

Buggle Trussle

Game Design Document - Post rework

I) Pitch

Buggle Trussle is a party game in which bugs fight each other in an arena, using different weapons.

II) Technical Infos

Title: Buggle Trussle.

Genre : Party Game-Shoot em up

Number of players : 2-4

Plateforme : PC

Age Limit : 7+

Target Audience : Public déjà habitué aux jeux vidéo 15-35 ans.

III) Game's Basis

This game is thought of as a party game, with a twin stick shooter gameplay. It is mostly based on two game modes :

-A Deathmatch, in which players fight each other, trying to get the most kills, either until hitting a defined target, or the timer runs out.

-A Treasure mode. Here, the players must gather crystals that regularly spawn on the ground, in order to have the most at the end of the timer. Dying implies losing part of one's fortune, but is not a limit to the game like it is in deathmatch.

IV) Development Pillars.

1) Relentless

a) *Concept*

Main pillar of the game. Each round must be made of unstoppable action.

This means having a fluid gameplay, with fast movements, and no or only a few interruptions to the flow of one's gameplay.

The situation must also be changing with time. For instance with random events, in order to create some gameplay situations and action focus points.

b) In the game

The base gameplay was made fluid by giving the weapons a short cooldown, meaning that the players are pretty much always attacking. The only exceptions are weapons that have such an impact that they need a few seconds of cooling after each shot.

In addition to this, each character has an unique spell, which gives them an option, even while waiting for their weapon to recharge.

As for the changes in the level, during the round, this is done by interacting with the background (random events or level specific mechanic), along with random weapon/item spawns, that creates focal points.

This also goes with specific mechanics for each mode :

In deathmatch, there are three points of interest.

- The weapon spawns. These should be watched, and the players must be ready to grab what appears, if it happens to be a powerful or useful weapon.

- The random item spawn. These items grants a passive bonus for a few seconds. This comes with a visual effect, and serves as a focus, both with the fight to get the item, and then by trying to flee or kill the one with the bonus.

- Finally, there is the Ultimate mechanic. If a player can make 3 kills without dying, or breaks a special item, they lose their base spell, and instead gets one use of their ultimate attack. This spell doesn't stop the game, but are devastating, which means that the players will have to focus on dodging, or trying to push each other in the death zone. This is underlined by changing the ambiance of the level, with a darker mood, and the ultimate-ready character glowing with power.

As for treasure mode, the focus points are a bit different :

- The weapon and item spawns are still here.

- The special items gives a lot of treasure instead of an ultimate

- The treasures themselves are a nice focus, with fights around the dead body of a player, while trying to plunder what they lost.

- Finally, there is the BugHunt mechanic. If a player stays in first place for 20 seconds in a row, they are fully healed, become a glowing giant, with more HP and damages. But if they die, they lost the usual part of their resources AND create an equal copy of all the treasures that falls. This means that the player is powerful, but a big target for everybody else, with the promise of a lot of treasures to try and steal the first place.

2) Ordered chaos.

a) Concept

Due to being a party game, there should be a “chaotic” aspect. This means having some randomness, a lot of information to follow, and that the game’s state must be changing.

It’s crucial for the game that something’s always going on, which goes with the first pillar.

However, this chaos must be ordered. The game must still be readable, we have to be able to know who is who, where each player is, what’s their score, etc..

Chaos is here to make the game fun, but not a mess.

b) In the game

The readability is mostly based on the extradiegetic UI.

The most important intel, like HP, scores, and the like, are placed in the corners of the screen, as a way to easily see them and link them to a player. However, this has to be taken into account when creating the levels, that the corners must not be a place where you can go. Else the players would be hidden.

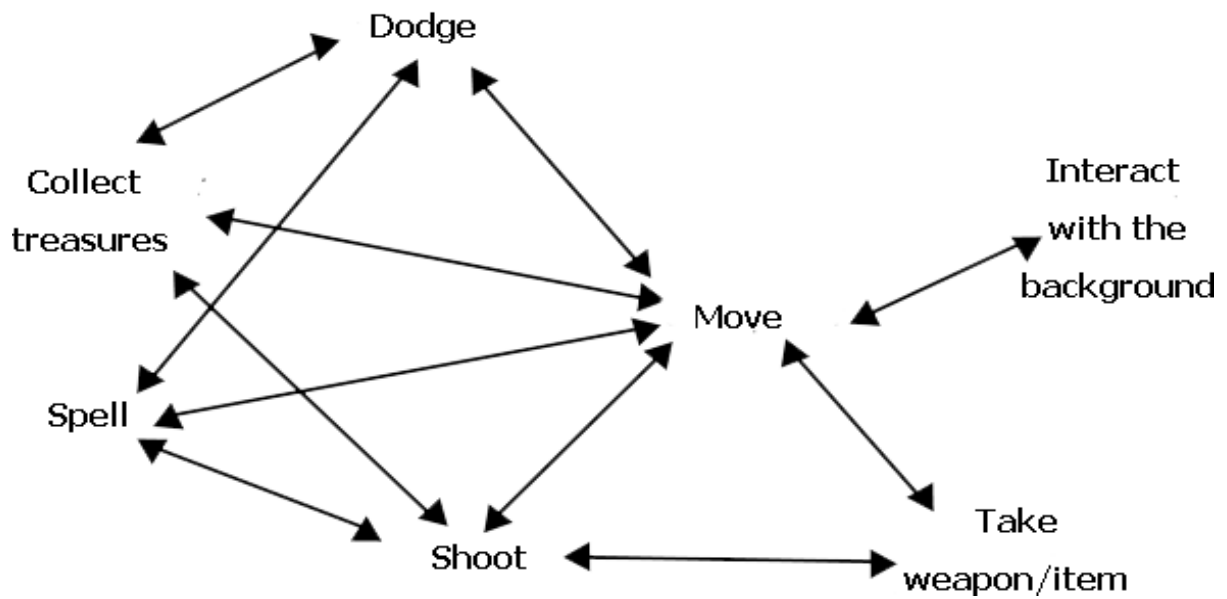
In addition to this, the players always have an arrow above them, with their color and number. This goes with an HP bar, that shows itself when the character is damaged, giving away the info without having to check the corners.

Each attack has a different sound, and a visual effect, in order to be recognizable.

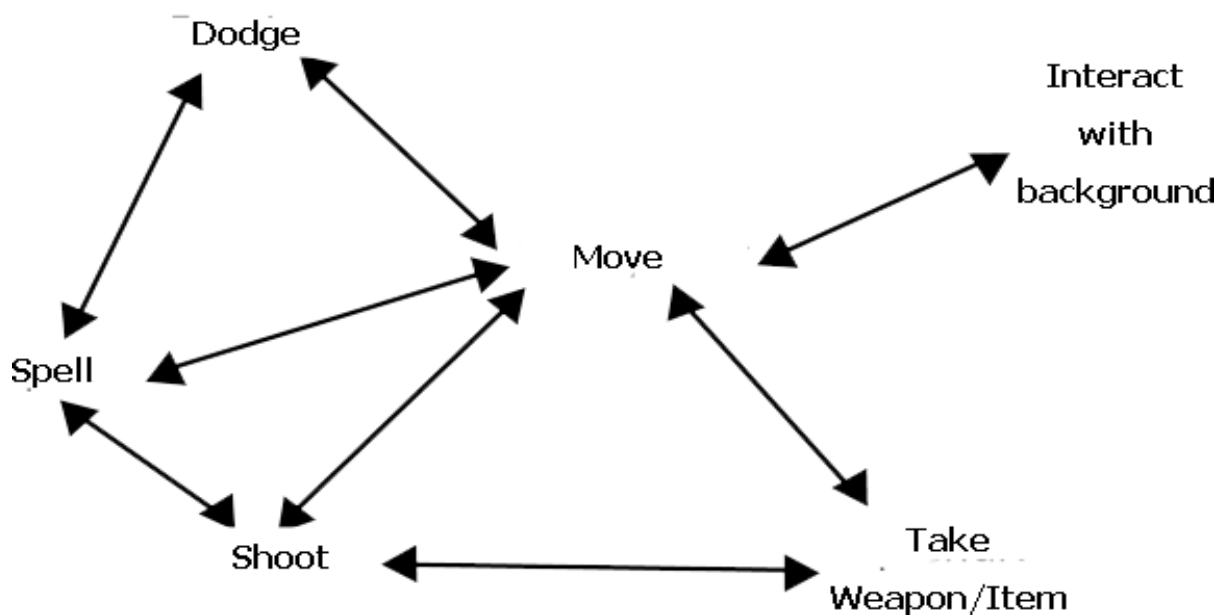
Finally, there is a button to temporarily add a colored indicator on one’s character, should the player lose track of them.

V) Gameplay Loop

- Treasure :



- Deathmatch :



VI) Mechanics

1) Concepts and modes

As explained earlier, Buggle Trussle is a multiplayer shooting game. As such, the main modes are based on shooting and moving.

In order to have some differences between each round, the game currently has two modes, which asks the players to take the game in a different way :

a) *Deathmatch*

The classic mode. The goal is to kill the other players until reaching a target score, or having the highest one at the end of the timer.

This is the most chaotic mode, due to everybody shooting everywhere. As such, it's the best way to test the gameplay, characters, and items.

b) *Treasure*

In this second mode, crystals regularly spawn on the ground.

The player with the most crystals at the end of the timer wins.

However, dying means losing half of one's crystals, which falls all around the body, on the ground.

This means that this mode is more strategic, by asking the players to optimize their treasure collecting methods, and only focus the players that are near the top, since killing the person in last place won't bring much treasures.

2) *In game mechanics*

During the development, the game got more and more complex. Right now, there is a certain amount of mechanics, more or less easy to grasp :

a) *Aiming and shooting*

Due to the game being in 2D and top-down, there was an early decision of going "twin stick". This means using a controller's stick to move, and the other to aim.

This choice was made for practical reason, of separating the aiming from the movement.

In addition to this, it's a somewhat classic control scheme, which is better, by having more chances that a random player already has some familiarity with the controls, and thus would more easily understand the gameplay.

However, the twin stick system needs a lot of precision, that can't always be found in said joysticks. Due to this, an optional "sticky" aim has been added, in order to help beginners, by making it more easy to point toward an enemy and shoot.

b) *The weapons*

There are three weapon types : Starting weapons, random weapons, and rare weapons.

The starting weapon is unique for each character, and tends to be tailored toward a certain type of gameplay.

The random weapons are the ones that can be found on top of a weapon spawner. Those replace the current weapon, and tends to be more powerful or gimmicky than the starting ones. As for the starting weapons, those have infinite ammo.

Finally, the rare weapons can also be spawned in the field, but as the name imply, they are rarer. These weapons can easily kill one or even multiple players with each shot. However, they are harder to use, have a long cooldown between their shots, and have a limited amount of ammo. Once the clip is emptied, the weapon disappears and the player gets their starting weapon back.

c) *The spells*

Each character has a unique spell, which serves to cement their core gameplay and archetype.

The spell can be used anytime, but has a cooldown, visible on the UI.

Those spells can be anything, and as such will be detailed in the section VII-A.

d) *Positive Feedback Loops.*

These are two mechanics that serves as a reward for a leading player.

In deathmatch, this is the “Ultimate spell”. This is a one time use powerful spell. While using it, the character is invincible, and unleash a devastating attack.

This is available after killing three enemies without dying, or destroying the treasure bug. As such, they reward kills with a bit more kills. (that don’t count toward the next ultimate spell, of course).

As for the treasure mode, there is the already mentioned “Bug Hunt”. If a player stays in first place for a certain amount of time, they get fully healed, becomes bigger, gains 10 more HP, more damages, and have a magnet effect on close treasures. This stays until the player gets kills.

In order to make this more fun, the player also gives twice as much treasures when killed. This makes them the common target, and a way of changing the current equilibrium.

e) *Negative Feedback Loop*

The reverse of the last mechanic. Here, it's a system that helps a losing player. If somebody is staying too long in last place, they get a shield when they die. This shield will protect them from a fixed amount of damages, that increases after each death. The choice was made to have this be a defensive bonus, due to a beginner player having more need for survivability than more gun power that they may not be able to use.

f) *The treasure bug*

An item that sometimes spawn in the level and must be destroyed by the players. In deathmatch, it grants a free Ultimate spell, whereas in treasure mode it gives out a lot of treasures. This is a major objective, made to attract the players. They then have to chose between focusing on the bug and trying to get it, or using it as a distraction to kill the ones that are focused and gain an advantage.

g) *Passive items*

The only things that can be triggered with a simple contact from the players. These items give a temporary bonus, similar to what we can find in Quake or Towerfall. These can help with an offensive, defensive, or general bonus. These are somewhat rare, and should attract players by being powerful.

VII) Level Design

1) General idea and limits

Due to the genre and system of the game, it was decided that everything must fit in the camera's view.

It would technically be possible to have a more dynamic camera, with zoom/dezoom depending on where the characters are. However, this idea wasn't kept, due to the camera changes making it harder to follow the situation, and the fact that it may throw away some shots.

Then, each level must be usable in both modes.

This means that they should be easy to navigate, with a lot of movement options, for the treasure mode. There is also a need for walls inside the level, as covers, since the game is way too chaotic and unfun with free shots across the screen. These walls are also ideals to put the treasure spawners.

Every level also have a unique gimmick. This can either be an interactable part, or a random event that can happen. This should change the way the players apprehend the situation depending on the mode and stage.

Finally, each level must have two "hot spots" : The weapon and item spawners. They both regularly create something that'll give an edge to the player that gets it. Due to this, they must be both visible, and in an open area. Getting to them means going through a danger zone and taking risks, in order to create small scale conflicts when trying to get through.

2) Current arenas

a) *Teleporting*

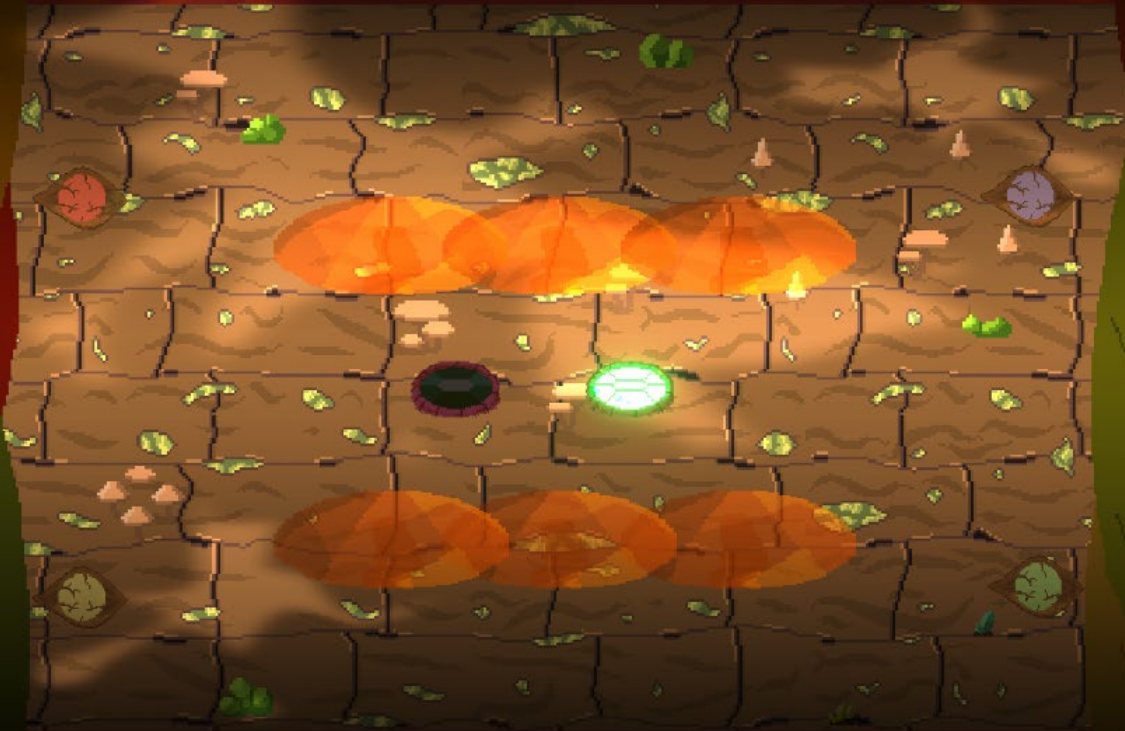


The first stage of the game. There are two teleporters pair (green and purple), with which the players can interact, to be warped toward the corresponding other. This means having an easy way to go from one edge of the map to the other, as a repositioning tool, or a way to dodge shots.

The two spawners are around the central wall, as a way to center the fight for them. Due to the green teleporters, it's quite easy to ambush a player in the center. However, the reverse is also true, that a fast player may grab the wanted item and then teleport away.

This stage is harder to understand than the second one, but leads to better play patterns.

b) *Arène Rock*



The second arena.

As the name implies, rocks will often fall from the sky, in random places. The players must dodge them, or take heavy damages.

This stage is more simple in its construction, based around 3 lanes.

This gives a big advantage to long range weaponry, but also gives a way of going around those players to kill them.

The spawners are in the center, creating conflict in the middle lane, by asking the players to be exposed from all sides when trying to get something.

VIII) Current Content

1) Characters

a) *Mothred Thera*



The most « basic » character.

They are made to be a jack of all trades, and easier to control, with no specific gameplay in mind.

Their starting weapon is a seed pistol. This item has a low precision and doesn't deal that much damages, but shoots at a fast rate. As such, the basic strategy is to shoot in the general direction of the enemies and overwhelm them with seeds.

Their spell is a wind shield. It protect them for a few moments, while dealing damage in a small area. However, they can't move while doing it, which leaves them open for a counter attack. Quick to use, this spell helps Mothred survive in the long run, and can often save them during duels.

b) *Nelli Senti*



The « Tank » character.

Nelli is slower than the other characters but can endure quite the beating. Their gameplay is more static, and akin to playing an immovable wall.

Their starting weapon is the mantis boomerang. It's range is shorter than most weapon, it doesn't deal an incredible amount of damages, and is a bit slow to use. However, the projectile comes back, and flies right through walls and enemies. This means that a single shot can hit multiple people and/or the same enemy twice. This

is made as the logical follow up to Nelli's gameplay, by using short range counter hits and establishing a danger zone around them.

As for their spell, it's the crystal shield. While it's up, Nelli loses half their speed, but can stop all damages. This makes them the ultimate bastion, but with the mobility of a typical wall.

c) *Kaspar Virid*



The « Thief » archetype.

Fastest of the characters, their gameplay is based around their mobility. It's the ideal character to snatch items and optimise one's treasure collecting ability.

Their starting weapon is the scarab horn. It has medium damages, with a low cooldown. Each shot sends three horns in a small cone, which makes them harder to dodge, and deadly at a short range. This is the perfect weapon to control an area or dispatch a close enemy.

Their spell is a simple jump. When activating it, Kaspar propel themselves in the chosen direction, with a high speed. While jumping, they also deal contact damages to anything in their path. This move allows them to quickly change position and dodge shots, prepare the perfect scarab shower, or reach an item.

d) *Anis Opter*



The « wizard » type character.

Their hp are lower than the others, and they are a bit faster than the mean.

Their main gameplay is centered around the "glass canon" strategy : Low survivability, but high damages.

Their starting weapon is the flame wand. A mid range weapon, that shoots harmless projectiles, that turns into highly damaging explosions on impact or when reaching their max range. As such, it's the perfect ambush weapon, and a way to sow chaos in a group of players.

Meanwhile, their spell temporarily lowers their precision, but makes them shoot twice as much bullets. It's a purely offensive move and the key element of Anis' kit, by allowing them to quickly destroy their enemies (preferably before dying themselves)

2) Other Weapons

a) *Mace*



One of the medium tiers weapon.

This mace creates a circular wave around their wielder. The attack propagates itself along a short range, with nice damages. It can also go through walls. As such, this weapon is great to protect a part of the map or trap another player, but it's weak against fast and ranged enemies.

b) *Shovel*



The other mid tiers weapon.

This shovel digs three rocks, projecting them in a cone, with random angle and speed, dealing medium damages. The real power of this weapon comes from their short range burst when digging. Even more, being close enough to use the burst means that the enemy will probably take some rock damages too, for a hefty total.

All in all, a somewhat complex weapon, but that'll reward a masterful use of its capacities.

c) *Scythe*

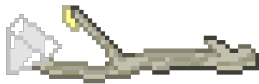


One of the rare weapons.

This scythe creates big and devastating shots, by concentrating static electricity. Attacking with it needs some wind up time, before creating an electricity ball that goes in a straight line, followed by 4 others with 72° deviation, creating a five point star pattern. These shots are slow, but accelerate while moving, and will easily destroy a player.

This weapon needs a bit of tough and planification but cover a huge ground. It has three ammo.

d) *Prismatic wand*



The other rare weapon.

This wands creates a beam of concentrated light.

While using it, the player is stuck in place, and has a few moments to aim, using a small targeting laser. Then the real shot happens, creating a large beam dealing huge damages in a straight line.

Although powerful, this weapon needs to be carefully used, since a missed shot spells an almost certain death for its wielder.

It has two ammo.

3) Passive items

Most of these items grant a temporary bonus, that was made as a “copy” of a character’s spell.

a) *Shield*



Nelli’s shield imitation.

This item allows its wearer to take only half damages for a few seconds. This helps surviving while also not being a real invincibility.

b) *Double cherry*



Anis’ imitation.

This item gives a temporary double shot with a loss in precision.

This means big damages and that the character becomes a big danger while it last. It also works with Anis, for a quadruple shot.

c) *Mint leaf*



Kaspar’s imitation.

This item speeds up its wearer for a few seconds, along with creating a damaging aura around them. This is made for an aggressive and close ranged gameplay, but also has its use by making the character more nimble and thus hard to hit.

d) *Marromb*



The only item that isn’t based on a character.

The chestnut sticks to the character that touch it, and explodes after a few seconds, killing them automatically. One can get rid of it by touching another player, which will also grant them the kill.

This creates a small subgame of dodging and passing the bomb.

IX) Softwares

This game was made using Unity 2019.3.5f.

This engine allowed us to easily work in 2D. The team has a good mastery of it, which made us confident in our capacity to make the game.

We chose the 2109 version due to it being the most recent stable version, and the fact that it contained both the new input system and the 2D light system, which were needed for the game.

We also used the Universal Render Pipeline, in order to make custom shaders and have the light management.

Most of the game's visuals were made using Aseprite, a pixel art software.

Having a common tool for everything graphics related made for a better workflow.

As for the vfx, some of them were a bit remixed in unity, if needed.

The music was made using FL Studio, then Reaper, using VST's and trying to get away from MIDI.

The sound effects were made with real life recording, which were then modified using Audacity and Adobe Audition, until getting a satisfying result.

As for the sounds that couldn't be made in real life, we used chiptune sounds, made with the software Bfxr and the website Chiptone.

X) The future

We currently want to keep working on this project, with planned axis :

1) General content

We want more content.

This means more characters, items, weapons, and stages.

The core mechanics probably won't change a lot, but some more advanced ideas may appear, for the diversity and the new gameplay ideas.

The current priority is put on the weapons, in order to have more differences between each round, and to make the weapon spawner/the other players' stuff more important to watch.

The passive items are being rethought.

The possibility of active items is being weighted.

2) Level Design

The new stages will have to bring a new concept with them, either using their form, their gimmick, or both.

One of the current objectives is to have stages with varying sizes.

However, there may be a need for the dynamic camera system that was talked about in the Level Design part of this document, with some retooling.

If this doesn't work, we'll have to be wary that the game stays readable when using a bigger stage.

The complexity level will also be variant. We'd like to have a few stages that are more maze-like, with subtle ways to fight.

3) User Interface

The UI needs to be rethought, in order to make it more readable for the players.

Mostly, we're working on the stage select screen. Separating it from the round's setting, which will become a new screen. This way, we can have more options, and more space to explain the stages.

The character select screen may be changed, in order to be more matching with the general artistic direction, but this isn't a big priority.

The result screen will be changed, in order to look prettier and more polished. There may be some more infos on it, but we don't know what or even if we'll do it.

Finally, the in game UI will have to change a lot, since it's currently mostly ignored by the player. This will be a complex task.

4) Visual Changes

One of the major objectives for the next step is to have more variety in the assets.

We want to create some new tilemaps, background elements, and the likes, in order to give each level more of an identity.

Though we still want to have reusable assets, for stages that have a similar place or atmosphere.

This means that the future assets will have to, by themselves, communicate about a feeling and the game's world.

In addition to this, some visual effects have to be remade. Currently, their quality is all over the place and they don't mesh well. For this, we'll need new sprites and to get better with unity's tools.

Of course, every new content will also need corresponding assets.

5) Sound changes

The most important goal that we have is to add the FMOD system.

This means a more advanced management of both the music and the sounds. Mostly, having an evolving music during the fights, which will be used to showcase the current situation and the leading player. As such, it would be more dynamic, and a nice tool to know who needs to be dealt with.

This would also allow us to use some sound banks. This means having some variants for the common sounds (like the shootings) that would be randomly selected, making the general audio less repetitive.

6) Other ideas

On a more technical side, there will be a need for an option screen. At least to change the game and music's level, and the screenshake level.

We also want to implement a resolution system, in order to have the game fitting on different screens.

Finally, we will work on key rebinding, ergonomic options, and look at what we can do to make the game more accessible to all players, even with a disability.