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BACHELOR OF ARTS / SCIENCE

Game Programming

## « Game Design Document: Billy The Zombie »
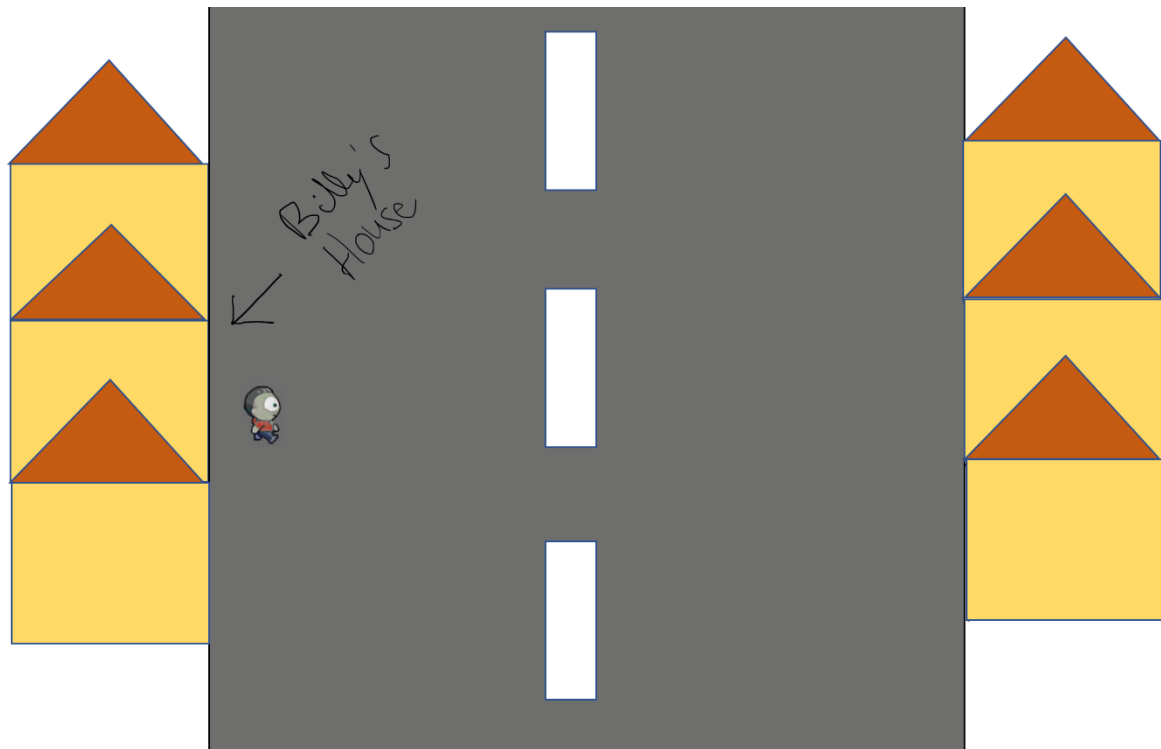
# Contents

## Elevator Pitch

One Zombie, Five limbs and Hungry hordes!

Take the control of "Billy the Zombie" in a postapocalyptic city and throw your limbs on mad comrades in a 2D twin stick survival rogue-like shooter!

## Gameplay Overview

To start, the player will appear out of a house and arrive in the middle of a street



After a delay he will be confronting one and unique zombie. That first enemy is intended to make the player discover the character and get used to the camera and movements and secondly oblige the player to get used to aiming and shooting without him being overwhelmed and thus discovering the fact that he must shoot but can only do it twice (once per arm) before having to pick up his arms again.
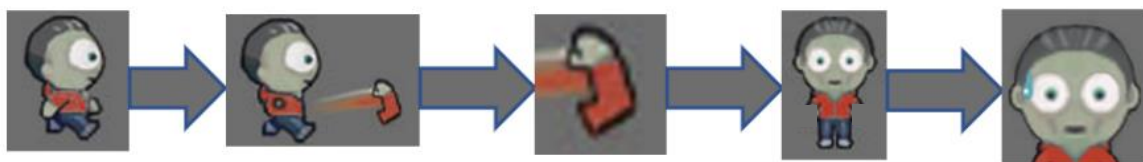


After that first wave composed of one enemy, he will have to fight 5 basic enemies and will be forced to move around and get hints about the world's evolution (numbers on locked

gates). After that wave, the gates (supposed to be seen during the second wave) will open.
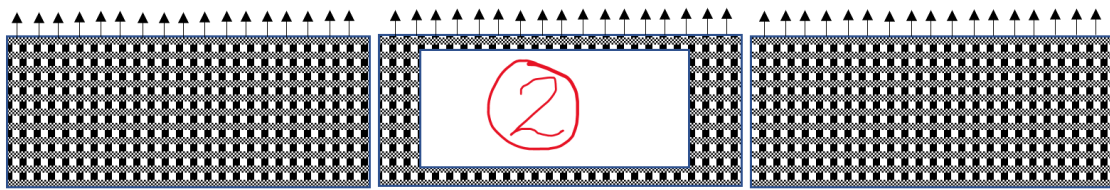


In terms of progression, we aim to rapidly introduce the upgrading system after a little moment of struggling. Since that system requires the player to die, we are going to make it impossible for the player to survive after a certain point.

Once that point is reached and the player dies, he will "fall asleep" and wake up on a table where he will be able to spend his "MutagenPoints", acquired by defeating enemies, on characteristics or abilities giving him a better opportunity to survive the wave he lost against just before.



After saving his modifications, the player will have the choice to go back to the main screen (through a door) or leave the cellar in which he is (going up strairs) to start over again but in a better condition to confront the waves of enemies.

After that the player will be free to die and retry until the entire map is discovered. Some special areas of the map will require Mutagen Points to be unlocked thus forcing the player to play more to unlock content such as an access to bosses.

## Game Loops

### Micro game loop:
-Objective: kill the enemies.
-Signs: enemies have a menacing appearance, they can hurt the player.
-Challenge: aim correctly, anticipate positions.
-Fail: the player misses the shot, in the end he can get hurt and/or die.
-Reward: the player gains MPs (Mutagen Points).
-Feedback: visual effects ("blood", colour change) and sounds.

### Middle game loop:
-Objective: upgrade the character.
-Signs: the player earns MPs when killing enemies.
-Challenge: kill a lot of enemies
-Fail: the player fails to kill enemies
-Reward: the player's characteristics increase.
-Feedback: visual feedback in the upgrading system and in game feeling

### Macro game loop:
-Objective: unlock the map
-Signs: number of required waves to unlock exposed on the gates
-Challenge: survive waves of enemies
-Fail: the player dies
-Reward: the player unlocks a part of the map
Feedback: the gates open, sound of opening gate

## 3C

### Character

The character is a kid, called Billy, who has turned into a zombie.

 Basically, Billy will be able to throw his arms at enemies but only once per arm. That ability will be the main source of outgoing damage.

He will have to pick them up to shoot again and for that purpose he will also have the ability to headbutt the enemies in order to push them away and access his lost arms.



The headbutt will only do very little damage since we want the player to focus on the "arm launching" ability.

### Controller

The controls will be simple:



Two Joysticks (one to move the character, the other to aim), Two triggers used to throw your arms. One button to hit with your head.

### Camera

 The game will be in a 2D TopDown inclined vue. The camera will be player centric.

As we want to player to evolve in a big city, we want the camera to focus on the player and follow him along his journey.

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# Upgrading System

The upgrading system will only be available once the player dies. We intend to have a Vue of the character on one side with highlightable parts of his body (head, left arm, right arm, body, feet) and a simple interactable UI menu "linked" to each part of the character. The player will have to spend the Mutagen Points he earned by defeating enemies on the different parts of the characters body thus increasing progressively its different characteristics.
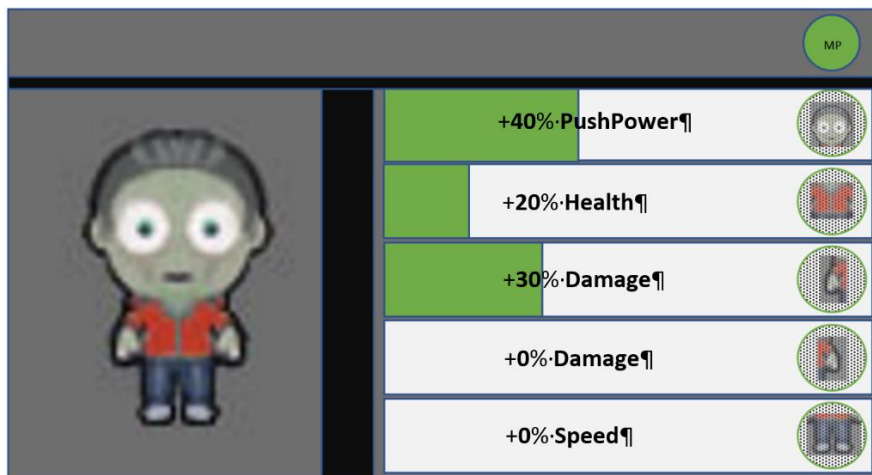


The different characteristics will be:

-The repulsive power of the headbutts (head).
-The life of the character (torso)
-The damage dealt with the arms (left and right arm).
-The speed of the character (feet)

All characteristics will be limited and once the limit is reached the possibility of unblocking a special ability will be offered to the player.
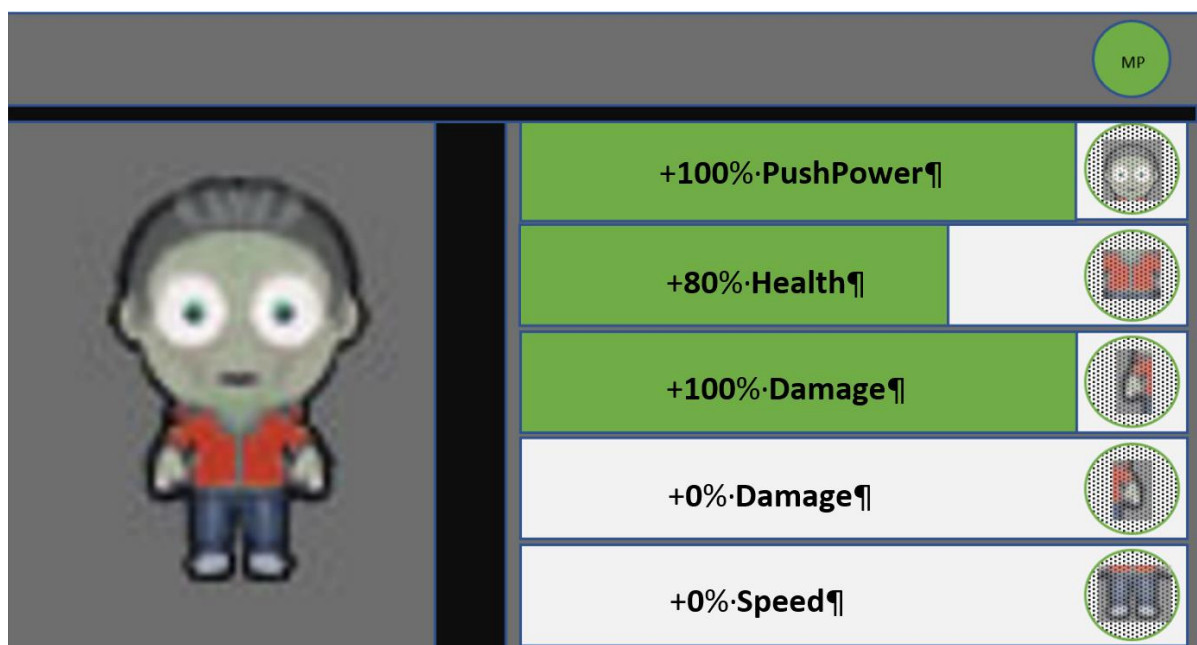
One special ability will be available of each part of the body except for the arms that will have three.
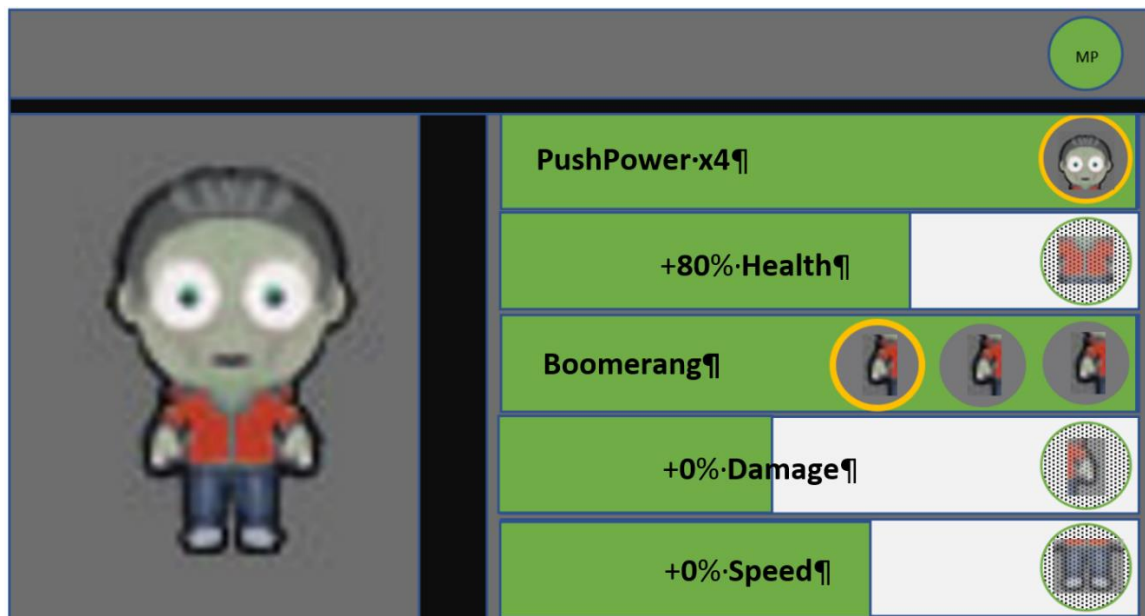


For the multiple selections a window will appear after staying on an ability for a defined time to explain what the ability does

## Special Abilities

The special abilities for the body parts will be a significant increase of characteristics for the head, torso, and feet (double, triple or more).

For the arms, the player will have the choice between special "shots", one for each arm. These special shots will be the following:

-Explosive Arms:
Once the arm hits a target, it explodes and deals massive damage in range.

-Lawnmower:
The arm rotates on itself, moving forward and cutting through the mass of enemies.

-Boomerang:
The arm is thrown at high speed straight at the enemy and comes back at the position from which it was thrown.

# Enemies

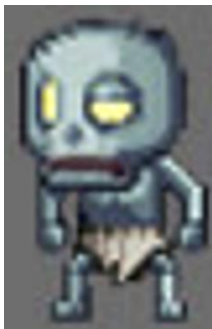The enemies that The Player will face, come in a variety of shapes and sizes, there will be:



-The Chaser:
This zombie will simply head straight for the player to kill them without any special behaviour.
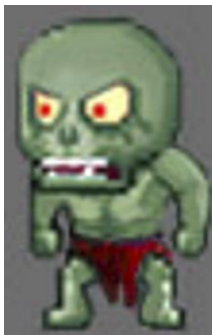


-The Rusher:
This zombie will target the player, get into position and charge in a straight line until he hits the player or anything else.



-The Shooter:
This zombie will be more of a turret like enemy who will move until the player is in reach, target the player and throw his ribs in the players direction.



-The Boss:
The boss will have a massive amount of life, move slowly, and inflict a great amount of damage per hit to the player. Once the player has lowered his life under a certain percentage (50%) he will enter a "Frenzy mode".
In that mode he will throw his head on the players position for it to explode and start hitting frenetically around him. His movement area will be in a range around the player, defined by his percentage of life (49%, big random area, 1% goes straight towards the player)

All these enemies will differ and spawn randomly by increasing in number as the waves progress.

## Map

The map will be a big rectangular city. The player will start in the middle of it, in a little neighbourhood.
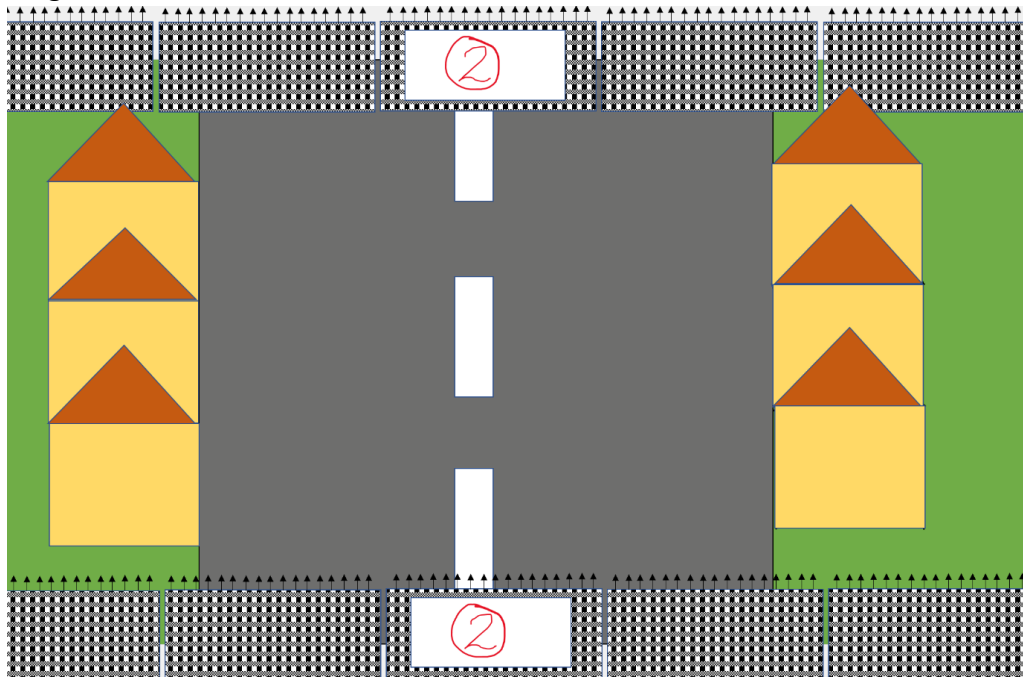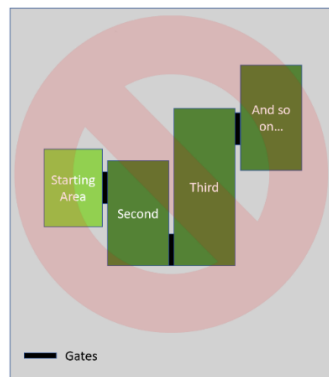


The more the player advances in the game the more the area will grow in every direction.

The objective of having the player start in the middle is to give him a possibility of discovering the map in every direction and increase the sense of being in an "open" space.



We want to avoid giving the player an impression of a linear progression.

The Map will be blocked by sectors according to the maximum waves reached. At the beginning the player will be stuck in a little rectangle until he reaches the second wave and the more the player advances, the more he will unlock and be able to discover new regions.
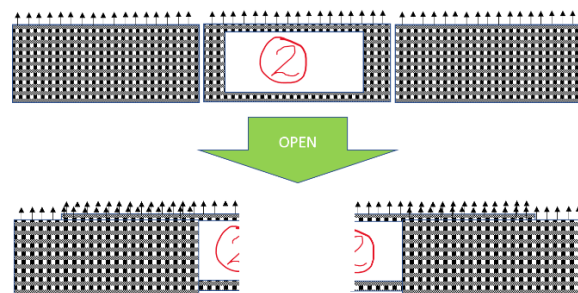


The number of available regions will depend on the time we have to create them.

## Level Assets

The map will contain multiple assets used to build the city such as buildings, houses, fences, grass, cars, gates, and many other elements we could find in a city.
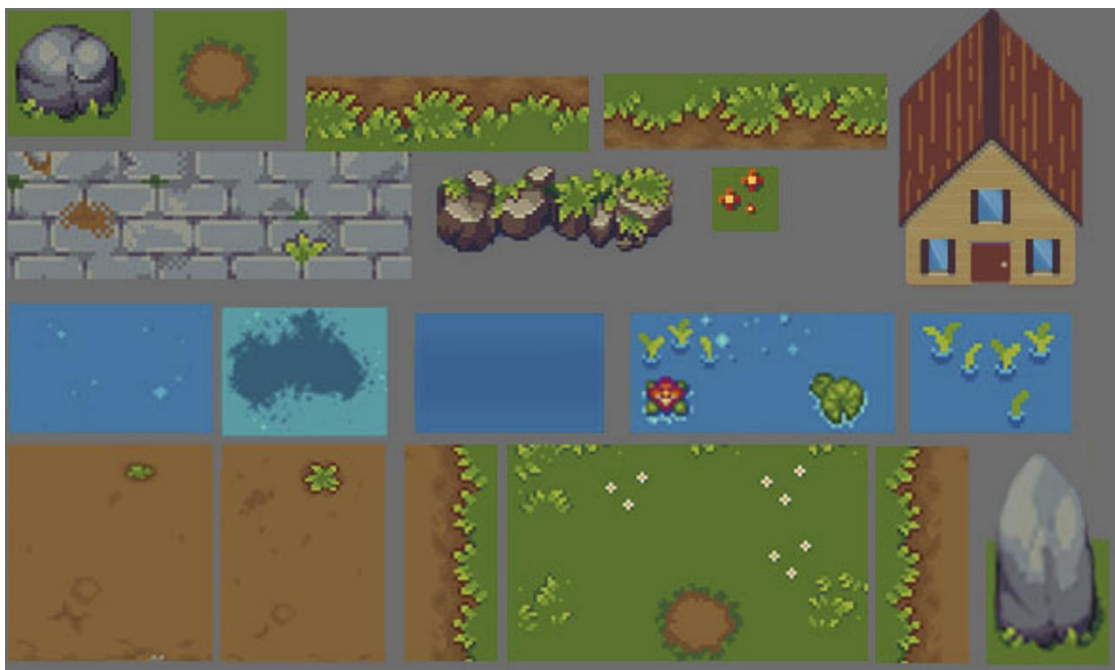
## UI

The UI will be as simple as possible, exposing the necessary elements for understanding the game without overcomplicating the experience

On the top part of the screen, we will have at each side an icon representing each arm. That icon will be greyed out when the player doesn't possess his arms, next to those icons, there will be a reminder icon showing the trigger used to shoot.



At the bottom right, there will be a simple UI with the head of the character and on top of it the Icon of the corresponding control (Headbutt). Next to that image there will be a health bar.

On the other side, there will be a display of the current score (in waves) and the total amount of mutagen points.



## Technical Details

We are going to use Unity in a [LTS] version, probably the 2020.3.25f1 or later.

The packages we are going to use for sure are Tile Map, Cinemachine TextMeshPro and the new InputSystem from Unity.

We might use more packages according to time left for polishing the game.

The project will be uploaded on GitHub with Git lfs for heavy files and the team will use SourceTree to have a better visualization and version control.

We are also going to Use Trello to "track" and assign work, but also to report bugs if there are any.

## Narrative

In a postapocalyptic world, the entire population was transformed into Zombies.

Up to that point everything was fine. Except some little changes of colours and smells, the world was running as it always had.

After a long rest, a kid named Billy wakes up and decides to go out and play with his friends in the neighbourhood before noticing that the entire hood had been locked down. He looks around, trying to find his little friends, and finds himself nose to nose with a weird looking zombie. It's at that point that he understands that something isn't right…

Effectively, during his long sleep, a group of mad scientists tried to change things "back to normal" making them even worse and infuriating a major part of the population and turning them into "Zombievores".

## Inspiration



"Enter The Gungeon" was the reference in terms of gameplay and camera move since it is a popular twin stick shooter



"Sifu" was a great source of inspiration for the upgrading system based on death.



We also looked for other references such as "Dead Cells".

## Audio & Sounds

For the audio, we want to have a comfortable feeling to the game, so we need a slow and light music. For the stressful parts of the game, we need to speed up the track and maybe change it so that it feels more challenging.

For the sounds, we will need a lot of sounds for feedback such as opening gates, noises for hurt enemies, or little "Bing" sounds for interactions or validation of actions. Every enemy will have his own way of "talking" so the assets will have to be multiple or modified enough to be different.

## Artistic Direction

For the artistic direction, the team gathered diverse elements of pixel and 2D art on ArtStation and composed a mood board with them.
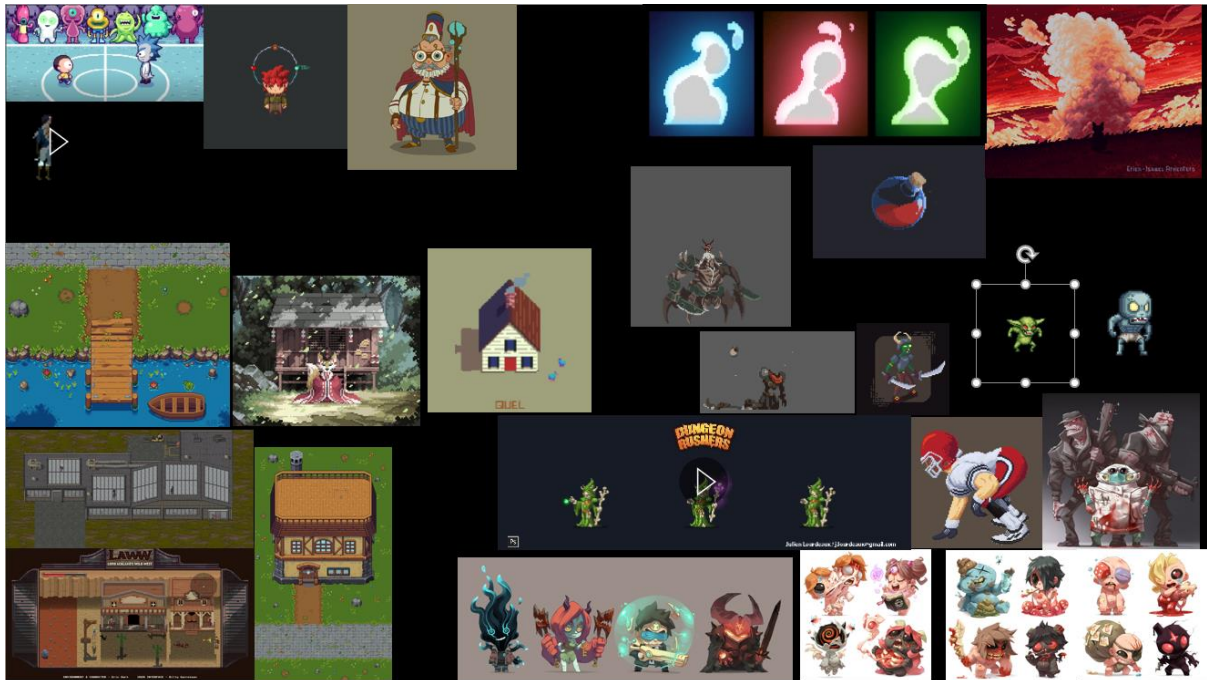


The only guideline was to have cute zombies in a non-altered environment. Even though the world is a postapocalyptic dystopia, according to the narrative elements, nothing was altered in the structural elements. For that reason, we want to give a cute and joyful feeling to the game and put an emphasis on stress and pressure only in certain conditions (such as "Boss fights" or corridors.