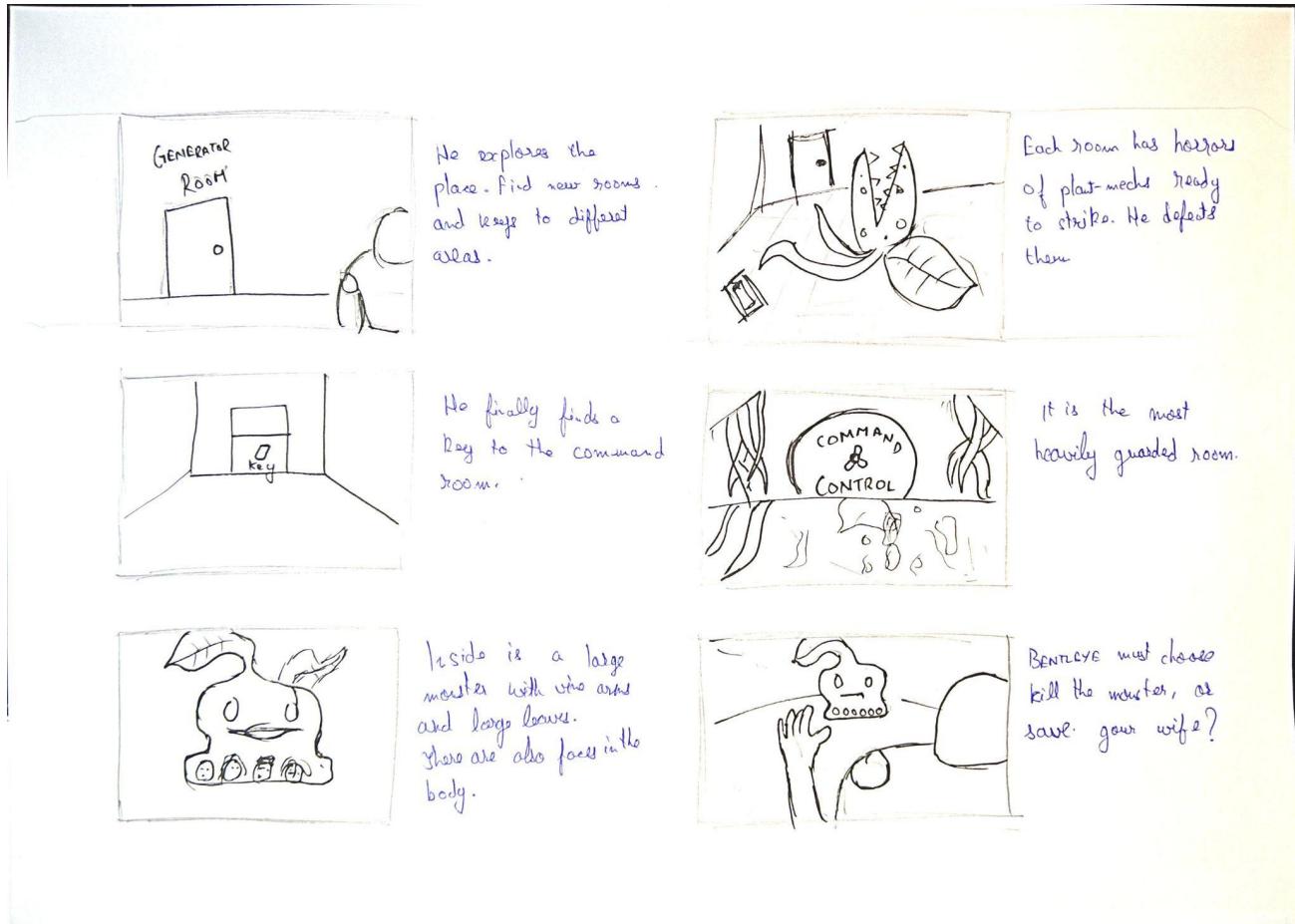
- |   |        |  |                        |   |  |
|---|--------|--|------------------------|---|--|
| <span style="background-color: #ccc; border: 1px solid black; padding: 2px;"> </span> | = Room | <span style="color: magenta;">→</span> | = Hidden/Non Mandatory | <span style="color: red;">THE MASS</span> | = Boss Fight                                       |
| <span style="color: yellow;">●</span>   | = Item |  |                        |   | <span style="color: cyan;">●</span> = O2/Savepoint |
| <span style="color: black;">→</span>  |        |  |                        | <span style="color: green;">▲</span>      | = Bonus Audio Log                                  |

## Narrative

The year is 2186. Game starts, you receive a message. "I love you. Don't come here." The message is from Dr. Bentleye, your wife. She was a biologist working at a top-secret research facility in a different solar system. Now this message. You have no choice but to go look. So, you decide to get in your old space cruiser and take off. On approaching the planet, you find it mostly abandoned. There are no signs of life other than a large space station. You land, and on closer inspection it looks like the station hasn't been in use for years. Impossible. The message was from days ago, but it's clear as day- the buildings are in ruin, and there are plants and vines growing all over everything. You step into the abandoned building and find oxygen stations to fill up your tank as it runs out quickly. You will have to search through the building to find clues about what happened to your wife. There are several enemies in the building that will

attack you and you have to stay away from them as you don't have any means to fight back. These enemies that are strange plant-like creatures, are also oxygen sources for you if you can't find other oxygen sources. You can fill up your tank by getting close to them but make sure you don't touch them as you will die. Dying means you will start off again in the same room. Enemies include giant vine creatures and shamblers that look like zombie plants. Vine enemies will attack you by attempting to pierce you. Zombie plants will follow you once they see you and if they touch you, you will die. You will have to walk through the building until you get to the last room where you face a massive vine enemy that will start shooting at you once you enter the room. You have to try to stay away and fill up your oxygen tank by getting close to the giant vine while you stay away from its attacks. The vine will keep attacking you until each of its vines hit one of the power boxes stationed near it which will kill it.





## Rationale and Outcome for Prototype 3

### Level Design

#### Macro Document

**Level Concept** - The full map has been split into three levels: The Meeting Entrance/Lab (1), the Sewer (2), and the Fungal Forest (3).

#### Level 1

Level 1 is the introduction location that introduces the player to many of the mechanics of the game. The overall design allows for the player to explore multiple paths around enemies, find ways to kill an enemy, and introduce the oxygen and throw mechanic. Multiple types of puzzles are introduced to the player as well, such as sneaking around enemies and the enemy button and the player button.

## Level 2

Level 2 is where we create larger puzzles for the player. The first room has no enemies so the player can solely focus on the puzzle of getting across the gap and opening the door. Then the player must travel into the sewer tunnels, open another puzzle that introduces the purple button, and find a way around a larger group of shamblers. While no new enemy is introduced, the player now sees the enemies in a larger group and must now explore the environment to get around the enemies. Additionally the environment is visibly affected by the plant as you travel, showing the extent of the plant's corruption, which narratively drives the player as well.

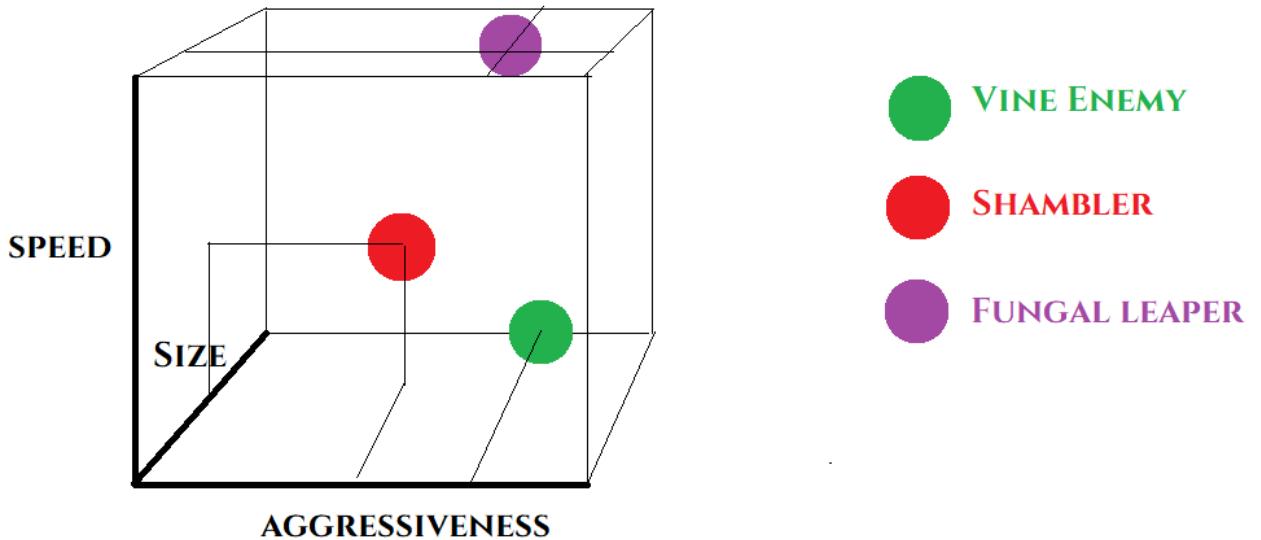
## Level 3

Level 3 is where we add together the previous steps of the game as well as introducing the Fungal Leaper and includes the enemy boss. The Fungal Forest is much bigger in scale and is more ominous as the player now sees the full extent of the plant. The player will come across multiple locked doors that are connected to separate rooms that the player must explore. The new enemy will provide new tension as they react to the player's flashlight, which will make the player navigate without it more often. Finally the boss fight will include several mechanics that the player learned from the other levels, so they should be familiar enough to understand how to defeat it.

**Enemy Archetypes** - The main three normal enemies are the Shamblers, the Vines and the Fungal Leaper.

- The shamblers are very slow and patrol points until they notice the player. After noticing the player they will slowly start chasing until they lose sight of them for an extended period of time. These enemies are introduced in the first room the player enters. They initially are turned away from the player and the player may think of them as an ally until they start chasing them and yelling.
- The Vines are stationary and swing at the player. While they cannot move, their attacks are very fast making them dangerous if you approach. Some passive vines are shown burrowing in and out of walls that are harmless to the player, but some of which have corpses on them, showing their dangerousness. The third room has both Shamblers and the vines. The Shamblers keep the player moving and may make them move into the range of the more dangerous vines while running away.
- The final normal enemy is the Fungal Leaper. This enemy is the swarmer of the group and is the most aggressive. The enemy will remain stationary and will sit in one spot until a flashlight is turned on within a certain radius. Once active, it will quickly swarm the player and leap at them. These enemies live in dark areas with

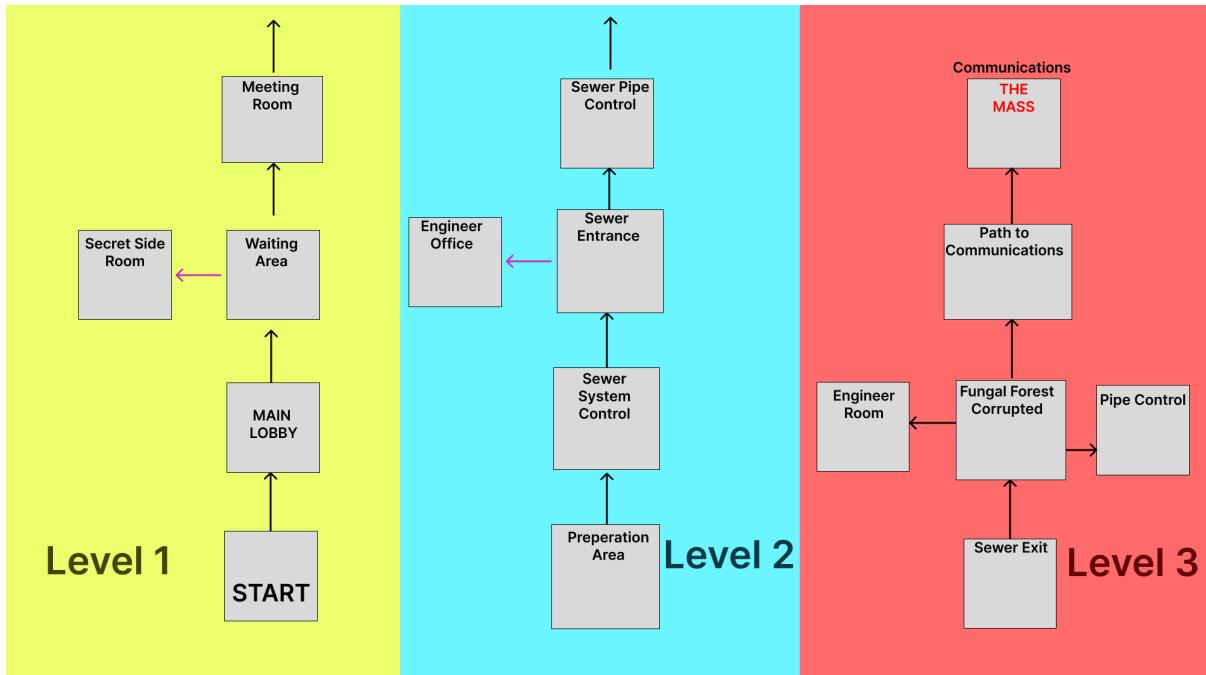
little light and give off faint light.



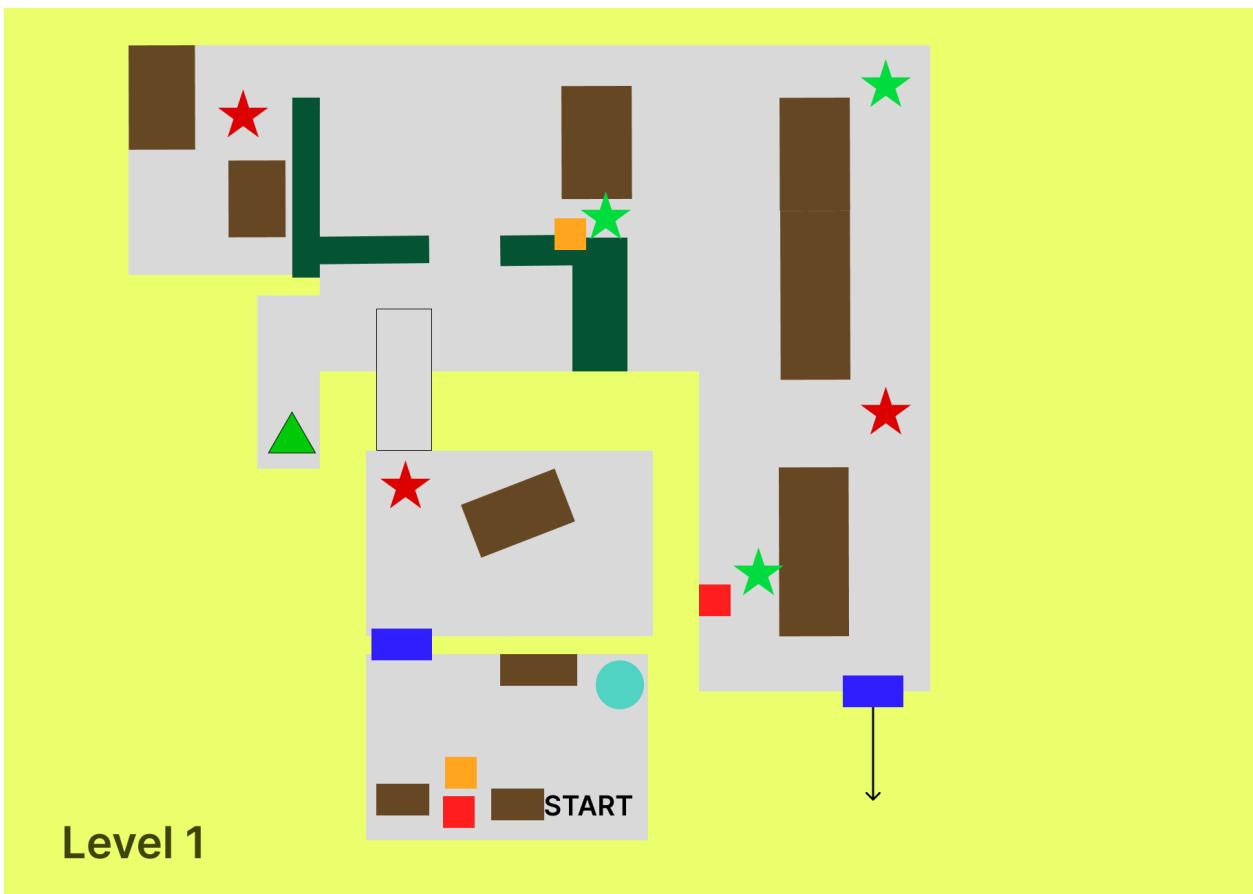
**Environmental Archetypes** - The rooms are scattered with O2 canisters which can restore the player's steadily reducing oxygen. Both the plants and weapons also produce oxygen for the player if they are near, so a player may try to find a safe hiding spot near enemies to regenerate if they cannot find O2 canisters. O2 is a resource which essentially acts as time. Going off the beaten path grants the player bonuses and items, such as safer O2 points, Audio Logs, and potential puzzles to either progress differently or kill enemies, but doing so burns oxygen which limits the player's actions. Attempting to rush through an area is very dangerous but would give the player the most oxygen to spare. For example In the second room there are some crates on a ledge which if pushed over the ledge lands on a very large vine and crushes it, making it safer to pass by that hallway later. There is also an audio log hidden in a side room that allows the player to learn more about the environment as you play

**Boss Room** - The final room in the game is where the boss plant is located. This large enemy is a Venus Fly Trap that will lunge towards the player and try to eat them. The boss has also spawned different enemies into the room that will try to catch you as you make your way around the room. The Player must trick the boss into striking the various powerboxes around the room. Once the Venus Fly Trap has struck 3 power boxes, it will die.

## Bubble Map:



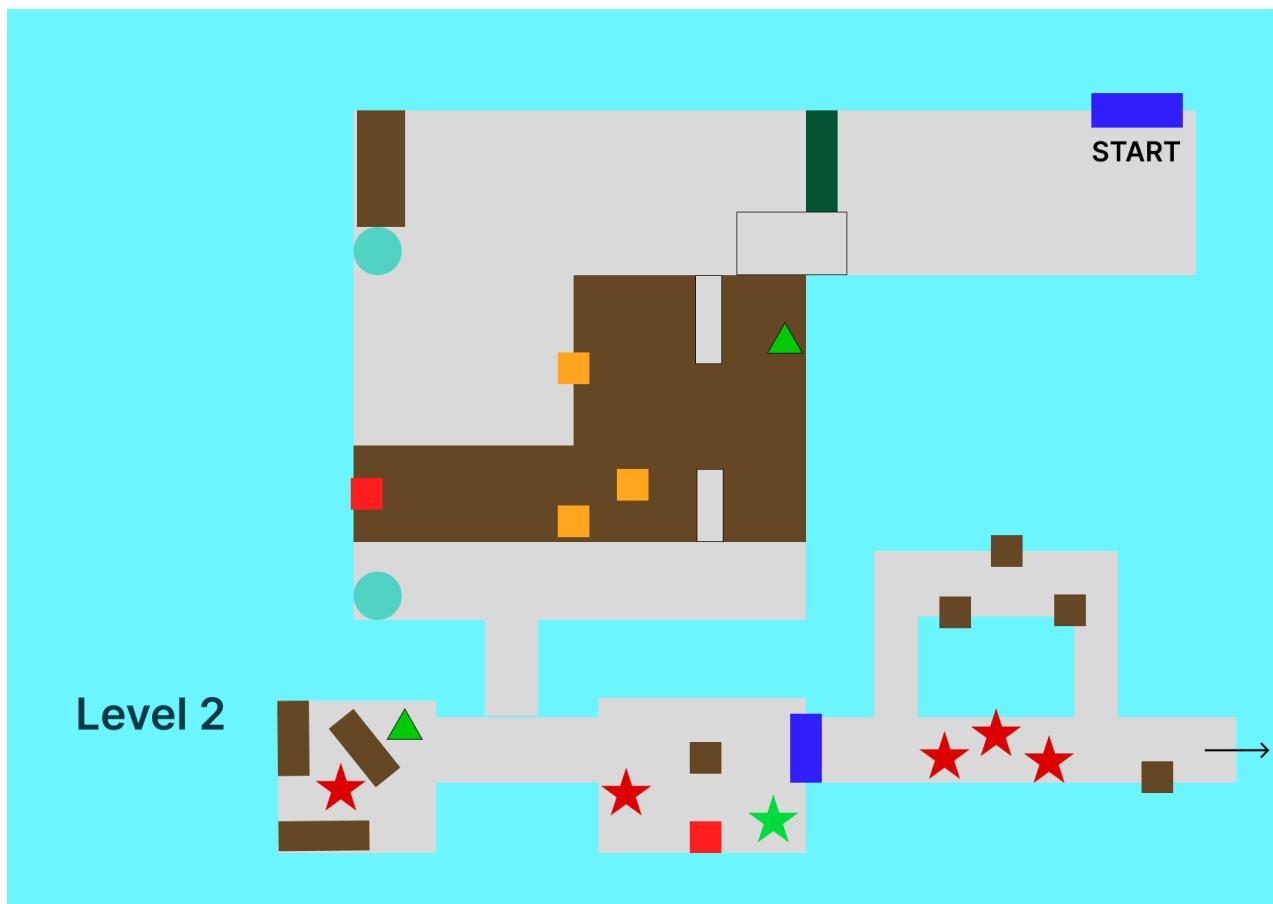
## Level 1



## LEGEND

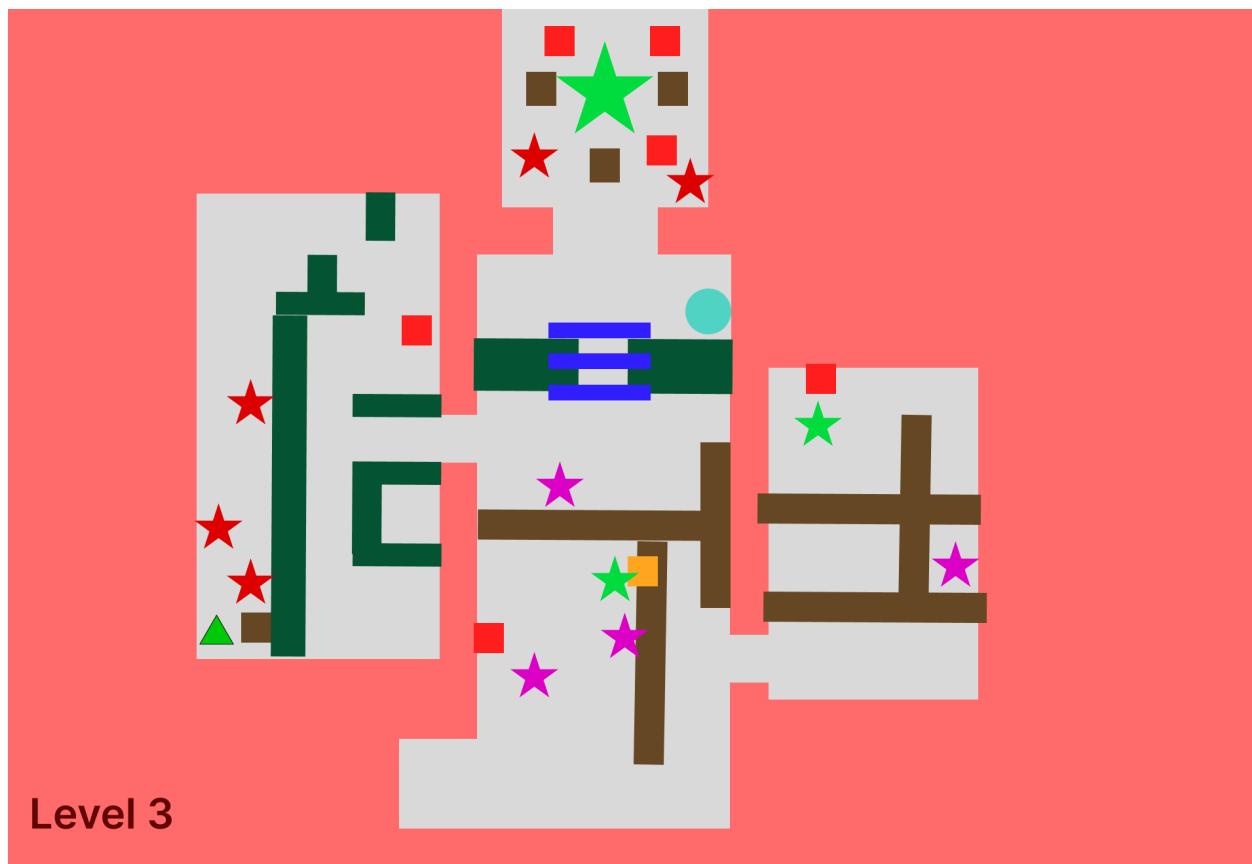
<span style="background-color: #c0c0c0; border: 1px solid black; width: 15px; height: 15px;"></span>	= Room	<span style="background-color: brown; border: 1px solid black; width: 15px; height: 15px;"></span>	= Obstacle	<span style="background-color: blue; border: 1px solid black; width: 15px; height: 15px;"></span>	= Door	<span style="color: green;">★</span>	= Vine Enemy
<span style="color: black;">→</span>	= Path to next level	<span style="background-color: darkgreen; border: 1px solid black; width: 15px; height: 15px;"></span>	= Wall			<span style="color: red;">★</span>	= Shambler
<span style="color: green;">▲</span>	= Bonus Audio Log	<span style="background-color: orange; border: 1px solid black; width: 15px; height: 15px;"></span>	= Moveable Crate			<span style="color: magenta;">★</span>	= Fungal leaper
<span style="background-color: teal; border: 1px solid black; width: 15px; height: 15px;"></span>	= O2/Savepoint	<span style="background-color: red; border: 1px solid black; width: 15px; height: 15px;"></span>	= Button				

## Level 2

**LEGEND**

■ = Room	■ = Obstacle	■ = Door	★ = Vine Enemy
→ = Path to next level			
▲ = Bonus Audio Log			
● = O2/Savepoint			
	■ = Wall	■ = Moveable Crate	★ = Shambler
		■ = Button	★ = Fungal leaper

Level 3

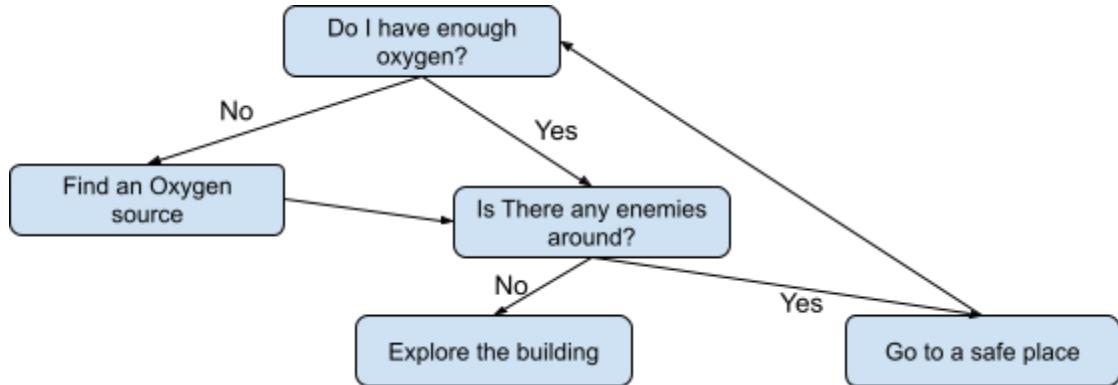


### LEGEND

■ = Room	■ = Obstacle	■ = Door	■ = Vine Enemy
→ = Path to next level	■ = Wall	■ = Shambler	■ = Fungal leaper
▲ = Bonus Audio Log	■ = Moveable Crate		
● = O2/Savepoint	■ = Button		

## Leading the Player mentally and physically

### Oxygen

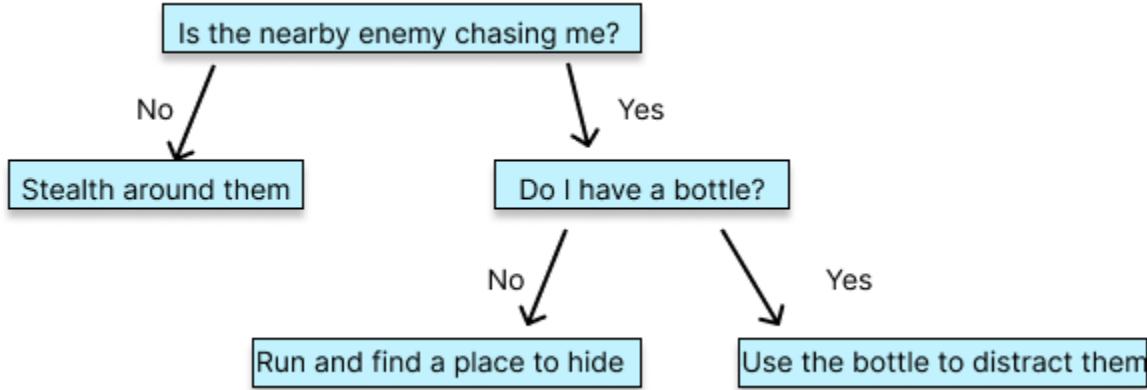


The final objective of the game is to get to the other end of the path while navigating enemies, finding pickups and maintaining their oxygen level. The game introduces these mechanics one-by-one, allowing the player to learn through experimenting and quickly respawning to try again.

At the start, the player encounters an oxygen station which replenishes their oxygen. This is also the first respawn point. This area is denoted by a glowing green orb effect inside which they can regain oxygen. They can then find these orbs scattered all over the environment when they might need to replenish their oxygen. The orbs serve as distinct visual cues for respawn points and oxygen centers.

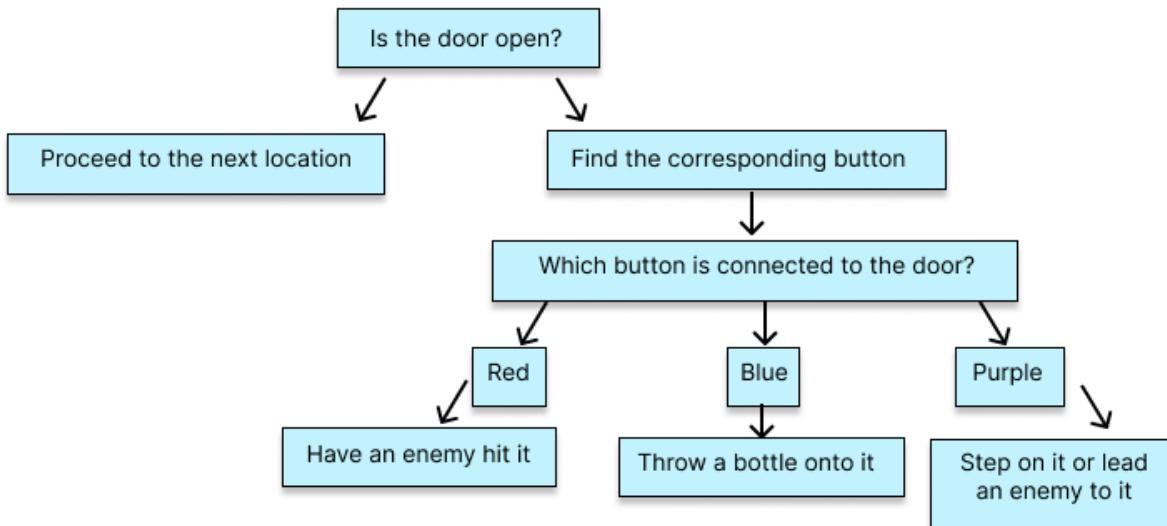
Similarly for the enemies, the player first sees a few vines at the start of the level with dead astronauts attached to them. This indicates that the vines are dangerous and should be avoided. The player will eventually encounter vines that attack them if they get too close. If the player dies, they spawn not too far from their last death and can try again.

## Enemies



Having enemies around will also help lead the player around the map or can force exploration as they try to find indirect routes to locations or hide from chasing enemies. Upon encountering an enemy, the player has a choice of finding a separate route that leads around the enemy, or using the throwable bottle item to distract it while the player gets away. This can also force the player to look around the map in order to stock up on bottles to use, which encourages exploration.

## Doors



Another way to lead the player is having them discover a locked door that has a “lock light” next to it. If the lock is green, then the door is open and will allow you to proceed

to the next location. However if the light is red, the player will need to find the button that is connected to the door, which is usually connected using a line.

If the Button color is Red, then you will need either a shambler to walk into it or will need a vine to strike the button.

If the Button color is Blue, you will need to land a bottle onto the button to hold it down.

If the Button color is Purple, then either the player can stand on it or the door to open, or an enemy can stand on it.

Once the button is pressed down, the door should be open and allow the player to travel through it. Finding and pressing the buttons are one of the main sources of puzzles in the game as it allows the player to explore the map more, as well as try to think of ways to get the door open based on the resources they have available.

## **Path layout type: Linear**

The path layout for the map is primarily linear. The player doesn't stray too far from the main path, however there are multiple ways to go about traveling that linear path. In the first level, there are multiple side areas the player may travel to that offer either collectables or items, however they do not offer routes past the main path. However, the main path can be taken in different ways, such as around one side of an obstacle where an enemy is, or around the other side where there are puzzles the player needs to solve. Once you reach Level 2, the path becomes even more linear as the main puzzle can only really be solved one way. There is a side area the player can travel to that offers more narrative and items but also leads back to the main path. Then there is one section that would appear to have multiple paths but is likely to force the player down a path as it appears to be passable but it is blocked by a large number of enemies. Lastly there is Level 3 where the path becomes more spread out (spider web) as the player is able to activate the door locks in any order they want and may travel between the different rooms at their leisure. However these multiple rooms will only lead back to the main path so it will remain reasonably linear.

## **Visual Cues**

There are various visual cues in the game to help guide the player around the map. We use lights, puzzles, and colors to help guide the player around the map or towards areas of importance. For example, there are lights visible that can light the path towards the next location. To show the player towards a door or another area of importance, there is the door lock puzzle that gives off light which also directs the player towards the path they need to go. These

puzzles also provide light “wire” lines that show the way to the corresponding button. Outside of these, we have Oxygen sections that use a green light effect to draw attention to it. Then after seeing the green light effect that time, they will know that anything using that effect will provide oxygen. Lastly we draw players towards certain items of importance based on the bright orange color that stands out from the surroundings.

### Lights Visual

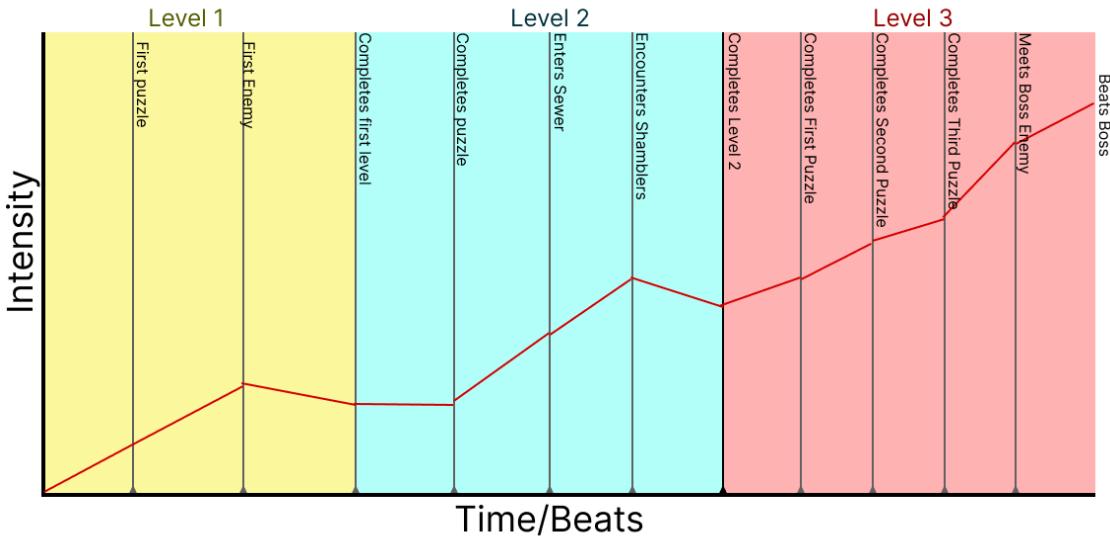


### Oxygen Visual



**Item Visual****Door Visual**

## Major Beats and Pacing Rhythm



- ❖ When the player first starts they are introduced to the tutorial and intro cutscene that describes the situation, from there they are introduced to the beginning room that has no enemies but a single puzzle for the player to solve as they explore the room. As the area is relatively harmless and is meant to introduce the player to the basic mechanics, the intensity would be relatively low.
- ❖ The player then exits the first room and will meet the Shambler, their first enemy. As they deal with learning the new mechanics of this enemy, the atmosphere and enemy noises ramp up the tension as the player now has to think about how to get past the enemy.
- ❖ Once leaving the first enemy, they get some space to explore. They do come across some enemies and a puzzle at the end but as the space is large enough for them to take breaks and explore, the tension goes down slightly.
- ❖ As the player beats the puzzle and gets through the door to Level 2 and finds an oxygen station. Then the player will see the large room that leads to the sewer, along with a puzzle to get through the room. As there is no active threat in this room outside of oxygen, the intensity doesn't increase but stays level as the player goes about trying to solve the puzzle.
- ❖ Beating the puzzle and traveling into the sewer will ramp up tension more as the area is turned to much tighter and darker corridors. The player will come across another room with a Shambler that will chase you and you must use it to solve the puzzle to continue. The shambler will be a constant threat in that room so the tension will continue to build

until the door is open.

- ❖ After the puzzle the player will see a tunnel with more Shamblers and must find a way around them.
- ❖ Entering into Level 3, the player sees the suddenly large expansive Fungal Forest with small glowing bulbs on the ground. As the player enters and sees this the intensity would increase.
- ❖ The player will start to solve puzzles around the next few rooms and will continue to build intensity as they keep getting chased by enemies, also the expectation of getting through the locked door will also increase intensity.
- ❖ Finally meeting the boss will bring the intensity to a climax as the player now faces the boss enemy and its minions.

## Reward Schedule

For our Alpha 1 code we wanted to add in versions of Prestige, Progress and Collection for our players.

The Prestige comes in the form of defeating the boss and getting the end scene that congratulates the player on defeating the boss and beating the Game. Another form of Prestige comes from killing an enemy that might have been difficult to travel around. You can do this by exploring the area, finding some crates that are overtop of the vine and knocking them onto the vine and killing it.

Regarding Progress, we designed save points for the player that allow them to respawn back whenever they die. This means that the player will feel a sense of progress as they travel through the area and get reset to a point nearby. This makes sure that the player is not losing too much time and progress if they die, while also rewarding them for getting further in the game. Progress will also be rewarded for completing puzzles throughout the game that allow the player to proceed into the next location.

Lastly, collection is the type of reward system that we thought would be a good fit for our game. The forms of rewards for collection are: Oxygen stations, Oxygen from enemies, and an Audio log. The Oxygen stations are stationary areas that allow the player to rest and refill on oxygen in a safe location. However there is the alternative where the player can risk being near an enemy and still gain oxygen back if they are too low. The Audio log is a collectable from one of the scientists that was killed and gives a little more information as to what events lead up to the moment the player is in now.

Overall, we included 8 forms of reward for our Beta code: The end screen, killing a vine enemy, killing the boss, save points, Oxygen stations, Oxygen bubbles around enemies, completing puzzles, and the audio logs.

The frequency of these rewards depends on the type of reward. As killing an enemy is meant as more of a special reward as opposed to a commonality in a horror game. The frequency of that is only twice at the moment, one midway through the game and the boss fight. The Save points come at specific beats in the game where the player is about to enter a large area with enemies or at the start of a long walk where the player may run out of oxygen. These also appear at the beginning of each new level to past doors to show that the player has made progress if they die. This means that they come frequently, as the enemies will also produce oxygen for the player, but some are easier to get to than others and some are hidden and require exploration. The audio log is meant to be a collectible and a piece of lore that helps provide explanation to the player as to what they are dealing with. Lastly the puzzles will appear when leading from one major area to another and will appear at a higher frequency and take the shape of many different types of puzzles.

## Gameplay Teaching Components

### Teachings Used

For our game we decided to follow two types of teaching styles: Teaching by example and Teaching by experience.

Teaching by example is used to convey different mechanics and enemies in the level. To introduce an enemy and its lethality, we have an asset earlier on showing an NPC that is pierced and killed by a large vine. Shortly after that we introduce the vine enemy as it tries to kill the player if they get too close. This means the player has already seen that the plants are dangerous and that enemies that are plant based should be avoided if possible. However, we also use teaching by example to convey to the player that the enemies can also provide oxygen to the player through the use of an oxygen station that the player finds in the first room.

We use teaching by experience for pickups, oxygen stations, as well as for some enemies. The pickups are noticeable and draw the player's attention towards them, then notice the benefits (be it through oxygen or by audio logs) when they interact with them. The oxygen stations act as an easy way to regain oxygen when nearby, so the player will notice their meter going up when near the asset. Similarly, they will learn that they are respawn zones when they die and get sent back to that specific oxygen station. Lastly is the enemies and the experience they offer. It is not directly conveyed that the Shambler is able to kill with one hit until the player is caught by one. However, the

player quickly learns that these enemies can be very dangerous if they start chasing you. We believed this was effective because the player's quick respawn rate doesn't cause too much of a punishment so they are able to quickly get back into gameplay. Lastly, from all the experience with other enemies in the game, we hint towards the player being able to use the vines to attack the electrical boxes in the boss room and can damage the boss using this method.

Lastly, we hint towards the player being able to solve puzzles by noticeably connecting buttons to the door lock using a glowing line. This means that the player should have enough foresight to figure out that the buttons open the doors, therefore teaching themselves.

### Feedback of Tutorials

The feedback we got back regarding our tutorials was mixed. Some people seemed to realize that the enemies would kill upon touching you or that the plants were enemies. However, others mentioned that the kill respawn was far too quick and jerky, making it difficult for them to notice that they were killed and respawned. There were also sections where the players had difficulty realizing what the vine enemy was doing because it killed immediately, which made the boss fight more confusing as its mechanic is based off of the vine enemy's attack pattern. However, there were also comments that said that the Shambler enemy was very straightforward and that people understood what it was and what it would do almost immediately, and also found the slow chasing intimidating, and they really enjoyed learning about gaining more oxygen just by being near an enemy and learning how to be close to an enemy without dying. Some players didn't notice O2 immediately however.

### Feedback Model

Our feedback model for the game is a mix between non-diegetic and meta. The non-diegetic feedback that the player gets is when they pick up items such as bottles, it appears on the HUD screen outside of the game world and game story. It shows as a number on the player's screen and not within the game world itself. For the meta form of feedback, our player's oxygen meter is a partial mix. It shows the player a direct number of how much oxygen they have left (which would be non-diegetic), however it also shows the player's oxygen meter depleting as their actual oxygen is running out. It would be represented as meta because the meter on the HUD is the oxygen tank they are wearing, and the indicator shows the oxygen being used up while the player moves.

## Control Scheme Table

### MOVEMENT

Forwards	'W'
Backwards	'S'
Left	'A'
Right	'D'
Crouch	'Left Shift'

### ACTIONS

Look	'Mouse'
Throw	'Hold Left Click'
Interact	'E'
Toggle Flashlight	'F'
Pause	'Esc'

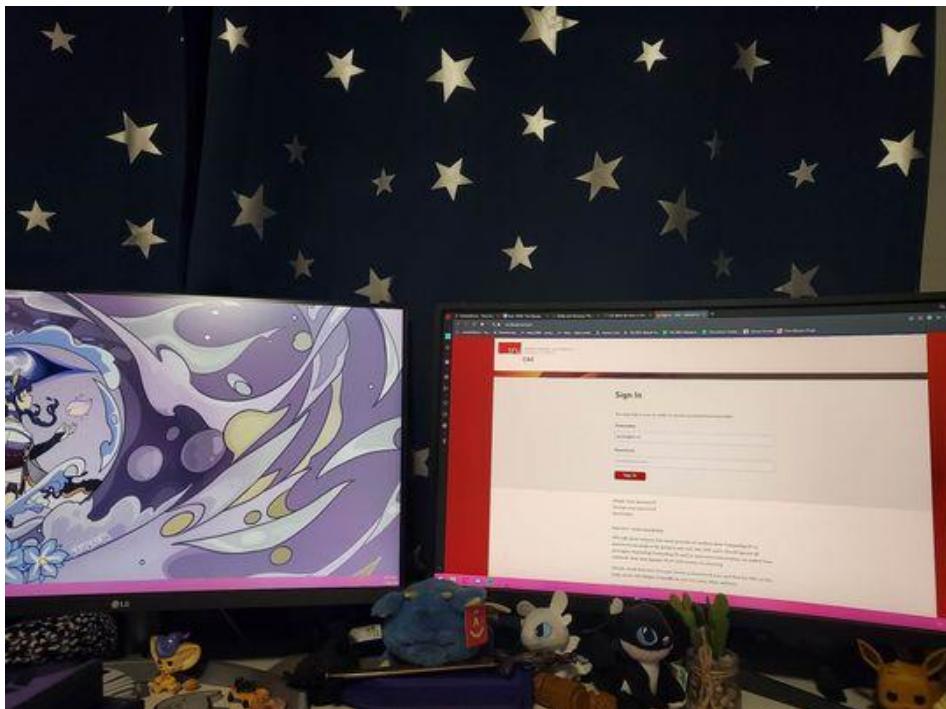
## Playtesting Report Doc

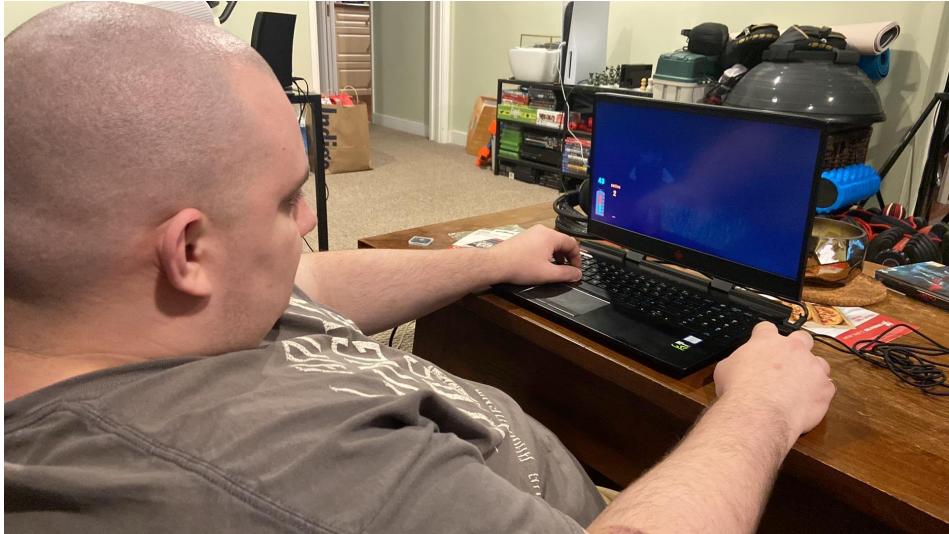
<https://forms.gle/hxF5LfKUpnrTMMMeU7>

Name of Team: Moonbase Studios

Names of Team Members: Bret Bauslaugh, Jinous Safaei, Rohan Samuel, Marcus Szabo

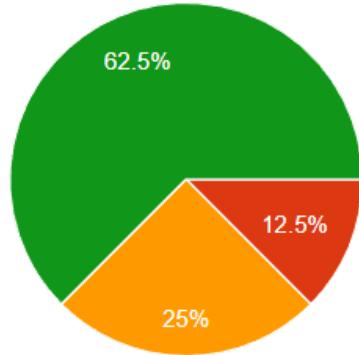
1. *Setup: number of sessions and number of people for each session. Lab location and setup. A picture of the prototype setup in the room.*  
 For this playtest, we had 8 sessions of playtesting. The location was online as we would send our build to people online and have them play. We did have a couple of in-person sessions as well where someone would come in and play the game while we were there or present, this was typically at a person's house.





## 2. Users: who are they ? Age? Gamer types? Player type?

The majority of users are from ages 19-25 with a couple people being above the age of 50. The players rated themselves to be roughly average to experienced gamers with typically over 10 hours of gaming per week. This meant that the players were able to pick up on certain mechanics very quickly and had knowledge about certain mechanics from other games that related to this, such as using enemies to hit buttons. The players were usually most interested in exploration, action and adventure. The players enjoyed exploring the maps and looking around to find out more about the world as well as finding secrets. Most often they would rate themselves as Explorers and some Killers, meaning that they enjoyed the challenge of fighting enemies but would mainly explore the game.

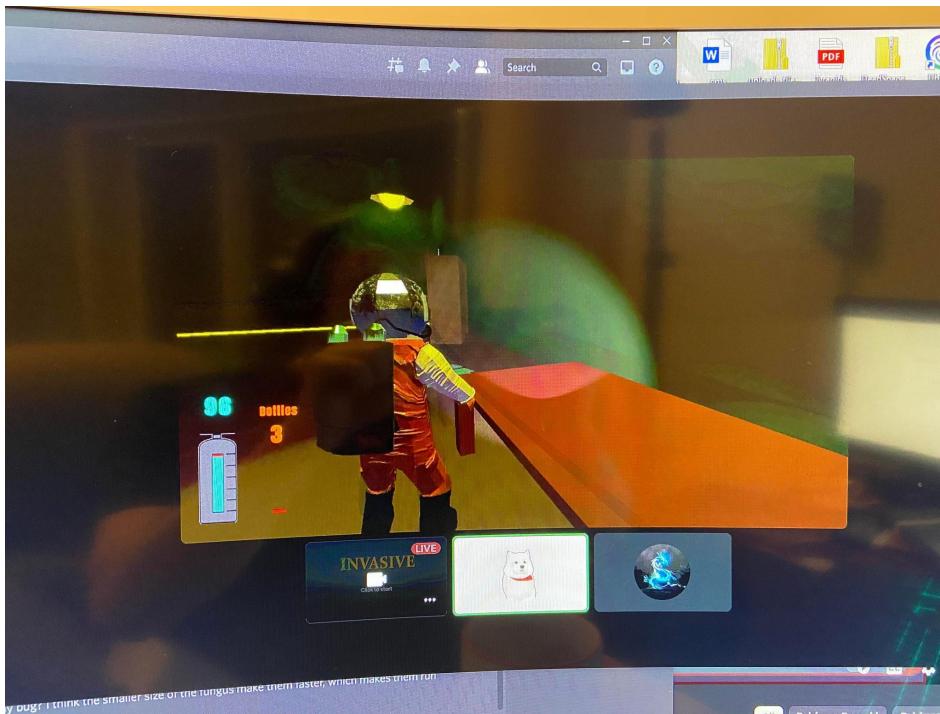


- Achiever - tries to accomplish all/difficult tasks or achievements
- Killer - likes fighting games and wants to watch the world burn
- Socializers - likes cooperative games and hanging out with others
- Explorers - wants to see everything and explore the world

3. *Procedure: describe what you did, what did you tell the users? How did you introduce the game, if you did?*

We introduced the game as our project. However we did not tell the player about the mechanics, the puzzles, enemies, or story in any way (save one player who skipped the tutorials by accident and we gave him the control scheme). The players for the most part were able to solve the puzzles and discover the mechanics on their own either through trial and error or through general gaming knowledge. People were also able to figure out the story of the game relatively easily as well.

4. *Pictures to show each of the playtesting sessions with play testers presenting*





Sky Shaymin Today at 9:32 PM  
<https://youtu.be/r6Lqp6uyXSM> <https://youtu.be/GpTKem7bwew>

YouTube  
Sky Shaymin  
Bret Game pt 1

A thumbnail for a YouTube video titled 'Bret Game pt 1'. It shows a character in a field with a progress bar on the left showing '16' above 'BOTTLES' and a red progress bar below it with the number '3'.

YouTube  
Sky Shaymin  
Bret Game pt 2

A thumbnail for a YouTube video titled 'Bret Game pt 2'. It shows a character in a room with a progress bar on the left showing '87' above 'BOTTLES' and a red progress bar below it with the number '1'. A yellow diagonal line is drawn across the screen.

5. *Observation notes: what did they say? Try to be objective and write everything with no bias.*

For the group of game testers, the interest was spread out leaning more towards people finding the game interesting. We did have some people who did not enjoy the game as it was not for them or they had control issues, which we plan on fixing up. They also stated that the mechanics were reasonably easy to figure out as they played through the “tutorial through experience” as we had planned. The enemies seemed fair but the zombie enemy was agreed to be just a little too fast while the Boss enemy’s attack range was too short and needed to be expanded. The puzzles were engaging for the most part but there were sections that players found frustrating and difficult, stating that the box puzzles could be simpler and anything to do with the aiming could be tuned.

Most of the players had difficulty with the box puzzle where you need to push the boxes to make a bridge, this can be rectified by increasing the length of the bridge slightly in order for the jump to be easier.

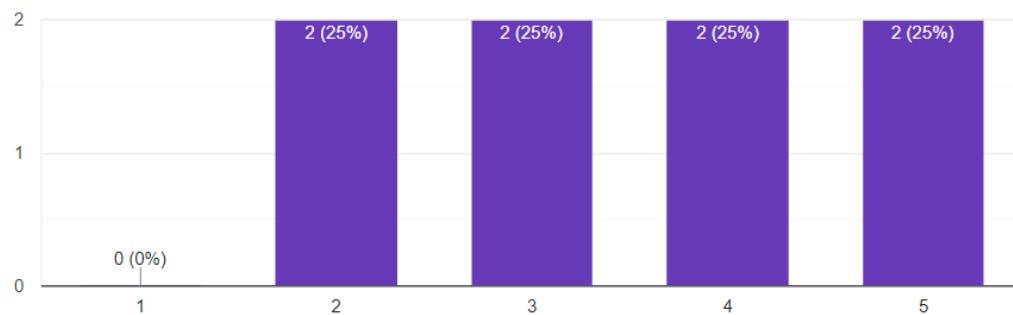
Additionally, the players seemed to enjoy the zombie puzzles where you had to maneuver the enemies onto certain plates and get them to stay there in order for a door to open.

People mentioned that the puzzles were reasonably intuitive and were easy for people to understand as well.

How interesting was the game to you?

 Copy

8 responses



Which area seemed most difficult to you?

8 responses

The area with the purple button where you have to trap an astronaut in the cage.

The area with the broken bridge, I understood that the switch had to be pressed by throwing a vial (because of the broken vials below) but I couldn't figure out how to cross, ending my game short

Honestly the broken bridge, only reason I say this is because it took me 2minutes to realize I need to yeet a bottle at the blue pad and line a big box up to cross over.

Last chamber of 3 buttons

boxes

Moving the boxes to get through the 3rd(?) main room ended up being a real issue for me to clear, they're a bit too light weight feeling and have some unexpected behaviour when standing on them or stacking boxes on top of each other

Lighting up all the lights at the end since it was hard to know where to go and where you've been. The boxes section was extremely frustrating which is a different kind of difficulty.

**6. *Reflection: what did you learn through this session? What conclusions can you make?***

Everyone mentioned that the camera movement gave them the most trouble as it caused nausea for one person and was far too sensitive in every case. If we fix this then it should be able to also solve many other issues that people were facing such as the movement and the aiming issues that people faced. Outside of that, people wanted to have a secondary movement option that allowed them to move more quickly, so if we increase the speed of the player, then it should be able to help the issue as well. The last big issue people had was the aggro of certain enemies, these were often involving enemies either charging you while you were sneaking or an enemy's attack range not being long enough (such as the boss fight). These are relatively easy fixes as we just need to edit the value the player gives off while sneaking as well as editing the boss enemy's perception range.

There are plenty of bugs that players found for us to fix, and while there was frustration with certain parts of the game. A majority of the players said they ended up enjoying themselves and had fun. People said they were impressed with what we had been able to create in the few months of development.

## Final Gold Report Section

### Game Concept and Narrative

Our game, "Invasive", is a puzzle horror game that is played from an "over-the-shoulder" 3rd-person perspective. The player must traverse through a series of levels while avoiding dangerous enemies, solving puzzles, and defeat whatever creature has damaged the facility. The player starts with little knowledge of the events in the story and must explore to uncover what happened and must explore the base to scavenge items that they can use to help them avoid detection.

The player is an old ex-space marine, Jesse, who happens to be traveling by a facility when they suddenly receive a distress signal from the nearby planet. The distress signal seemed to be sent by Jesse's wife who seemed to be working at that facility and reads "To whoever can hear this, this is Dr. Alice Bentleye. We've lost control, the experiment, it all went wrong. This moon is a lost cause. If you can hear this message, please... Kill us. Otherwise it will only get worse". Upon receiving this, Jesse immediately travels to the planet to try to discover what happened and to see if they can recover their wife and any survivors. As they land near the base, their ship is suddenly attacked by a massive vine-like creature and damaged, forcing Jesse to flee into the base. As Jesse explores the area, they soon discover that the base has been overrun by similar plant based creatures and has even infected some of the other astronauts from the station, changing them into horrifying monsters. Jesse's goal remains the same, survive the horrifying creatures, infiltrate the facility and discover what happened to their wife.

### How to Play

#### Control Scheme

##### MOVEMENT

Forwards	'W'
Backwards	'S'
Left	'A'
Right	'D'
Crouch	'Left Shift'

##### ACTIONS

Look	'Mouse'
Throw	'Hold Left Click'

Interact/Close Note	'E'
Toggle Flashlight	'F'
Pause	'Esc'

## Objective

The player's objective is to travel through the facility, avoid detection from enemies, discover what events lead to this outbreak, and rescue the survivors.

As the levels are separated by door puzzles, the winning conditions for levels 1 and 2 are relatively the same. Level 1's winning condition is to solve the first enemy button puzzle and travel through the door to the room leading to the Sewers. Level 2's winning condition is similar in that you need to solve the Sewer puzzle by having the shambler enemy stand on the button and open the door for you to travel through. Level 3's winning condition is beating the Venus Fly Trap Boss that is in the last room behind the 3 door lock. In order to achieve these win conditions, the player needs to be able to apply skills and mechanics they learned from the previous levels and apply them effectively in new ways for each puzzle. This will allow the player to use this new application of skills in later sections so that they will be able to increase in skill level and complete future win conditions more easily.

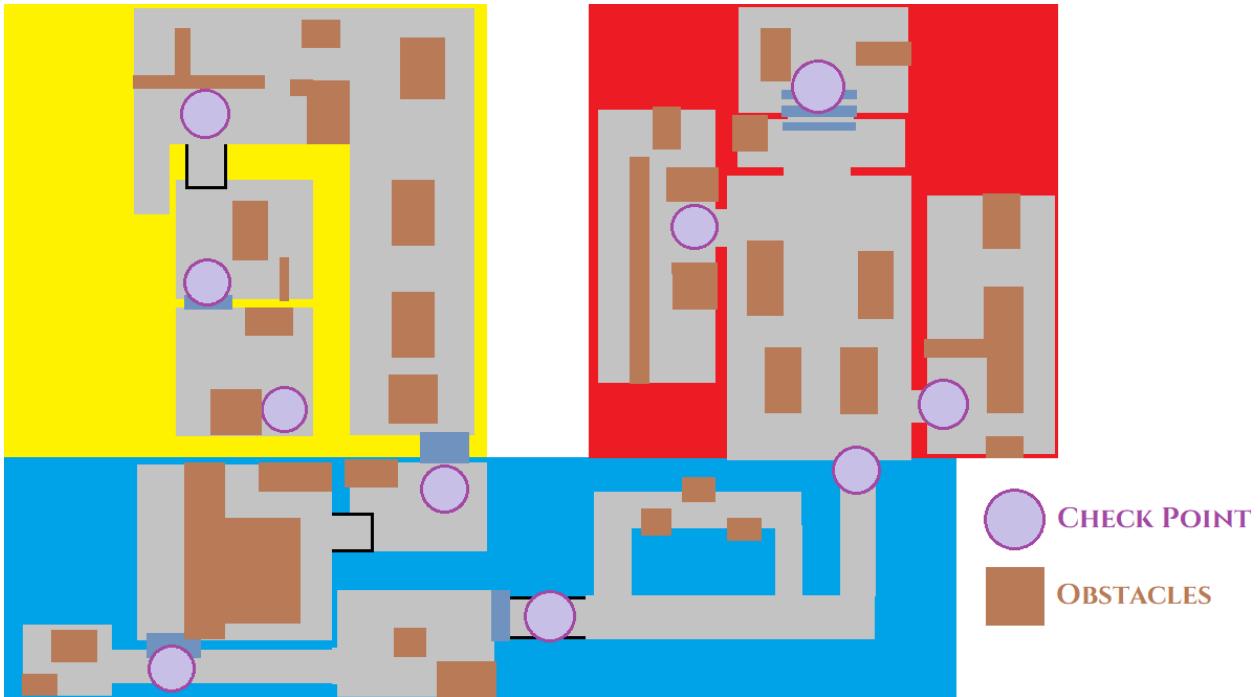
The losing conditions remain constant throughout all the levels. Having the player die as a result of an enemy killing you or you running out of oxygen will lead to the player having to restart from the latest checkpoint. The losing condition is designed to be more forgiving than most games to reduce the frustration of having to travel through areas multiple times and redoing puzzles.

## Variations of Gameplay

For our game there are a few different forms of gameplay in "Invasive". Our main form of gameplay is puzzle based, where the player must solve a puzzle by activating a button through various means in order to open doors and progress. These buttons can only be activated one way for each button type so while the player will need to strategize and play differently for each button, the overall goal and basic actions are the same. However, there are different ways the player can go about other sections of the game, such as enemy avoidance, survivability and exploration. For enemy avoidance, the player is able to try to run past them and dodge the enemies as they start chasing you, the player is able to sneak by them or use a path that can divert around them, or the player can occasionally find ways to kill the enemy. Additionally, the player could use throwable items from around the map that allow them to distract enemies, allowing the player to pass by. All of these achieve the same goal of the player bypassing enemies, but are all done through different means so the player has some variety in the way they can play. Survivability is another form as it requires the player to search the area and discover "safe zones" where the player can re-acquire oxygen they have lost. Another way they can fill their oxygen bar is by staying near certain enemies that are producing oxygen. These are two different methods of gaining oxygen and surviving further into the game. Lastly,

exploration allows the player to discover more about the game such as finding lore notes around the map that give the player more information about the world and furthering the narrative.

### Checkpoints



Our Checkpoint system works by saving the player's progress every time the player progresses to certain points in the game. These checkpoints were determined based on player feedback as well as depicting important gameplay milestones such as completing a puzzle or moving to the next level. Every time the character dies, they will quickly respawn back at the last checkpoint they interacted with. Upon death, the world's items and enemies will reset, but the puzzles will remain completed so that the player doesn't lose progress each time they die and will not have to redo certain tasks. We did this as a way to reduce the frustration and slow pace of walking all the way back to certain areas just to complete the same task over and over again and keep the gameplay interesting.

### Features from Wish List

Our main features in the game are our stealth/awareness mechanic, an Oxygen timer, and puzzle solving. The stealth mechanic is a decently common mechanic where the player is able to hide, sneak around, or avoid enemies by using various tactics. The mechanic we are using is using misdirection with a throwable as well as a crouching mechanic that is used to avoid an enemy's sight and hearing abilities. Some games from the wish list that share a mechanic similar to this are games like Inside and Fallout 4. Our puzzle solving mechanics involve the user finding buttons and pushing them, using enemies to destroy them or destroy themselves, or using throwables in order to open doors. These types of puzzles and mechanics can be compared to similar mechanics in games like Limbo where you need to use the environment or enemies to solve puzzles, or games like Breath of the Wild where you need to

use buttons and throwables in order to open doorways to progress. The last of our main features in the game is our oxygen timer where the player needs to make sure they are keeping their oxygen meter as full as they can using an oxygen station or other forms of resources as they explore because the bar reaching zero will lead to the character's death. This feature can be compared to mechanics like Sonic the Hedgehog's water levels where they can only explore and complete the level by maintaining their oxygen.

We have also included some secondary features in the game such as using various paths in an area to get through level or explore as well as finding collectable notes in the game to learn more about the world and the story. We also have a quick-respawn mechanic using checkpoints so that the player is able to play through the game quickly without having their progression or gameplay undone. A game from the wish list that uses various paths to complete levels is Deus Ex Human Revolutions where the player can travel through multiple paths to get through an area. We also have notes in the game that offer more information about the world, similar to games like Until Dawn and The Wolf Among Us. Lastly we also use a quick-respawn, similar to games such as Limbo and Inside, so that the player doesn't need to travel through the same areas over again if they die.

## Reflection

The group had a long brainstorming process of the game, but not in the way we were really expecting. We were able to generate good ideas and concepts for the game, however we overextended ourselves and what we thought we could accomplish in scope. We had to shave a lot of content off the game so that we had time to make the game's quality better as opposed to just mass quantity. We also made many changes to the way our puzzles would work, however the overall concept of our stealth and exploration features remained relatively the same and were able to be implemented. As our main focus was to create an unsettling atmosphere with multiple paths and areas to explore, we feel that we were successful in creating components that allow for exploration and making the enemies and the environment creepy. There are several areas that we wish we had more time to fine tune or clean up as well as wanting to add the areas that we had planned such as more puzzles or side areas, but we are proud of what we were able to put out in the time we had regardless.

There are many skills that we were able to improve upon such as our ability to work with creating objects and assets using Maya and creating code using Unity. As many of us have had experience in working on 2D games, expanding ourselves to 3D was a challenge for us. However, this challenge allowed us to expand our skill set and become more familiar with certain unique aspects such as 3D movement, camera and lighting features that were all important for our game. Working in 3D also made the work of 3D modeling and animation that much more important. We worked with new mechanics that are a cornerstone for many survival or horror games such as the finding of notes and applying it to the UI layer of gameplay, as well as creating an enemy's hearing and sight awareness. Being familiar with these features is very useful as we will be able to make these kinds of features more fine tuned in future projects. We also gained experience with creating puzzles and working on level designing with 3D movement in mind. As working in 3D would require the player to move around on multiple levels, we needed to take into account the different ways players could explore the world and design side areas with that in mind. Creating enemies that had enough variety was also important for us as

we wanted the player to have to think strategically when dealing with multiple enemies that require different tactics to avoid.

Our biggest challenge was most likely making sure that all of our work would be able to build off of each other. We ran into many issues where our individual tasks would often conflict with edited files and we had to refine how we coordinated our work together so that we were able to combine our projects together for our builds.

## References

### Throwing Mechanic

<https://www.youtube.com/watch?v=F20Sr5FIUIE>

### Sound Effects

Zombie noise: <https://freesound.org/people/qubodup/sounds/442816/>

Player's Footsteps: <https://freesound.org/people/swuing/sounds/38876/>

Oxygen regeneration: <https://freesound.org/people/LG/sounds/25003/>

Door opening: <https://freesound.org/people/Robinhood76/sounds/330724/>

Losing Oxygen from a fungal leaper (small mushroom like enemies):

[https://l.messenger.com/l.php?u=https%3A%2F%2Ffreesound.org%2Fpeople%2FVeridiansunrise%2Fsounds%2F321118%2F&h=AT1K56hqk4cYVRMoqj\\_n6ozbk7iayxJqp57OjwsTshH4PAO7M2z9230v3nG2EWAS7NJX6akrQ28uHm4Qo3tj6VyeXhcnu2G6yGO2emHb7xiwcbt0Eeyi92N07DthLsA3Dg5yxw](https://l.messenger.com/l.php?u=https%3A%2F%2Ffreesound.org%2Fpeople%2FVeridiansunrise%2Fsounds%2F321118%2F&h=AT1K56hqk4cYVRMoqj_n6ozbk7iayxJqp57OjwsTshH4PAO7M2z9230v3nG2EWAS7NJX6akrQ28uHm4Qo3tj6VyeXhcnu2G6yGO2emHb7xiwcbt0Eeyi92N07DthLsA3Dg5yxw)

Picking up Audio Log: <https://freesound.org/people/JarredGibb/sounds/219476/>

Picking up a Bottle: <https://freesound.org/people/Craxic/sounds/204693/>

Fungal Leaper (little mushroom enemy) noises:

<https://freesound.org/people/150128/sounds/326648/>

Running low on Oxygen: <https://freesound.org/people/samule44/sounds/96023/>

Electrobox noises (in the boss room):

<https://freesound.org/people/NachtmahrTV/sounds/556717/>

Sound effect when an Electrobox is destroyed:

[https://freesound.org/people/deleted\\_user\\_7146007/sounds/383654/](https://freesound.org/people/deleted_user_7146007/sounds/383654/)

Venus Fly Trap death sound: <https://freesound.org/people/MickBoere/sounds/276577/>

Venus Fly Trap Damaged sound: <https://freesound.org/people/Debsound/sounds/377887/>

Ambient sound: <https://freesound.org/people/onderwish/sounds/457515/>

Music for trailer:

<https://pixabay.com/music/horror-scene-horror-background-music-ig-version-60s-9468/>

## Link to Videos

Trailer: <https://www.youtube.com/watch?v=jTt13RJBWTk>

Walkthrough: <https://www.youtube.com/watch?v=YZrPg6T44cU>