RELEASE THE HOUNDS

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OVERVIEW

Release The Hounds is a high speed single player action / horror game designed for PC. The game is horror themed and will be using cinematography techniques for cut scenes and rely heavily on lighting effects in the game environment.

The game starts inside a prison camp. The Player awakes dazed and groggy after being subjected to some strange laboratory experiments (see 1.2. New Game Start) to discover that something is very wrong. There is a guard lying dead outside his door and the lights are flickering indicating some sort of power disturbance is going on. The game relies heavily on lighting and environmental effects to set the horror theme from the beginning of the first level or zone (see 2.4. Zones.).

During the early stages of the game there will be a slow buildup of fear towards the Hounds. To begin with there will be a 'jump scare' triggered at a random (See random start locations) location in the cell block as the initial

introduction of the Hounds to the Player. This event also enables the rest of the Hounds' navigation and afterwards glimpses of their eyes and faint growling can be seen/heard from the surrounding area.

There will be several Hounds of varying types and sizes (see 3.2. Hound Types) and the Player will have to make on the spot strategic decisions to navigate past them. The primary task is to avoid the Hounds and escape the war camp, as the Player is in most cases no match for them physically. Getting caught by a Hound will usually result in death. These horrifying Hounds will relentlessly hunt the Player while he traverses the outdoor maze of trenches. The Hounds are to add a fast pace to the game, a state of dread and panic. Night time lowers the visibility making it a more frightening experience.

There is only one level divided into Zones that control the flow and pace of the game. The difficulty is high and the game is over when the Player dies or escapes. Similar to traditional arcade games where if the Player dies they have to start at the beginning again. The paths to navigate the maze will change each time a new game has begun (see 2.2. Randomization.).

Players may get useful items to aid them in their play through, but getting these items might put them in potentially dangerous situations such as dead ends. The Player will have to assess if the risk is worth the reward. (see Items) There will also be many obstacles that the Player has the ability to traverse through/ over whereas the Hounds cannot. This is primarily what the Player will use to create distance between himself and the Hounds, forcing the Hounds to return to an idle navigation mode once he is out of smell range (see 3.4. Hound AI Behaviours).

1. CUT SCENES

1.1 THE STORY LINE

To begin with Player has no real idea what is going on. All that is clear is that you're in some kind of Nazi experimental war camp and that something must have gone horrible wrong. As the Player progresses through the game cut scenes and audio snippets of the character's inner dialogue may be triggered to give clues as to what's really happening. Getting to a Safe point can trigger additional cut scenes where the Player has flash backs of being captured tortured and drugged. But the story is not a major component of this game.

1.2. NEW GAME START

This is the first cut scene the Player will see as soon as they start a new game from the main menu.

Constructed from 2 perspectives.

> Perspective 1: A camera slowly moving down the corridor of the cell block towards the Lab door with muffled sounds of tortured moans coming from the cells on either side.
>
> Perspective 2: The first person perspective of the Player being strapped down to a surgical bed with the Player frantically looking around at the actions taken by men in white surgical outfits with blood stains and sinister eyes.

Beginning with perspective 1 and flicking between the 2 perspectives at decreasing intervals until perspective one reaches the LAB door. Then the rest of the cut scene will be from perspective 2.

The Player looks at his left arm as one of them injects something into his veins and the fps view port begins to blur and fade out.

This scene takes place in the LAB and Corridor areas of the Prison Cell block. (see 2.6. Prison (Area))

1.3. GAME OVER (SUCCESS)

The player's avatar walks off into the rising sunshine with the war camp behind him. A monologue of the player's characters' inner thoughts recalling the life before he was captured plays. The life he wishes to return to.

2. LEVEL.

The game is horror themed and is very dimly lit or even pitch black in some areas. The scene is set at night time with a starlit sky. Most of the game is in open areas where the player will be able to see the silhouette of landmarks against the sky.

2.1. ENVIRONMENT

2.1.1. LIGHTING

We will be using a lot real-time shadow casting and scripts that modify light sources dynamically. This game is fairly resource hungry but it is supposed to be very cinematic and horrifying.

Fluoro lights in buildings will have many scripted modes:

- On.
- Flickering (with variables that adjust the speed an intervals)
- Flicker out. (flickers then turns off)
- Off.

In addition to this there will occasionally be suspended lights that swing back and forth. With all light source having real time shadow casting this can be used at various points of the game to have scripted scary moments instead of cut scenes.

A great feature we would like to have is the ability for lights to flicker out when a Hound approaches and return to its previous state when the hound leaves. This will give a supernatural element of fear to the hounds that bring darkness with them.

The camera viewport in the player control makes use of HDR techniques that can give game objects the ability to glow and cast ambient light on nearby objects. This technique is used on game objects that are a source of light. It is also used on the Hound's eyes so that they glow in the darkness and partially light up their faces.

2.1.2 AMBIENCE / SOUND FX

The environment makes use of a lot of looping sound FX to create an eerie atmosphere. Dripping noises, moaning winds etc. and fluoro lights will have buzzing noises etc. We want to use sound in a way that creates a sense of realism. We want the player to be immersed into the game world and be convinced of the danger. No music or cheesy sound FX are used at all. We want to give the effect that the user has just stepped into a horror film and then progress on to frantic chases followed by skilled platforming.

2.2. RANDOMIZATION.

The position of Zones, Areas and Safe points are randomized at run time creating more frantic and impulsive Gameplay. Preventing the Player from memorising the map and getting comfortable the only way to succeed is to get better using the mechanics, moving around, collecting and using items at appropriate times or recognising and traversing obstacles quickly. Each section of the level described in this document that contains random aspects with have its own 'Randomization' subheading for quick reference to developers.

2.3. LAYOUT.

There is only one level in this game, which is divided into Zones. The level may be divided into sub levels to be loaded when crossing between zones to improve performance if needed but the zones are all connected in a way that it operates as a single level.

The level is made up of:

- Zones
- Areas
- Safe Points.

Replay ability of this single level is created due to the difficulty of the game and the randomly changing aspects of level. The level is different each time it is loaded.

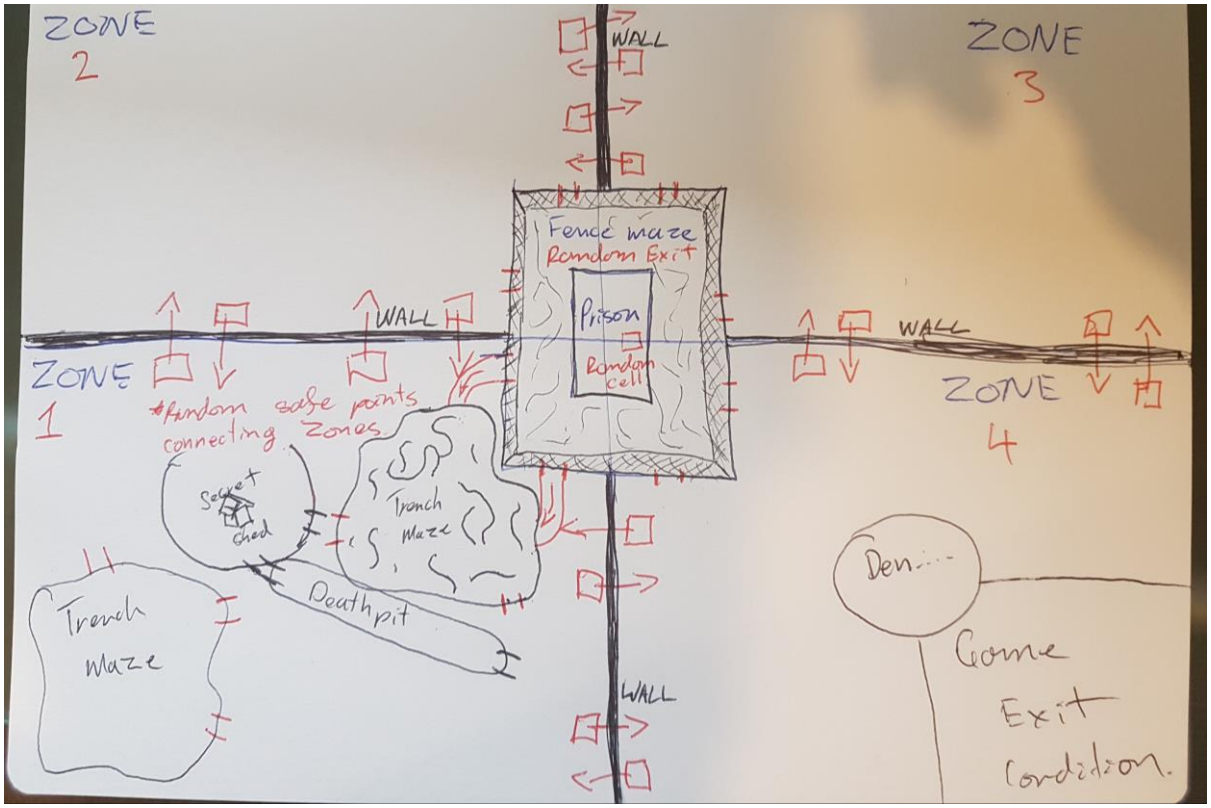


Figure 1: General Layout illustrating how random elements could be placed.

There are 4 zones that will be traversed either clockwise or anti clockwise depending on the random placements of Safe points and areas (see 2.2. Randomization.). The Prison is actually in the middle of these zones and has a Fence maze area around it. After escaping the prison, the Player will traverse the fence maze to find an exit into the first Zone. Then progress via safe points from Zone to Zone. The last Zone or 4th zone will contain the Den with the 'End Boss' Alpha Dog. (see 2.11. The Den (Area)) on successful navigation past the Alpha Dog the Games Successful Exit condition will be met with the end game cut scene.

As the level is constructed of modulated mini levels it will be easy to gradually increase the complexity of the randomization of the layout over several iterations. We have done some research into procedurally generated maze techniques which may be used for trench maze areas in later versions. With scripted random modular map constructors, we could even add features where new modules come out via updates and the number of zones can be increased.

Zones control the intensity increasing difficulty and intensity while areas control the flow and vary the pace. Safe points and secret areas give the player relief periods to catch their breath check their inventory and plan ahead.

2.4. ZONES.

A zone is a large cross section of the map with 'Areas' inside and safe points connecting zones together. The locations of safe points connecting areas will be randomly placed depending on variables specific to each zone. Zones have high walls between each other so Hounds cannot cross between zones and Players must use a Safe Point to get over it.

As a Player crosses into new Zones the difficulty is increased by the following variables:

- The number of Hounds in the zone is greater than the previous zone.
- The variance in the types of Hounds increases. (see 3.1 Hound Types).
- The number of 'Obstacles' is reduced. (see 5. Obstacles).

2.4.1 ZONE PLACEMENT & RANDOMISATION.

Entire Zones will be a parent object to all their contents so that entire Zones can be placed in different positions each time.

- Zone 1 will be placed by a script based on exit point of 2.7.1. Fence Maze – Randomization.
    - The Safe point to Zone 2 will be placed at random at a randomly chosen Zone Join Side.
- Zone 2 will be placed based on Zone 1's safe point placement.
    - At this point with 2 Zones place the rotation through zones either clockwise or anticlockwise will inherently have been decided. Hence there is only 1 wall that the Safe Point to zone 3 can be placed.
    - Safe point to Zone 3 will be placed randomly along the remaining join wall.
- Zone 3 is placed based on Zone 2.
    - Safe point will be placed randomly along remaining join wall.
- Zone 4 is placed in the only remaining position according to the layout. (see 2.5 General Layout)

2.5. AREAS – DEFINITION & GENERIC FEATURES.

Areas are smaller custom designed parts of the map such as the Prison where the Player starts, trench mazes or buildings. Areas control the flow of the game, contain details of the game world and triggered events. Most areas will also have some randomized aspects to their layout to change up the level even more. (see 2.1. Randomization. or look for the randomization subheading for each Area)

2.6. SAFE POINTS.

A Safe point is a small tower that will be reused and placed according to each Zones Randomization. Each Safe point will be exactly the same so the Player can recognize it. The Player will likely be in serious trouble with multiple Hounds pursuing them as they reach the tower. Safe Points are taller than the rest of the game world so the Player will be able to faintly see its silhouette against the night sky.

The Player goes up the ladder where the Hounds can't reach and is able to rest there before jumping off the balcony and over the wall into the next Zone.

The distance from the wall should increase each time to add a challenge to the jump.

Being a one-way path this assist the flow of the game and forces progression. Giving the Player a sense of accomplishment as they will begin to recognise Safe points as being a milestone towards a successful outcome. Being high up they are rewarded with a view of the next zones layout and will get a feeling of relief between the intense chases.

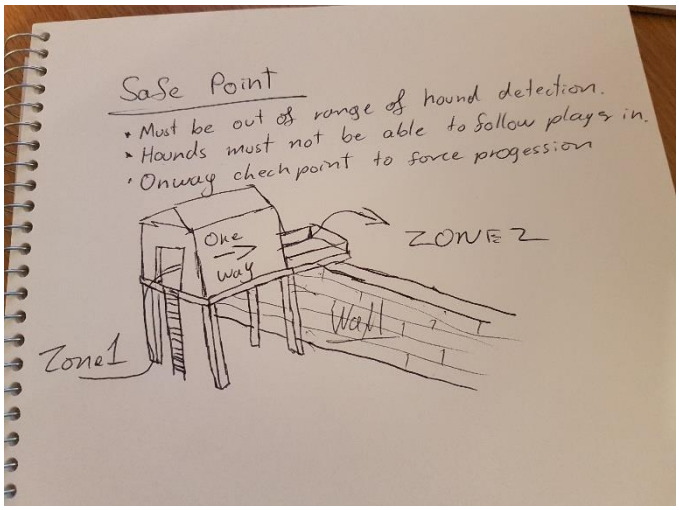


Figure 2: Safe point

2.7. PRISON (AREA)

The prison is comprised of a corridor with cells on either side leading to the Lab where the crazy Nazi scientist have been doing their experiments. The Lab is a sinister looking surgical room with beds, tools, blood stains and flickering fluoro lights. The Lab contains pickups such as Syringes that can be used to increase the Player's stamina (see 6.2. Stamina). At the opposite end of the corridor is the foyer/main entry to the prison block. This is a where the guards used to hang out and there are desks with papers, stationary and left over food.

We want to create a believable atmosphere, that this foyer was occupied by real people doing their jobs before they were all horrible killed. Grotesque disfigured bodies of guards and Nazi scientists should be all over the floor reaching for doorways or other dead bodies.

The Players start position will be inside one of the cells. Outside the door is dead guard close enough for the Player to pick up the 'cell key' item. This will introduce the Player to the item interaction mechanics and give the Player the ability to open and close any door within the prison.

2.7.1 PRISON – RANDOMIZATION.

Each of the cells except for the Player starting cell will have alternate back walls. A full wall that completes the cell or a broken wall that opens up to the outside. Only one cell chosen at random will have the broken wall and this will be the where the first Hound will be located with a jump scare trigger. The nearest light in the corridor to this cell should also activate its flicker out script (see 2.1.1. Lighting).

2.7.2 PRISON – TRIGGERED EVENT

When the Player walks past the bars of the Randomly chosen cell mentioned above (2.6.1) the jump scare event will be triggered. The Hound in the cell will smash against the bars of the cell from the darkness barking

and snarling at the Player for a few seconds before turning back and heading out through the broken wall. At this point the Hound will begin its default AI navigation mode (see 3.5. Hound Navigation).

2.8. FENCE MAZE (AREA).

The fence maze surrounds the prison Area and is the initial area where the Player will be targeted and chased by a single Hound. The fences are see-through and the area is dimly lit, this will help to build up fear and suspense as the glowing eyes can be seen from any position but the actual Hound's body is only partially visible from time to time. This particular Hound is of type 'A' (see 3.2. Hound Types) and as such this chase will be slower and less intense, introducing the concept of the game while to build up the fear and suspense.

2.8.1. FENCE MAZE – RANDOMIZATION.

The Exit from the fence maze into the first Zone is random. There are 4 exit points leading to each of the Zone locations. Separate fence objects block the exits. One blockage is chosen at random and removed. This choice should be passed to the Zone Placement script (see 2.4.1 Zone Placement & Randomisation.) as it will determine the position for Zone 1.

2.9. TRENCH MAZES (AREA)

Trench Mazes will have unique layouts with each Zone containing one or more Trench Mazes. Trench Mazes is where the majority of the chasing and hunting of the Player by the Hounds will be taking place. Trench mazes are custom built but It is possible to use procedurally generated mazes instead with random obstacle and item placement according to Zone difficulty settings. Procedurally generated mazes would need to be trialled over several iterations to determine if it's a better option.

2.10. OTHER BUILDINGS (AREA)

Several custom built sheds and other small building to place inside and around trench mazes with doors that can be opened and closed. These building may contain additional items and can serve for temporary safety from the Hounds. However, lingering here will increase the chances of Hounds smelling the Player (see 3.1 Hound Smell Radius) and just sitting outside waiting for him to open the door again.

2.11. THE DEN (AREA)

This is where the Alpha male of the Hounds will be. This Hound is particularly large so the Player definitely needs to get passed without waking it up, in this case the only way the Player can do so is if they hug the wall downwind of the Hound. See figure 6.

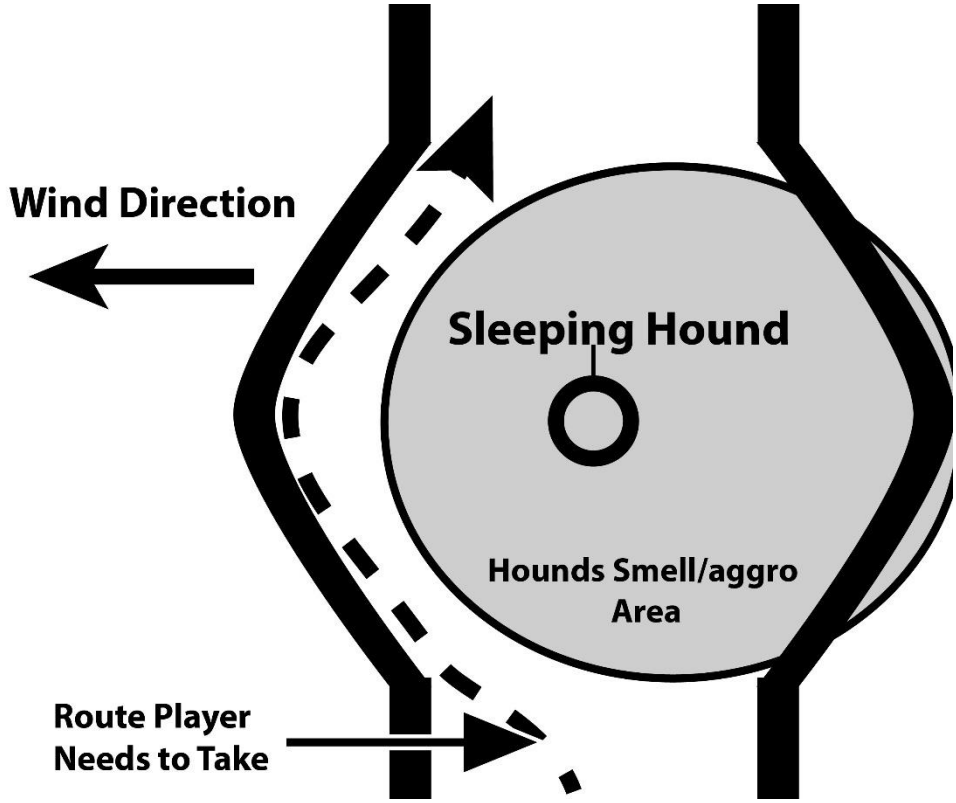


Figure 3: Sleeping Hound Route.

2.12. SECRET AREAS (AREA)

A secret area is a room or a ditch with surrounding wall like terrain where the player must use skills they have gained from practice with the movement mechanics in order gain entry. For instance, mid-air crouching (see 6.3.4. Crouching) after a jump to get through a window into a room, or sprint jumping to gain enough momentum to get over a terrain wall into a ditch. The reward for getting inside a secret area should be visible through the entry point. We want secret areas to be easily noticeable but hard to get into. They should be positioned in a way that allows the player to avoid constant harassment from hounds in order to give the player time to manoeuvre and have multiple attempts at getting into the secret area without dying.

Requirements of secret areas are:

- A noticeable opening with visible reward.
- Hard entry requiring skills with the movement mechanics.
- Easy exit. An easy way to get back out after taking the reward, such as a ladder or platform.
- Quality of item matches difficulty of entry.

2.13. DEATH PITS (AREA)

Death pits are pits with at least 1 Type C Hound inside (see 3.2. Hound Types) and parts of a broken bridge going across it. If you fall in there is no way out and the hound is going to kill you. Death pits create a Risk VS Reward Situation. They require great skill with the Sprint + Jumping mechanics (see 6.3.3. Jumping) as each section of the broken bridge They will provide a shortcut that crosses a large distance of the Zone you are in but it is highly likely that you will die. The greatest reward however is that Hounds will have to take a massive

detour to follow you. If you are being followed by a large number of them, then successfully getting across the pit will mean they will no longer be chasing you.

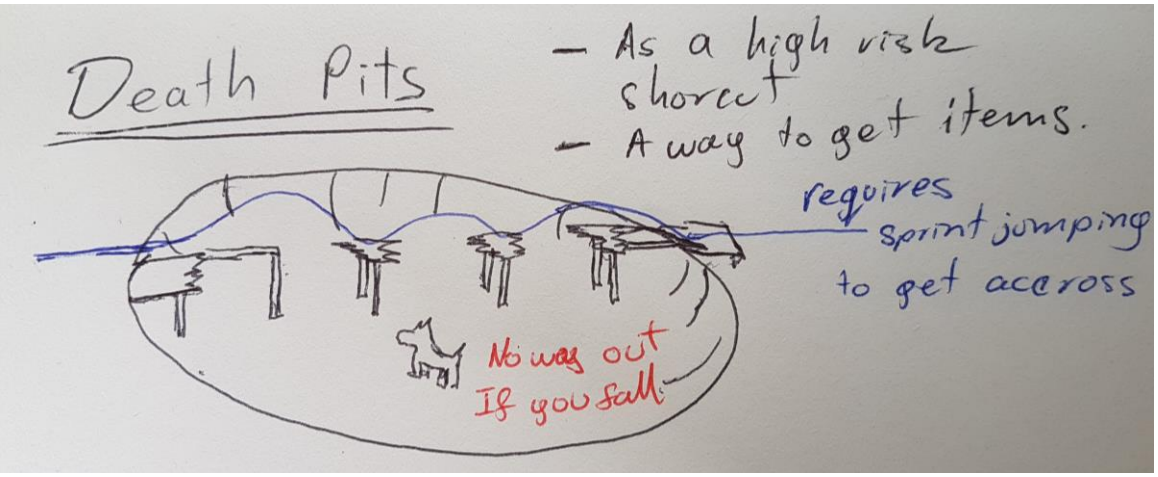


Figure 4: Death Pits

The hounds will not attempt to follow you across as they do not want to fall into the pit. This decision was made to prevent the player just repeatedly leading hounds to the nearest death pit as an easy strategy. If the player only makes it to the 1st platform then hesitates and does not continue the Sprint + Jump technique, then the hounds will still be in range sitting there waiting for the player. The player may still be able to quickly jump back to the beginning and retry the Sprint+Jump combo or run off somewhere else hoping to survive but it is unlikely.

These kinds of situation give the player a chance to demonstrate a high level of skill in using the Movement mechanics in various ways. He may even jump back to the start and continue a Sprint+Jump combo to evade the dogs waiting for him.

3. HOUNDS

The hounds are German Shepard guard dogs that have been mutated by some unknown experiment gone horribly wrong. Similar to what may be called a Zombie the hounds are almost undead, they are extremely hard to kill and have an insatiable desire for human flesh. Unlike zombies however they have retained and even gained strength and speed. The mutations have given them increased size and a lust for blood.

Figure 5: Concept Art for hounds.

Figure 6: Model Designed for the in game Hounds.

3.1 HOUND SMELL RADIUS

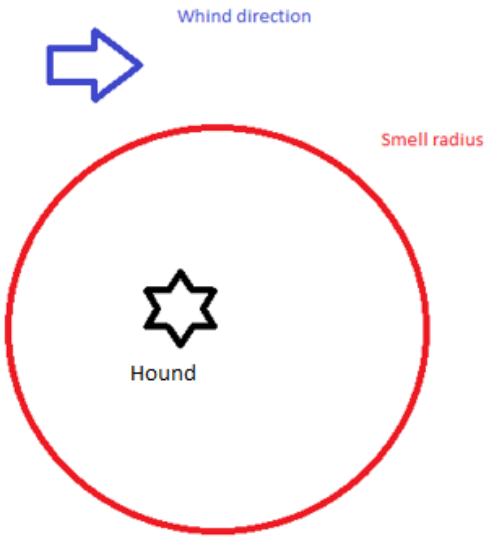


Figure 7: Smell Radius

Hounds have a keen sense of smell, and can track the players scent. Hounds in the game have smell radius trigger. When a player is within this radius they are aware of the player's location regardless of whether they have line of sight or not.

The smell radius drifts according to a global wind direction variable. The player needs some kind of indication that this drift is happening. Either by displaying it on the game H.U.D. or via a moving flame torch that the player carries, or by looking at environmental effects such as trees and grass swaying.

The smell radius has been implemented in the navigation but the drift mechanic may not be included in the final product.

3.2. HOUND TYPES

There are a couple of varying sizes strength of Hounds. The stats of each Hound will vary by the following values:

- Health.
- Idle Speed.
- Chasing Speed.
- Attack Damage.
- Stun chance (how likely the Hound is to get stunned by rocks etc.)
- Stun Duration.
- Smell Radius.

3.2.1. TYPE A.

The smallest Hound can be killed if the Player can manage to find enough items to damage it. This Hound has less movement speed and a smaller smell radius. It's chase speed is very close to its idle speed and it is very easy to stun with a rock. This Hound is used at the beginning mainly just to look scary but poses no significant challenge to avoid it.

3.2.2. TYPE B.

The mid-range level of Hound. Very hard to kill, not so easy to stun. Moves faster and does a lot of damage.

3.2.3 TYPE C.

Very tough, almost impossible to kill (mines recommended) and very small stun values. Fast and persistent with a large smell radius. Will often travel with packs of lower class Hounds.

3.2.4 ALPHA DOG.

Really massive. It not invincible but it may as well be as you are likely to need every damaging item in the game. This Hound has mutated to the point where it cannot leave the courtyard that it now sleeps in, because it is too large to fid through any walkways. Hence it spends most of its time sleeping and waiting for prey to come near. Impossible to stun and kills instantly. The Player needs to stay down wind and hug the walls to sneak past.

But as a master achievement the Player can attempt to kill it by collecting every item in the game and save them for the end.

3.3. HOUND ANIMATION

The hound will have several animations created in 3DS max that will be incorporated into the final product. Since the hound has several states that it shifts between during gameplay, it makes sense to have various animations for all of the different behaviours and states as well as transitionary states. Animation also increases immersion by creating a sense of realness when it comes to objects we expect to be active in the real world's environment. The animations are created in 3DSmax and the exported to Unity where we can break them down and use them in Unity's animation controller. The animation controller is essentially another finite state machine that allows us to create a network of animations that allow for transitions and default animations. These can be all controlled from within our hound's AI scripts to correlate with the AI finite state machine designed for the hound. Seeing as animation is a difficult and time consuming investment of our resources, it is unlikely the hound will be fully animated in the Release the Hounds prototype.

3.3.1 RUNNING ANIMATION

The running animation will be used whenever the hound is traversing the map either hunting the player or searching for the player around the map. We intend the animation to look slightly uncoordinated since the hound is grotesque and mutated so a lack of coordination is to be expected.

3.3.2 ATTACKING ANIMATION

The attack animation is for when the hounds are chasing the player and have caught up enough to the player to be able to attack him and possibly do damage. This animation is meant to look like the zombie hound is awkwardly lunging at the player and attempting to bite or tear chunks out of the player character.

3.3.3 SLEEPING ANIMATON

This is an obvious animation as some hounds such as large alphas can be found dormant around the map in a sleeping position. This will essentially just be a typical laying down animation with some shallow breathing and maybe an ear twitch to signal the dog is actually active but asleep.

3.3.4 STUN STATE

This animation will be for when a hound has been attacked by the player and stunned, causing it to stumble and shake in a confused manner for a short period of time, before transitioning back to running.

3.3.5 TRANSITION STATES

Generally, unity will help with transitioning animations, but we will include some animations such as the hound jumping up from sleeping and beginning to chase you, potentially some jumping animations to reach higher parts of the map. Also possibly included could be some short animations such as the hound being hit by

the player before going into the stun animation and also a hound howling into the air to signal it has found the player before going back to the chase.

3.4. HOUND AI BEHAVIOURS

Hounds behaviour is to be reactive and somewhat random, so the Player has an idea of what to expect, but doesn't know what is going to happen next. We hope that this creates a dynamic and challenging game atmosphere as you won't be able to predict the Hound's behaviour encouraging replay ability.

We will be using a custom built finite state machine to handle a Hound's behaviour in terms of current states relative to the current state of the game and the Player's actions. The majority of these actions are triggered by the Player's actions and movement throughout the game with sleeping being a starting state and investigating being the default active state when the hound is awake and has no target. The states we will be using are as listed below:

3.4.1. ASLEEP

This is one of the default states of the Hound. Some Hounds may be found asleep in different places of the map. This allows you to carefully avoid them by sneaking past and making minimal noise, without waking them up. They will also be unable to smell you in this state. If woken up by loud noise in the proximity or by being attacked or bumped into by the Player, the Hound will either enter the investigate state or the chasing state depending on the Player's proximity and if the Hound can sense it.

3.4.2. INVESTIGATING

When the Hound cannot smell or see the Player, the Hound will patrol or investigate the level to see if it can find the Player. This works by having predetermined points on the map that the Hound will choose at random to traverse between, and will change target locations when it reaches its current destination. During this state, if the Player comes into view, the Hound can smell the Player, or a noise can be heard by the Hound, it will either enter the Chasing state in an attempt to attack the Player, or run to the area it heard the sound in an attempt to find the Player. It will then investigate the area randomly around the location where it heard the sound. Players could use this to distract the Hound so they can escape to another area of the map or if the Player is careless, it can attract the Hound and a possible game over for the Player if they are killed. The Hound moves slower in this state than when it is chasing the Player.

3.4.3. CHASING

This state is used when a Hound has targeted the Player by either being close enough to smell the Player, or by being able to see the Player. The Hound will constantly chase the Player at a faster speed as long as the Player is in the Hound's line of sight or the Hound can see him. Even if the Hound loses sight of the Player, the Hound will still be able to track the Player down. When the Player is out of vision and the scent is lost, the Hound will move to the last known location of the Player, and switch to investigate mode to find the Player in the area, or if the Hound is close enough it will change to the attacking state to attempt to damage and kill the Player.

3.4.4. ATTACKING

If the Hound comes close enough to the Player, it will be able to attack the Player dealing damage. Since the Hound is an unnaturally strong mutated beast, it will not be many hits until the Player is killed by the Hound. If the Player manages to avoid the attack, the Hound will attempt to chase and continue attacking the Player. While the hound is in this state, it is possible for the player to avoid the attack and also counter by hitting it with a rock stunning it.

3.4.5. STUNNED

If the Player manages to hit the Hound with a rock in order to stun it, the hound will be unable to move for a few seconds allowing the Player some time to break away from the Hound. If the Player manages to escape the Hound, the Hound will investigate the area until it finds the Player or continue chasing the Player if the Player is still in the detection range of the Hound. See Figure 8 below.

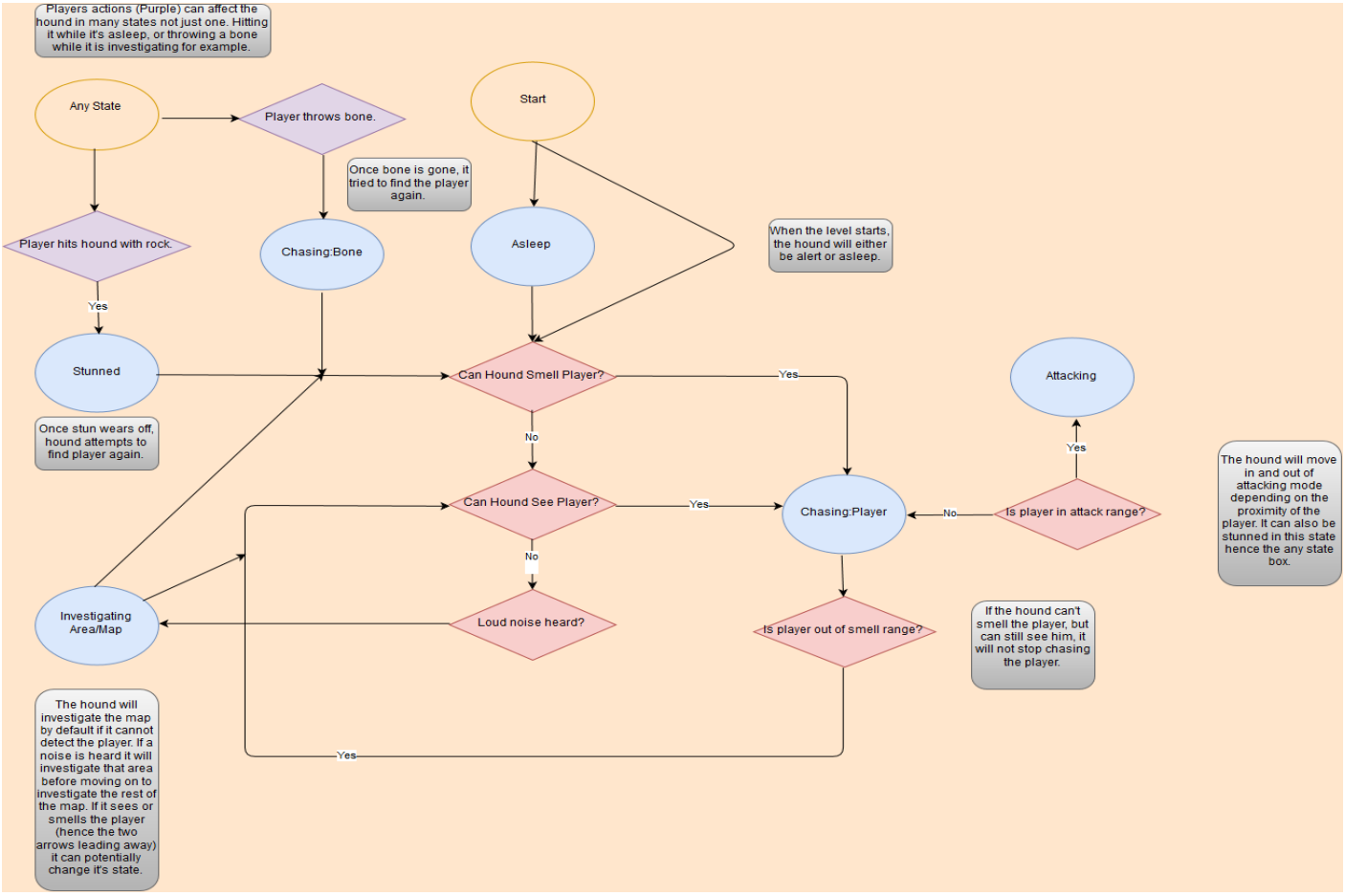


Figure 8: various states of the finite state machine and the different interactions

3.5. HOUND NAVIGATION

The Hound's navigation and pathfinding is handled by using Unity's navigation meshes that are prebaked onto the different levels. These allow our AI to find appropriate paths around the map using unity's inbuilt A*

pathfinding algorithm. Having this inbuilt function makes it easy for us to setup the Hound's movement around the map using scripts to control and update its destination based on its state and the target it is tracking.

As noted above in AI, the Hound will move between points on the map to search for the Player. These will be predetermined points set on the map and stored in an array that the Hound will be able to choose randomly from and then search between to find the Player. If the Hound was chasing the Player and the Player manages to evade the Hound, it will navigate to the Players last known position on the map and select random points on the surrounding navigation map to see if it can find the Player, after which it will continue searching the whole map after a short time period.

The navigation map will also allow door or gate mechanics that we can use to counteract the Hounds ability to reach the Player. This works by deforming the mesh where the door is closed, to cut off that path, causing the Hound's pathfinding algorithm to find another path to the Player, potentially allowing the Player to get away.

The map will also have weighted or "cost" nodes meaning the Hound would rather path around water, or other terrain obstacles, than to move through it as it would slow the Hound down. Once again including mechanics like this will allow us to provide the Player with strategic options about which paths they take to avoid the Hound or it chasing them in the first place.

The below picture (Figure 9) is an example of a navigation mesh. The light aqua/green areas are the path able areas that are broken into individual nodes which can be weighted and navigated by the hound. The dark green nodes are the nodes the hound is going to traverse to get to its destination (the little red circle at the top next to the wall). There is a border around all un-path able obstacles such as walls that is the light green area. Having this buffer allows us to make the hound path away from the walls so it doesn't look like it is clipping through wall. Please note this is just a test maze used for developing the AI and pathfinding.

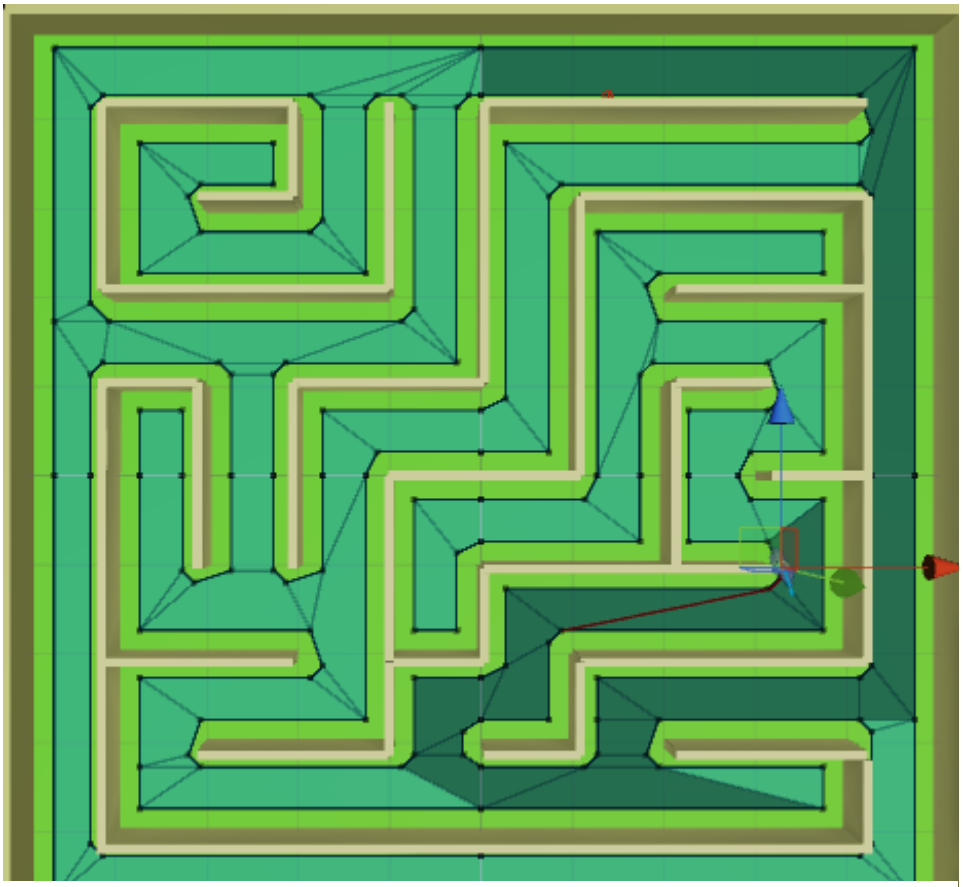


Figure 9: Example of a navigation mesh tests

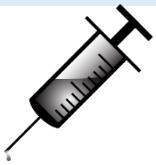
4. ITEMS

Each level has a certain number of pickup items which can be used by the Player to escape from the zombie Hounds chasing them. These pickups are either to access areas of the map, to provide temporary increases to the Player's abilities, or to directly combat the zombie that are chasing the Player.

4.1. ROCKS

Throughout the labyrinth you will be able to pick up rocks that have been randomly placed around on the maps ground. These will enable the Player to somewhat combat Hounds by throwing it at the Hound to stun it, giving the Player a chance to put some distance between themselves and any Hounds chasing them. Rocks are less effective for larger types of zombie Hounds.

4.2. SYRINGES



Syringes are full of adrenaline, which gives the Players character a stamina boost allowing the Player to sprint for a longer period of time. This can be helpful in avoiding the zombie Hounds chasing the Player. There is limited space for these in the Player's inventory and scarce amounts of them are available so Players will have to use them wisely.

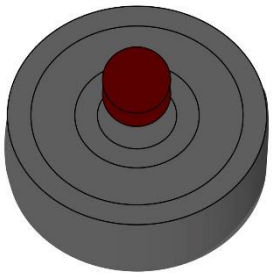
4.3. KEYS

There are many doors throughout the labyrinths that the Player will have to negotiate. Many will be unlocked but some will need a key to open them, and sometimes finding this key could be hazardous to the Player's existence as locating it could put it in the direct path of the ever present threat of the zombie Hounds chasing the Player. Opening these doors will open up new areas for the Player and allow them to eventually escape, and also exposing them to new threats. A mechanic that can be used here is Players can close doors after the open them to be able to block Hounds from getting to the Player, or trapping the zombie Hounds behind them.

4.4. BONES

Bones of prisoners and guards can be found in different areas of the map. These can be used to distract the zombie Hound by throwing the bone in the direction the Player wants the Hound to go, allowing the Player to potentially get away from the Hound or directing the Hound to a more "desirable location" such as a room that can be closed off.

4.5 LAND MINE



Land Mines are very rare items that can be found in some places on the map. Land Mines do massive area damage to anything walking over them, including Players so it's best not to set and forget them. These are useful for eliminating chasing Hounds and the larger more dangerous Hounds you will encounter in the game. This will enable the player to take on large amounts of hounds, but being so powerful means the player will have to take some care to not activate them themselves. Land mines are one use only items, and are very rare, players do not want to be careless with them.

5. OBSTACLES

Whenever 'Obstacles' are mentioned in this document it is referring to parts of the environment that the Player can traverse over, under or through that the Hounds are unable to. This provides a way for the Player to create distance between themselves and the Hounds without having to consume/use items.

5.1 TUNNELS

This will be added to some parts of the maps and give the player strategic options to sneak to another part of the map away from any pursuing hounds. That being said these may not always be easy to find and can be located in various places such as trenches or as trapdoors in building. Similar in effect to a sewer system.

5.2 SCAFFOLDS

Thins paths can be added to different parts of the map to allow the player to escape to another part of the map without the hound being unable to follow or to potentially fall of and trap or kill itself in a death pit.

5.3 LADDERS

Ladders will obviously be available to the player to access higher areas in the map or to escape over a wall away from and pursuing zombie hounds.

5.4

Doors will be added to parts of the map and buildings meaning the player does not have complete access to the whole map at first and enables trapping hounds or blocking of hounds from accessing the player's new position. Also we hope hunting door keys down makes the game harder and scarier will being chased!

6. PLAYER

The Player is a first person shooter controller however is actually constructed form a 3rd person control with the viewport shifted to be in the position of an FPS controller in order to enable the user to see his own avatars body in the game when looking down.

6.1. HEALTH

The Players will have a small amount of health compared to the Hounds attack damage and cannot survive many attacks. There is also no way to regain health. The primary strategy for survival is to run. (see 8. Challenges & Strategies) The Player's health is indicated by the Heads up display (see 7.2. UI Game HUD) and once it is gone the game is over. There are no extra lives the Player must start again. Similar to old arcade games where each death means the Player must start from the beginning again.

6.2. STAMINA

The Player also has a certain amount of stamina indicated on the HUD (see 7.2. UI Game HUD) that is consumed over time when sprinting is activated (see 6.3. Movement). Once the Stamina is completely used up the Player becomes exhausted and sprint mode is deactivated and the Stamina bar slowly fills back up again. This means sprinting can only be used for short periods of time and should only be used when needed. The Player can increase their stamina with the use of a Syringe (see Items: 4.2. Syringes).

6.3. MOVEMENT

The game uses a very familiar control scheme common amongst FPS games. WASD for movement, mouse move for looking around, space for jump, ctrl for crouch. This means that most users can jump right in and start playing without having to learn anything new. If needed the user can see what the controls are at any time via the game menu (see 7.1. UI Menus).

Different components of the movement mechanics can be combined together to achieve different results. This creates more depth in the strategies and possibilities the player can explore. This enables a lot more depth and exploration in the Gameplay When combined with corresponding level design techniques.

Different components of movement mechanics are described below…

6.3.1. WALKING

Walking in this game is fast. Almost the equivalent of jogging speeds. There is no real need to walk slowly in this game but slow walking will be enforced during scenes where cinematic effects are taking place. For example, during the beginning prison area walking speed is massively reduced as we want the Player to take in the environmental elements being used for dramatic effect. Also this needs to happen as a requirement for the jump scare to have maximum effect (see 2.7.2 Prison – Triggered Event). After this first triggered even full movement functionality is enabled and the Player can now walk at the normal faster speed.

6.3.2. SPRINTING

During time of need when the Hounds are getting too close the Player can activate sprint by holding down the shift key. The idea behind sprinting is that if you are running for your life you would have adrenaline pumping through your veins allowing you to run faster than a Hound. As long as the Shift key is held down the Player can sprint at this high speed, however it does require Stamina. Stamina runs out quickly and you cannot sprint for long. Sprint speed also add to your momentum when jumping and will sometimes need to be used in order to get over certain Obstacles. Combining sprinting with multiple jumps will also increase your overall speed as long as you time it correctly.

6.3.3. JUMPING

One of the best ways to get away from Hounds. Jumping is limited to a specific height but does allow you to climb up environment objects with multiple jumps. Also when combined with Sprinting consecutive jumps can accumulate momentum for a quick getaway or more challenging obstacles. This accumulation of momentum means that each consecutive jump will increase in distance. The requirement for this to work is that the Player needs to jump as soon as he hits the ground from the last jump. This is achieved by removing the friction values form the FPS control for a short period of time when landing and while sprint is active.

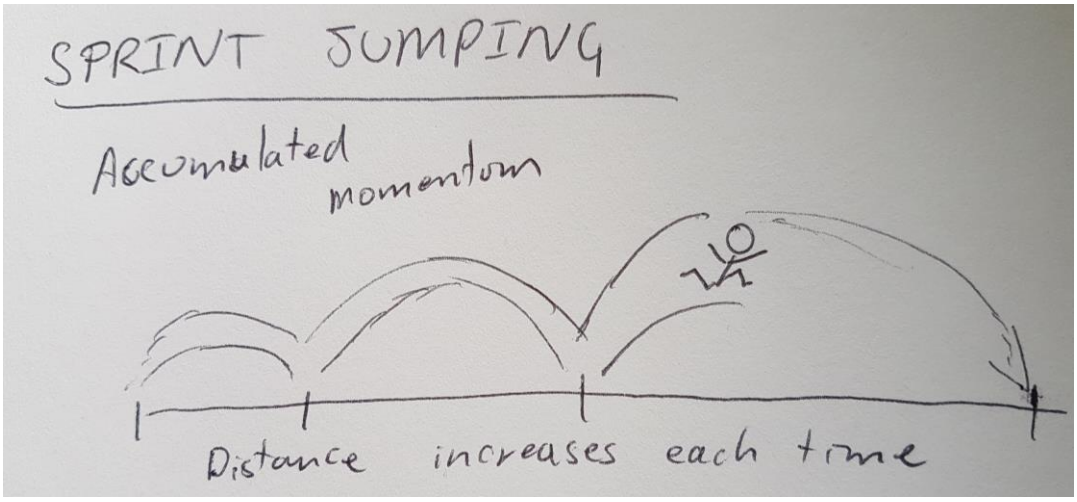


Figure 10: Consecutive jumps while sprinting accumulates momentum so that each jump covers more distance.

6.3.4. CROUCHING

Crouching reduces the height of the Players hit boxes so that he can crawl underneath Obstacles that the Hounds are too big to fit through. Sprinting and jumping is disabled while crouching, however crouching can be performed in mid-air. This means that during the Player's air time he can crouch and possible fly through a small window and get into a secret area (see 2.12. Secret Areas (Area)).

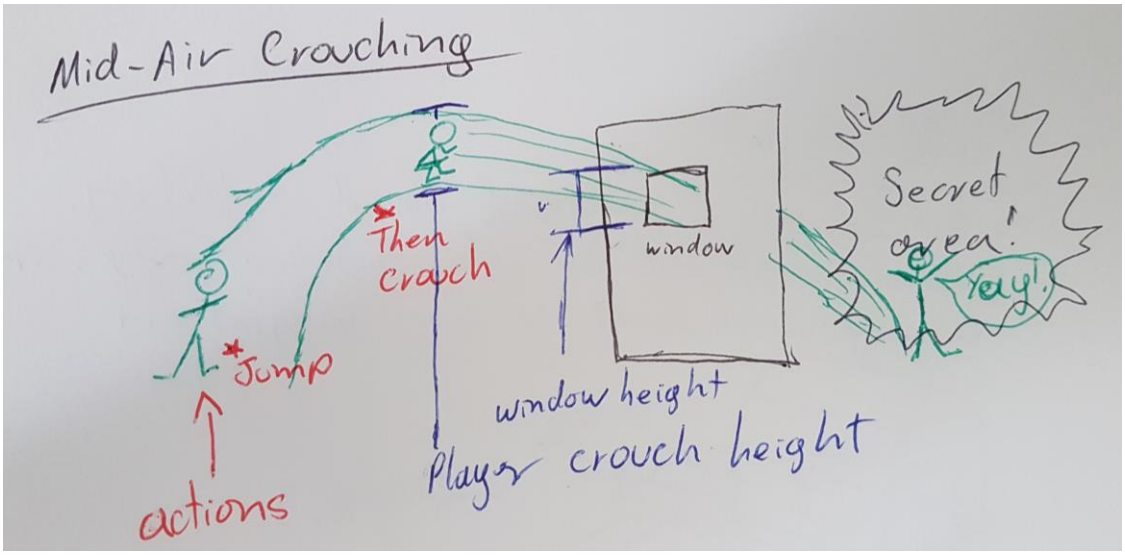


Figure 11: Mid-Air crouching after a jump to get in hard to reach places.

6.3.5. ATTACKS / ITEM USE

Attacking or using an item is done with left mouse button. There is no standard melee attack. The offensive power of the Player is extremely limited and requires the use of an item that has some offensive ability. (see 4. Items) The player must equip an item from their inventory before they can use it.

6.3.6. INTERACTING WITH OBJECTS

Player can open and close doors with the E key. The ability to close doors after entering rooms give the player some strategic control over where the Hounds can navigate. If the player closes a door behind him the Hounds cannot follow. Items the player finds along the way can be picked up by using the E key also and will add the item to their inventory. Some objects in the game will have colliders that are affected by the player merely moving into them but are only present for added effect. These objects do not affect the Gameplay.

7. INTERACTION & FEEDBACK

7.1. UI MENUS

Players start the game via a start menu which has several buttons the Player may click to adjust options such as graphics details and volume before they click the start game button.

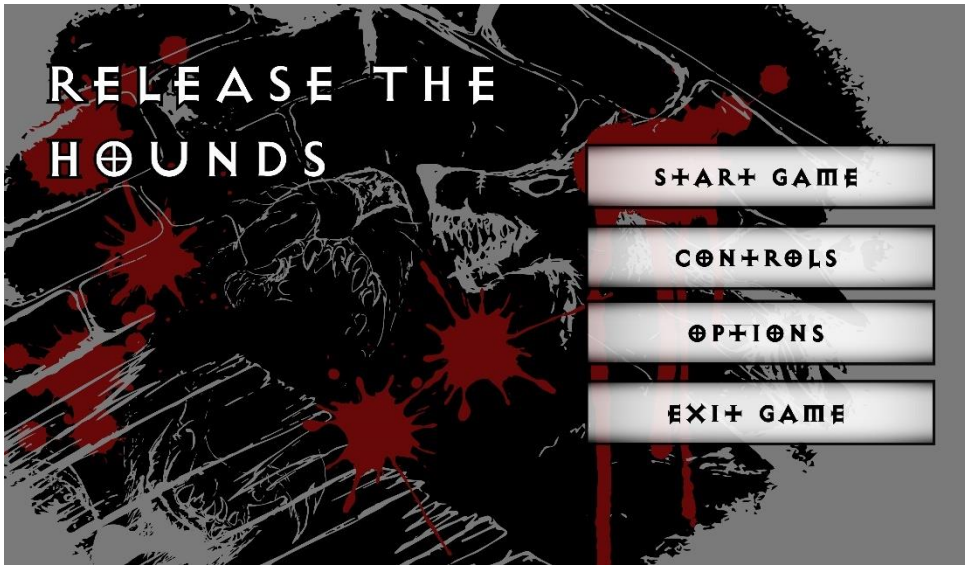


Figure 12: Start Screen

In response to the Player starting the game they are given a short introductory cinematic which Players may skip via the “skip” button or by pressing the enter key.

Once in game Players now have control of their first person avatar, Players may control their avatar through the WASD or arrow keys to move. Player viewing angle is controlled by mouse movement. In addition to this basic movement controls include jump with the space bar key, crouch with the ctrl key.

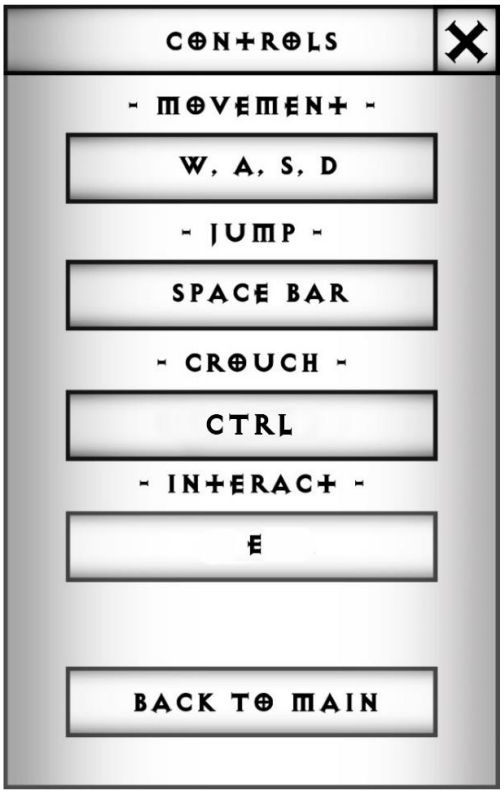


Figure 13: Controls Menu

Players can access the menu by pressing the escape key, or by clicking the menu button in the top right hand side of the screen, this produces a small popup menu with various buttons including “Go to Start Menu”, “Graphics Options”, “Sound Options”, “Controls”, “Exit Game” and “Back to Game”. To close the menu Players can click the "Back to Game" button or press the escape key. See Figure 2.

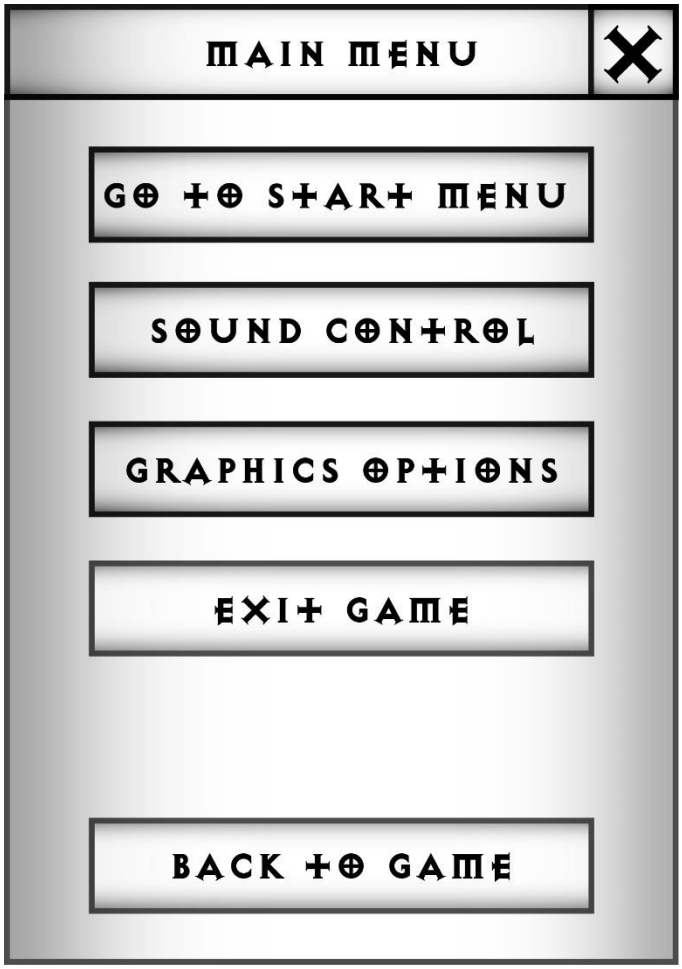


Figure 14: Main Menu

7.2. UI GAME HUD

Players will see a health bar and a stamina bar in the top left hand corner of the screen; these bars provide a visual representation of the Player's health and stamina showing how much of the bar is full, as well as a decimal representation of their current and max values displayed in the format of x/100. Players will also see a number of syringe icons underneath their stamina bar representing how many shots of adrenaline they are carrying. See Figure 15 below.

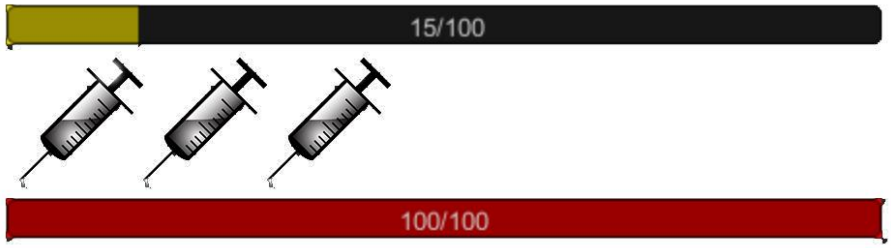


Figure 15: Players GUI for Health, Stamina and Adrenaline.

7.2.1 INVENTORY

Players have access to a small inventory, the inventory contains 5 slots and is located at the bottom of the Player's screen. When a Player picks up an item it is automatically placed in the first available slot (see 4. Items). Players then equip the item by pressing the number for that slot. For example a Player picks up a rock item, this then enters slot 1 of their inventory, they then pick up a bone item, the Player then presses 1 to equip the rock and throw it, the Player then picks up a landmine item, the Players inventory slots are then 1.Landmine 2.Bone 3-5.Empty.

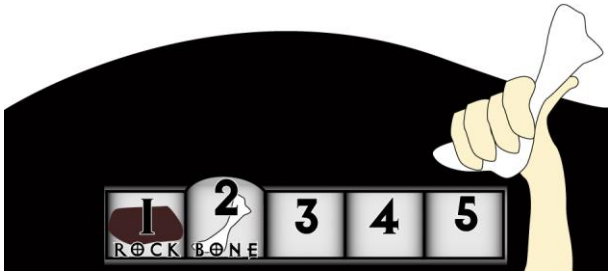


Figure 16: Player Inventory

Most inventory items when used will then be equipped into the Player's hands; outside of the inventory the Player may then double click to use the item. For example Players may have a rock in their inventory, a Player would press 1 to equip the rock, the rock will then show up being held in the characters hand and the inventory will have a bump on the selected number to indicate it is currently equipped (See figure 4.) Players may then double click to use the rock item now it is equipped, in the case of this item they will throw it.

7.2.2 INTERACTION POPUP MESSAGE.

When Players approach an item they can interact with a small popup button appears in the centre bottom of the window, this button can be clicked and will say "Press e to interact with x" where x is the interact able object, for example a door. Players may also simply press the "e" key when this menu pops up. See Figure 5.

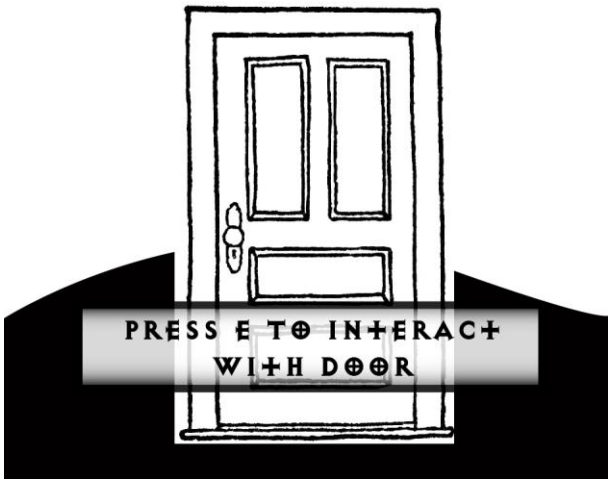


Figure 17: Interaction Pop Up Window

7.3. FEEDBACK

Many of the Player's actions have very obvious visual and audio feedback. Clicking any of the buttons such as the main menu or inventory buttons plays a thematically appropriate "click" sound in addition to opening up

whatever submenus or screens they are responsible for. Player movement triggers a running sound to play while they are moving normally, this is distinctly muffled with the field of view lowered when Players are crouching, and jumping triggers sounds at the start of the jump and at the landing with the field of view appropriately handled. Using items in the Player's inventory triggers an equipping sound based on the nature of the item coupled with the removal of the icon from the Player's inventory. When using equipped items the Player will see appropriate animations coupled with sound, for example when using a rock a throwing animation will be seen coupled with a grunting audio.

8. CHALLENGES & STRATEGIES

During the course of the game Players will encounter several challenges preventing the Player escaping the camp. The first problem Players will encounter is a maze of trenches they will need to navigate to escape, Players do not have access to a mini-map so they need to rely on memory and landmarks to figure out where they have and have not been before when they decide which direction they need to head in.

The primary challenges for Players to overcome is escaping from Hounds, Hounds are faster than a Player who is not sprinting, and have significantly more health as well as the ability to attack. Players have several options for dealing with Hounds, Players may run, attack or improvise.

Players may be able to run away from Hounds effectively, however there are several factors involved, Players will have a significantly easier time getting away from Hounds if they are running downwind because this makes their scent harder to track. Players will also have an easier time running away from Hounds if they are at full stamina or have adrenaline shots as sprinting allows them to run faster than the Hounds. Players also have the ability to pass through certain obstacles Hounds cannot get past, such as climbing over a small fence or opening and closing doors.

Players can attempt to attack and kill or injure a Hound, generally this is ineffective as Players cannot attack without a weapon, while there are several weapons around the map such as rocks or knives. It is very difficult for a Player to kill a Hound as a Hound can survive many hits depending on the weapon used, stronger weapons tend to have limited uses and weaker weapons can take as many as 10 hits to kill a Hound. This is a very limited strategy made even more difficult because a Hound can kill a Player in approximately 3 hits and Players cannot recover health.

Players may have other options if they find appropriate items or make use of the environment in clever ways, many of these options are not immediately obvious, for example a Player may have a bone which at first they may think can only be used as a make shift weapon, but then they may attempt to distract a Hound by throwing it a bone to gnaw on, or getting 2 Hounds to fight over it.

We have identified some dominant strategies that we could see emerging in the game relate to the player and their interactions with the zombie hounds, items located around the map and also the environment. We think that players who are lucky to have found extra adrenaline shots will be able to use it around corners or in conjunction with other pickups such as rocks to escape the hounds smell or to hit the hound and escape around the corner away from the hound. Adrenaline will also be likely to be used when the player is getting close to the end of the level and used as a last minute boost to out run any pursuing hounds.

Another strategy that could be quite interesting is distracting the hound with bones. Since like all good dogs, these zombie hounds also like bones, being able to throw the bones and have the hounds chase them and potentially fight each other for the bone could lead it to being a powerful tool. Also being able to manipulate the hounds attention and position means we could purposely cause the hound to enter places of harm such as a death pit, a lockable room or even cause them to run over live mines.

Rocks will be somewhat common and will be a way of buy some short respite from the hound's relentless pursuit. This will allow the players to stun hounds at dead ends as a last resort to get away from the hounds. Players would be typically expected to have at least one of these on hand to allow them to get away from the hounds in tight positions rather than getting stuck and outright losing the game.

Having to find keys and open doors is another mechanic which can be used to a player's advantage. A player could potentially leave an area closed off and lure hounds into it, stun the hound and lock hounds in these areas. Bones could also help with this maneuverer as well. Since we would like some randomly generated map features in our game.

Mines have some pretty obvious strategies such as laying them down behind you when you are being chased or baiting hounds into mines. These mines could also be saved for the larger hounds such as alphas, since rocks are less effective on them and they are too large to fit through doors thus rendering locking them away to be futile.

9. BALANCING ISSUES

9.1. ATTACK RANGE OF HOUNDS VS HOUND'S BODY COLLIDERS.

As the Player is able to crouch and crawl through spaces that the Hound cannot get through, we would need to give the Hounds the ability to attack the Player even though it cannot get under the obstacle to avoid possible stalemate situations and forcing the Player to keep moving.

9.2 DEATH PITS HAVING NO WAY OUT.

Although the game is difficult and unforgiving we would like there to always be a chance of survival in any situation no matter how slim it may be. After the movement mechanics are well tested and finalised a revisit to the inside structure of death pits may be required in order apply this philosophy of always having a chance. Building the inside of the pit with indents in such a way that the jump mechanics will allow a way to climb out of the pit with a very high degree of difficulty that will require many attempts and a lot of skill. This way there will still be a chance of surviving if the player messes up and falls in whilst not making it the ideal strategy to just fall in and climb out the other side.

9.3 BALANCING NUMBER AND TYPE OF ITEMS

One area that must be considered in this game is what items spawn where and how many are allowed in the map. We want some desperation on the part of the player so having too many items on the map could make the game too easy. One way we intend to do this is having enough keys to open doors but also some of each of the other items to help in the game. A rarity attribute can be used so common items like rocks spawn more often but rare and more powerful items such as mines and syringes spawn less often making them more sought after but also encouraging players to be more conservative when using them. Why waste a mine or all your boost just before you encounter some larger and more dangerous hounds around the corner?

10. TESTING PLAN

For the testing plan we will use a pre-created scaled down test level that we have created to showcase the mechanics, atmosphere and basic challenge of the game. We will encourage other participants to come and sit down and play the game and offer feedback on the game, and potentially find any bugs or other issues the test users have with our game.

For the test map we aim to include the following:

10.1. FUNCTIONAL HOUND AI

We intend to have at least one hound which is able to give chase and react according to the AI listed in section 3 regarding the hound's behaviour.

10.2. SOME ITEMS PRESENT

Items present in the game will hopefully be the items as listed above time willing, allowing the player to interact with them and see how they affect game play and also the zombie hounds chasing them.

10.3. PLAYER CHARACTER

The player character present will be the standard vanilla first person controller found in Unity. No model or animations will be used at this stage due to time constraints.

10.4. THE HOUND

The hound will be present in the game, but only a few placed around the map in pre-set locations. It will have textures and the AI as discussed above with some sounds sourced for free from the internet, but no or minimal animation which we have found to be one of the most time consuming parts when creating characters and assets.

10.5. THE MAP

The map will be minimal and possibly just consist of a maze at night time with some basic textures added. We will have a starting point for the player and an exit point as well as some doors, hounds and items around the map the testers can use to explore the prototype.

10.6. RELEASE THE HOUNDS USER TEST FEEDBACK QUESTIONS

Thank you for taking the time to play, test and provide feedback on our game,

Please answer the following questions with a short answer on the lines provided.

It would be appreciated if you would also fill out the "About You" section so we can learn more about the Player base, however if you are uncomfortable giving out this information you may leave it blank.

About You:

Age _____

Gender_____

Do you typically enjoy first person/ Horror games? ____

Favourite genre/genres of games

_____

Difficulty:

How would you rate the challenge rating of the game overall?

Way Too Easy ☐ Too Easy ☐ Just Right ☐ Too hard ☐ Way Too Hard ☐

Did you feel any particular aspects of the game felt too hard or too easy? If so which one/ones?

Example: " I found it too hard to hit the Hounds when I was trying to throw rocks at them"

_____

Were there any specific challenges you felt were especially hard or disproportionate to the overall difficulty?

Example: "Sneaking past the sleeping dog was too difficult."

_____

In regards to the Player and Hound movement speed did you feel the character moved at a relatively good pace for difficulty and challenge? Would you make either the Hound or Player faster or slower? Would you change the sprint mechanic at all? More sprint, faster, slower etc.

_____

UI/Controls:

Did you like the control mapping? _____

Did you have any trouble controlling your character or forgetting what keys you needed to press?

_____

Would you change any of the controls to something else? E.g change the Interact key from E to F.

_____

Did you find the Menus and Button layouts to be confusing, too complex or too easy.

E.g too hard to get to controls menu, too easy to accidently exit game.

_____

Was there anything else about the User Interface or Controls you did not like

Example: "Health bar was too small"

_____

Gameplay:

Did you like the gameplay conceptually? ____

Did you find the gameplay fun?

_____

Which parts of the gameplay did you especially like?

Example: " I liked being able to utilise so many tools for different purposes:

_____

Which parts(if any) of the gameplay did you felt should be improved, removed, reworked or altered in some way?

Example: "I disliked the adrenaline mechanic and felt it should have done something more useful than improve stamina, like make you run faster"

_____

Story:

Do you think the game should have a bigger/smaller focus on the storyline?

Game should focus more on Story ☐

Game has about right amount of Story ☐

Game should focus Less on story ☐

Did you understand the storyline of the game? ____

If not, why?

Example: " Opening cinematic wasn't very clear"

"not enough things were explained"

_____

Did you like/enjoy the storyline? _____

Why or why not?

Example: " I liked the concept and experimentation storyline of the Hounds but I didn't like how there was very little about the Players storyline"

_____

Art, Theme, Feels :

Did you encounter any visual or audio glitches/bugs?

Example: "Some of the walls did not have any textures on them"

"Sometimes the Hounds animations would break"

"Even after leaving the prison I could still hear prison taps dripping and Player steps were playing metallic ground sound while running on mud ground"

_____

Did you like the Artistic Theme of the game and felt it matched a horror style genre? _____

Did you find the art, 3d models, textures, colours and world to be consistent? _____

Do you have any suggestions to add to the horror style atmosphere/theme of the game?

_____

Sound:

Did you enjoy the audio and find it enhanced the feel of the game?

_____

Were there any sounds that you felt were used too much and got annoying?

Example: "Background howling was too frequent, got very annoying very quickly"

_____

Were there any sounds you felt were too loud proportionately to the rest of the game, or any that were too quiet?

Example: "Hounds were too quiet, footsteps were too loud"

_____

Did you feel anything in the game which didn't already have sound needed it?

Example: "doors didn't squeak when you open them".

_____

Bugs:

Did you encounter any bugs or glitches, or anything you felt was an unintended aspect of the game?

If so, what was the bug and how did it occur?

Example " Dogs couldn't hurt me while I was holding jump"

"I could run through the walls on the left side of the starting prison"

"There were invisible walls in some parts of the map"

_____

_____

Do you have any other feedback you would like to give?

_____

_____

_____

11. NOTES TO THE MARKER OF THIS DOCUMENT

This Document illustrates the full implementation of the game. Its formatted in a manner that illustrates how to construct the full design. It was written in such a way that a development team could use it as a reference when building the full game.

We have chosen the following assessment criteria

1. AS A TEAM, DEVELOP A GAME DESIGN DOCUMENT.10PTS
2. A. GAME WORLD 10PTS
   - C. STORY 10PTS
   - D. USER INTERFACE 5PTS
   - E. GAMEPLAY 10PTS
   - F. GAME MECHANICS 15 PTS
   - G. LEVEL DESIGN 15PTS (LEVEL 1)
3. TESTING PLAN 10PTS

GROUP CONTRIBUTIONS TO THIS DOCUMENT

Section	Lead Author	Contributor
1.Cut Scenes	Brad.	
2.Level	Brad.	Faraz
3.Hounds	Tom.	Brad. Faraz
4.Items	Tom.	Faraz. Brad.
5.Obstacles	Tom.	Brad.
6.Player	Brad.	
7.Interaction & Feedback	Faraz	
8.Challenge and Strategies	Faraz	Tom.
9.Balancing issues	Brad.	Tom.
10.Testing Plan	Faraz	Tom.
Formatting & Managing Design Doc	Brad	Faraz, Tom

12. REFERENCES

LEVEL: ASSETS

Standard Textures available in Sketchup

Unity Standard Assets Pack from asset store

Stone Wall Stock photo used for Shed and other buildings http://www.123rf.com/photo_6501506_seamless-tileable-stonewall-background.html

Night Sky 360 image used for SkyBox https://upload.wikimedia.org/wikipedia/commons/thumb/1/18/Night_sky_time_lapse.webm/3840px--Night_sky_time_lapse.webm.jpg

Stone Brick Texture Used for Prison http://previews.123rf.com/images/divaler/divaler1202/divaler120200010/12501930-Stone-brick-wall-in-gray-scale-Stock-Photo-texture.jpg

Stone floor texture used for prison http://img02.deviantart.net/c270/i/2004/118/2/5/stone_floor.png

Fluoro Light texture used for fluoro lights http://www.ledssuperbright.com/images/29e0_12.jpg

Metal Floo texture used for Lab section of prison http://67.media.tumblr.com/42b32ed3931c2384112821511f78f653/tumblr_n7jjrwlypM1tf1ov0o1_1280.jpg

Water drip sound loop used for prison http://soundbible.com/380-Spooky-Water-Drops.html

LEVEL: TUTORIALS FOLLOWED

Sketchup tutorial videos https://www.youtube.com/watch?v=YGdLwE4Ue-c&list=PLMK2xMz5H5ZvY28MrKdFPmNJbODwLgSqj

Unity Forums https://unity3d.com/community

Unity Manual https://docs.unity3d.com/Manual/index.html

Unity Tutorials https://unity3d.com/learn/tutorials

Unity Skybox tutorial video https://www.youtube.com/watch?v=F93wzC-JzDc

Unity Reflective Surface Tutorial https://www.youtube.com/watch?v=PhTMl372sQ0

Unity scripting tutorials https://unity3d.com/learn/tutorials/topics/scripting

UI AND ITEM RESOURCES:

Door clipart http://images.clipartpanda.com/open-door-clipart-7112showing.jpg

Rock: http://weknowyourdreams.com/image.php?pic=/images/rock/rock-08.jpg

Bone: https://www.sciencenews.org/sites/default/files/main/articles/bb_Sima3.jpg

HOUND ASSETS (ONLY TEXTURES DOWNLOADED, 3D MODEL AND ANIMATION MADE FROM SCRATCH):

Fur Texture: http://www.myfreetextures.com/wp-content/uploads/2014/10/white-fur-texture.jpg

Claws/Teeth: http://pre11.deviantart.net/7205/th/pre/i/2014/042/b/5/seamless_bone_texture_by_siberiancrab-d6hhdqm.png

Fur Opacity Map: http://render.ru/books/show_book.php?book_id=1181

HOUND ASSET TUTORIALS:

3DS MAX: https://www.youtube.com/watch?v=RKxhHfS4R7M

AI & NAVIGATION MESH TUTORIALS:

Unity Official navmesh tutorial https://www.youtube.com/watch?v=mP7ulMu5UkU

Benkis Ai Follow and shoot https://www.youtube.com/watch?v=188SMf9f6UY

Unity Manual https://docs.unity3d.com/Manual/Navigation.html

3d AI Nav https://www.binpress.com/tutorial/unity3d-ai-navmesh-navigation/119