

SUBMERGED

GAME DESIGN DOCUMENT

OVERVIEW:

The gameplay is a juggling act of trying to remain quiet whilst also making it out within the allotted time.

The player begins by falling off the side of a cliff and plummeting into a lake below. Instantly the player emerges from the water to find themselves underground in an abandoned mine/cave setting.

The player then has to escape before a fast moving entity “the Stalker” manages to kill them.

The cave setting and limited use of light will create a atmosphere of tension. This tension will build until a climactic escape out of the caves and down a creek until finally the player reaches the edge of a cliff and collapses back into the lake below, starting the cycle again.

TARGET PLATFORM / MINIMUM HARDWARE

The game is being made for PC and PS4 using Unreal Engine as our development tool. The game will hopefully be playable on low to mid range PCs.

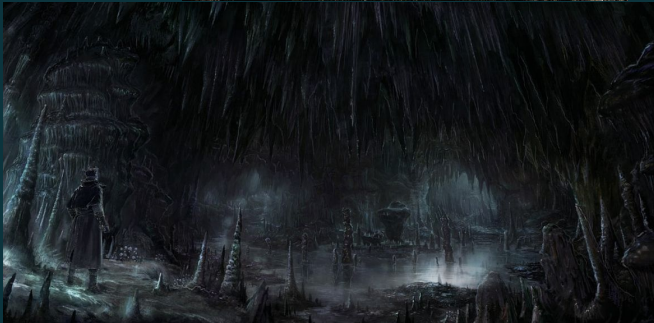
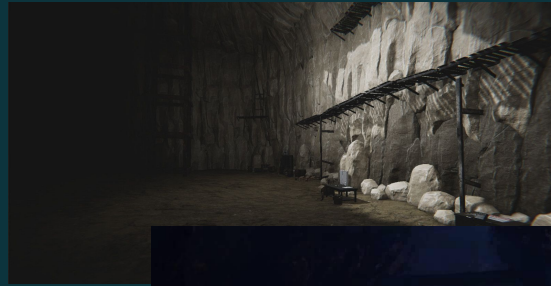
VISUAL STYLE:

The game will utilize a realistic look to help immerse the player in the setting. The reason for making this decision is so that it will hopefully be more believable for the player if they can easily recognize the environment and relate to it and know that this potentially is a real place in the world. Because of this believability factor it will help add to the fear of the game.



Real Life References

Game Inspiration



Until Dawn, Tales of Escape, Soma, Uncharted 4, Outlast 2, The Vanishing of Ethan Carter, Resident Evil: Remake, Resident Evil 7: Biohazard, Until Dawn, Bloodborne

Environment Concepts

Exterior area: Entrance

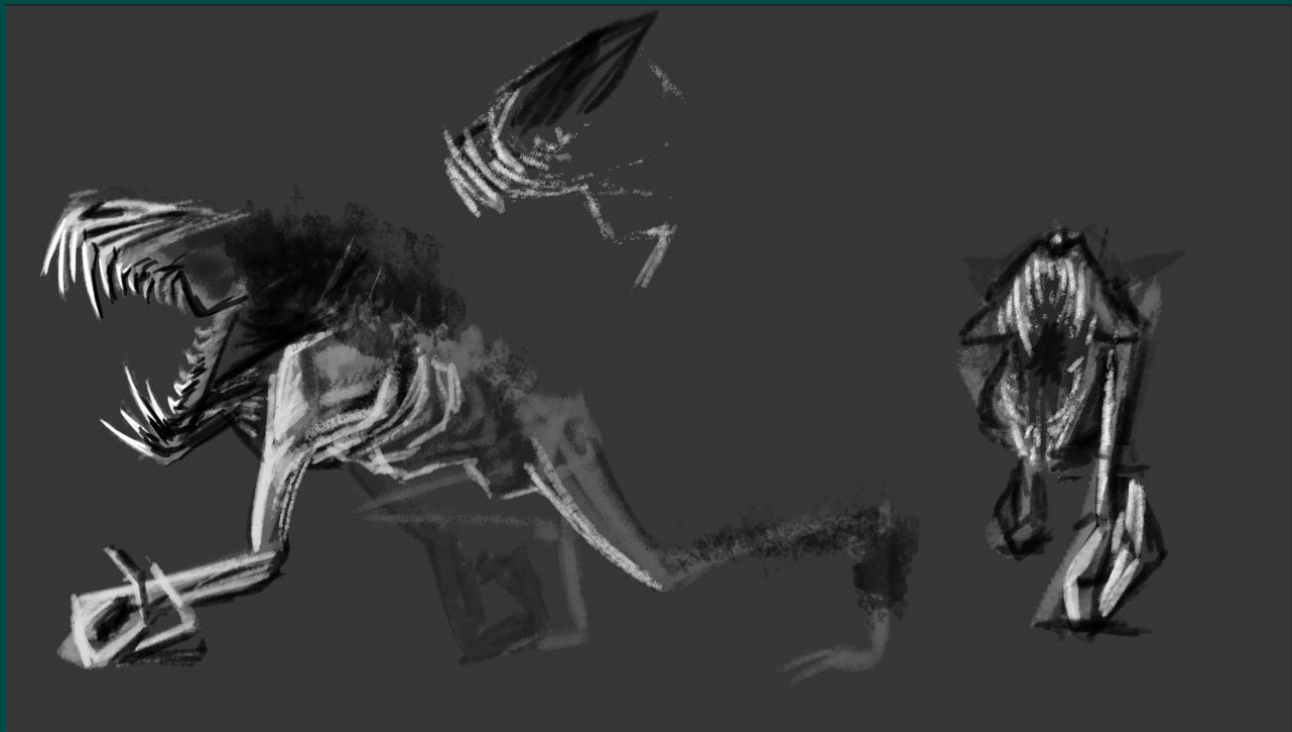


Interior area: Starting Point





The Stalker 2D Design



AUDIO STYLE:

The game will utilise a lot of ambience but will otherwise remain relatively silent. This is because of the enemy's reliance on the noise the player makes. The player will be more fearful of their noises when they seem louder compared to the ambience of the game.

Most of the sounds the player hears will have a reverb effect to simulate the echo of the cave.

STARTING OUT

GAME START - MAIN MENU:

The game will take a minimal approach when loading up the game. The black screen will slowly fade into the main menu.

IN-GAME HUD AND MENUS:

- Button prompts
- Pause Menu

UI

MAIN MENU

Options can be easily selected with the mouse cursor.

A simplistic menu with minimal options.

- Play Game
- Options
- Exit Game

Behind the options will be ???

- The starting area of the game? (With flowing water and sound effects)
- A still frame from the opening cutscene (Upon hitting start game play cutscene from this frame?)
- A flat colour background.



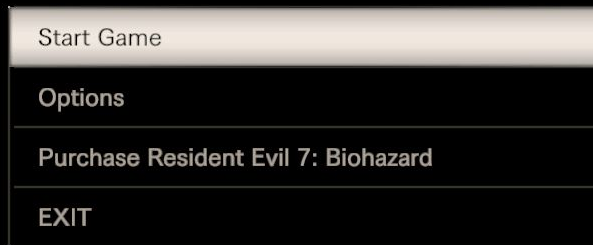
Start Game

Options

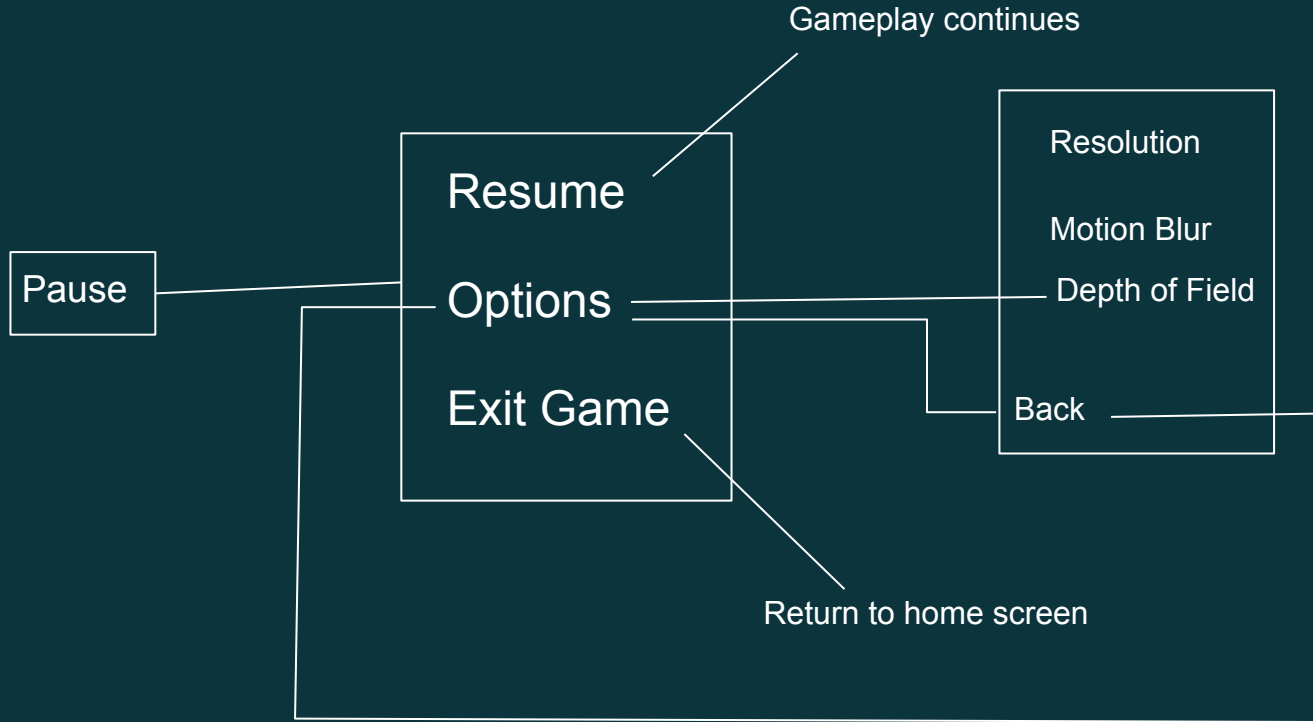
EXIT

RESIDENT EVIL 7[™] Teaser

BEGINNING HOUR



IN-GAME OPTIONS MENU:



In-Game HUD:

There will be no in-game HUD, all information will be displayed when the player looks down at the character's lower body.

- Number of Rocks can be viewed in an open bag.
- How injured the player is can be seen through scratches on the characters body and the character limping.
- The Pick-Ups required for the Good Ending of the game.

GAME OVER SCREEN:

Once the allocated 7-10 minutes has ended the Stalker will grab the player from behind, claw at their eyes and kill them. At that point the screen will fade back to black and the player will be given an option to Restart or Quit.

LEVELS:

There is only one level in the game. This level consists of a mine that leads up into a forested creek.

GAMEPLAY:

The game begins as a game of cat and mouse between the player and the Stalker. The player gradually learns the ropes as they explore the mines.

As the game progresses they will be funneled into smaller areas where the Stalker will be more dangerous.

The player will then have to reach the exit and crawl through before entering the finale.

The finale consists of the player running as fast as they can down a creek before reaching either the good end or returning back to the start of the game.

MECHANICS

THE PLAYER:

The player is able to; crouch to lower their noise and speed, sprint to increase their speed and noise, jump over obstacles, attack the Stalker and destroy barriers.

When the player is hit by the Stalker the player's speed will be decreased slightly. This will increase the pressure placed upon them by the time limit.

ROCKS:

Rocks can be collected throughout the level and thrown to distract the Stalker.

The number of rocks the Player has can be seen by looking down into the open bag the character wears.

PICKAXE:

A pickaxe can be found which is then used to either attack the Stalker or break through barriers.

Hitting the Stalker wounds it, causing it to move slower but increases its aggression towards the player. The player cannot kill the Stalker and there is a limit to the amount the Stalker can be slowed.

BARRIERS:

These impede paths until the Player is able to find the Pickaxe and break through.

Breaking a barrier creates noise.

MACHINERY - LIGHTS:

The Player can take time to fix and operate pieces of machinery. When fixed these cause large floodlights to turn on, covering an area in light. The Stalker will then be unable to enter the area.

The process of fixing the machinery creates noise.

Position these in high traffic areas to allow for easier escape from the Stalker.

WATER:

When standing in water the Player's innate noise is increased. Every mode of movement creates a louder noise when in the water.

NOISE:

This affects the radius in which the Stalker will be able to locate the Player.

- Crouch-walking.
 - Crouch walking in water.
 - Crouch-sprinting.
 - Crouch-sprinting in water.
 - Walking.
 - Walking in water.
 - Sprinting.
 - Sprinting in water.
-
- Breaking barriers.
 - Fixing machinery.

THE STALKER:

The Stalker roams through the level aimlessly until it sees or hears the Player. It will then attempt to attack the Player from behind.

The Stalker will flee if looked at.

If hit with the pickaxe the Stalker will lose some of its speed but become increasingly more aggressive towards the player with each hit.

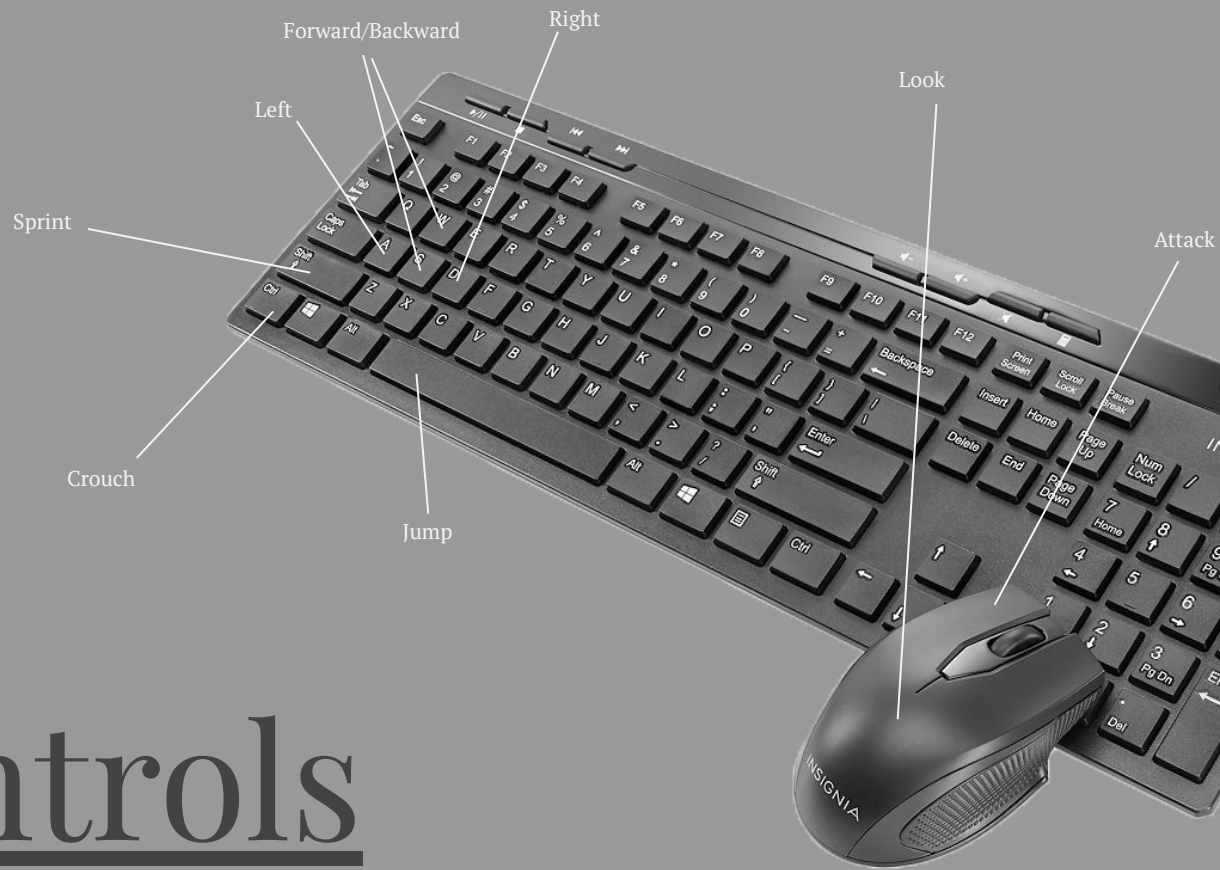
GOOD ENDING ITEMS:

Five items can be collected throughout the caves. If all are successfully collected and the Player reaches the end of the level, then the Player wins the game.

- Rope
- Grapple
- Harness
- Carabiner

CONTROLS:

- WASD / Left Stick = Movement
- Shift / L2 = Sprint
- Ctrl / L3 = Crouch
- Spacebar / X = Jump
- Left Click / R2 = Attack
- Right Click / L1 = Throw Rock



Controls

WINNING THE MATCH:

If the player can gather all four pick-up items within the mines and then manage to escape down the creek the Player will be able to break the loop and win the game.

CHALLENGES OF IMPORTANCE:

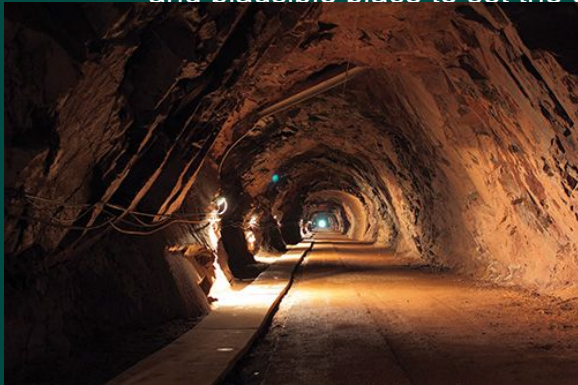
- Finding the Pickaxe. Finding this will give the Player more options in navigating the mine but also places the Player in a dead-end where they can be potentially trapped by the monster.

Assets

Visual Style (Focus on Location)

In consideration to the desired visual style/layout of the game, the inspiration for the location would need to be; a limestone cave, where deer are common, where mining projects can occur, in a forest area and near a creek/lake type feature.

Both North America and Canada are suitable locations for the requirements, but from further research into 'Block Caving' (a process in which tunnels are made to undercut ore deposits, see Canadian Mining Journal, 2018), I have found block caving is currently being implemented in some areas of Canada. Ultimately, Canada is the most appropriate and plausible place to set the game in (and draw inspiration from).



Assets

Assets- Pickups

Pickaxe- Mattock, equipped with flat blade side and pointed traditional pick. The majority of the pick's detail would be captured within the texture, giving definition to the material of the pick and the shape (texture applied in the future).

Rocks (Thrown to distract Monster)- More compact shape than the environmental boulders (also scaled to player size/hand) and should focus around limestone 'chipping style' rocks.

Wooden Boards- Placed to board up certain pathways, more gnarled/rustic planks, due to weathering of age and water (again, most detail would be in the texture, but the shape of the model should add to the weathered style)

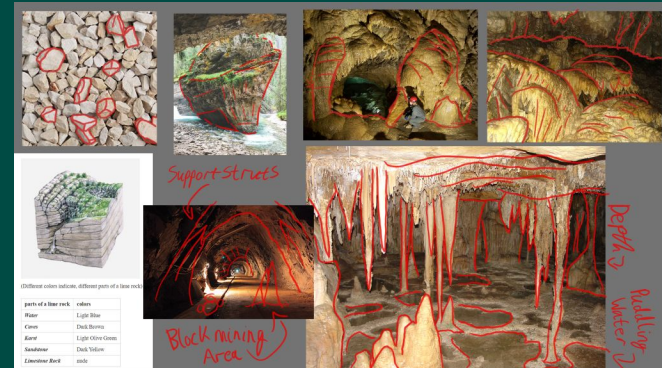


Assets

Assets- Environment

- Cave Entrance- Asset transition from Creek (plant/nature) to rocky cave theme
- Fern plants to transition into the cave
- Rock formations appropriate to cave type (stalactites, stalagmites, smooth limestone, jagged hard stone) with varying roughness qualities
- Moss textured on stones (near mouth of cave)
- Possibly bioluminescent plant/fungus species (blue/green glow emitters)

Focusing on a variation of rock/boulder models, to allow the level designers to add more structure and diversity to the level map. More decorative assets (stalagmites) wouldn't be integral at this stage but would help 'break up' and form a good aesthetic level layout. Organic foliage may also be unnecessary to the level creation at this stage, due to it being more appropriate to the



Player Character

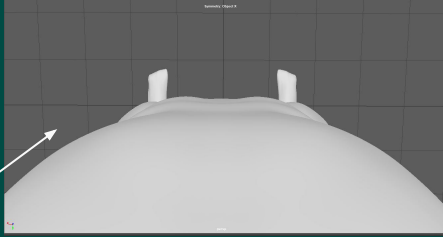
Our main character will be a miner, set in a modern setting. This choice was made because the player is able to collect and use equipment and it made more sense that our character would have some knowledge on how to use these tools prior to them waking up in the cave.

Main thing the player will see of the character will be the view from first person, want to be able to add the function of looking down and seeing how many rocks they have left and what equipment they've already collected to avoid having a crowded HUD.

2D Main Character Designs

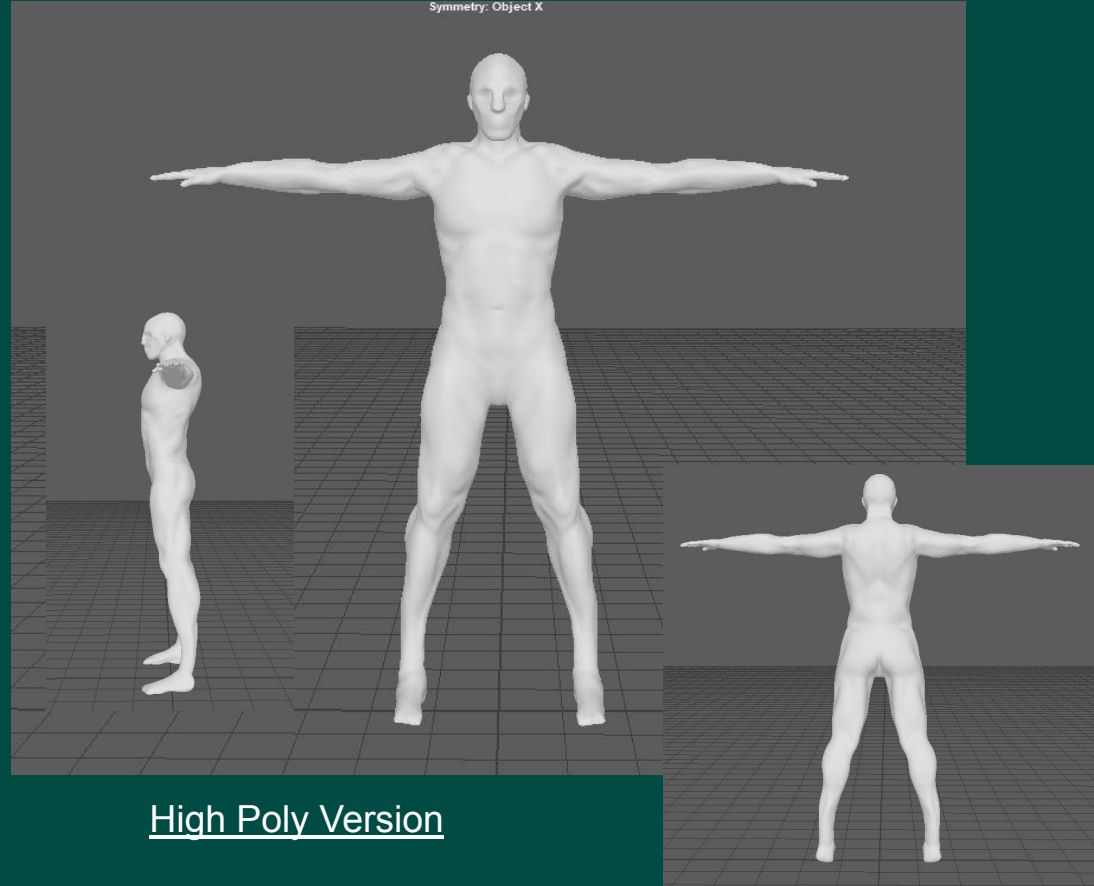
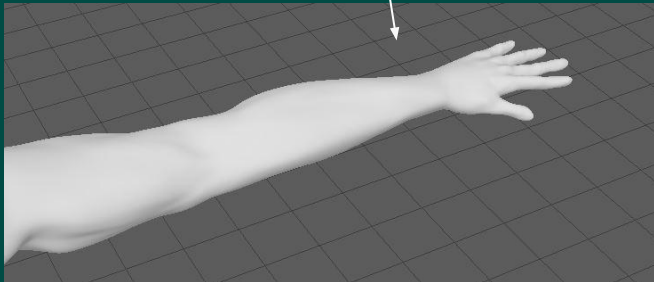


3D Main Character



Rough idea of the view
looking down at body

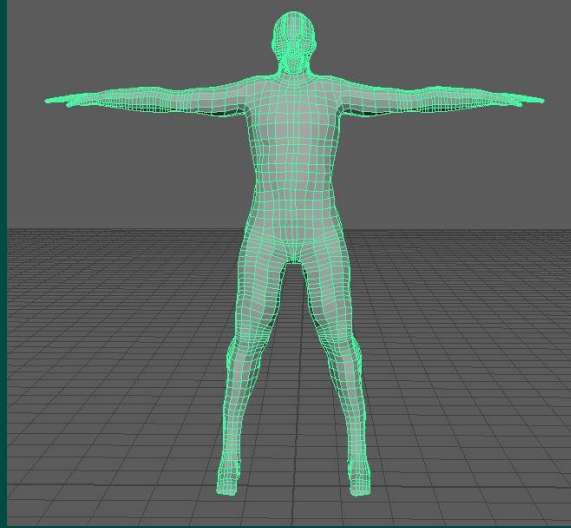
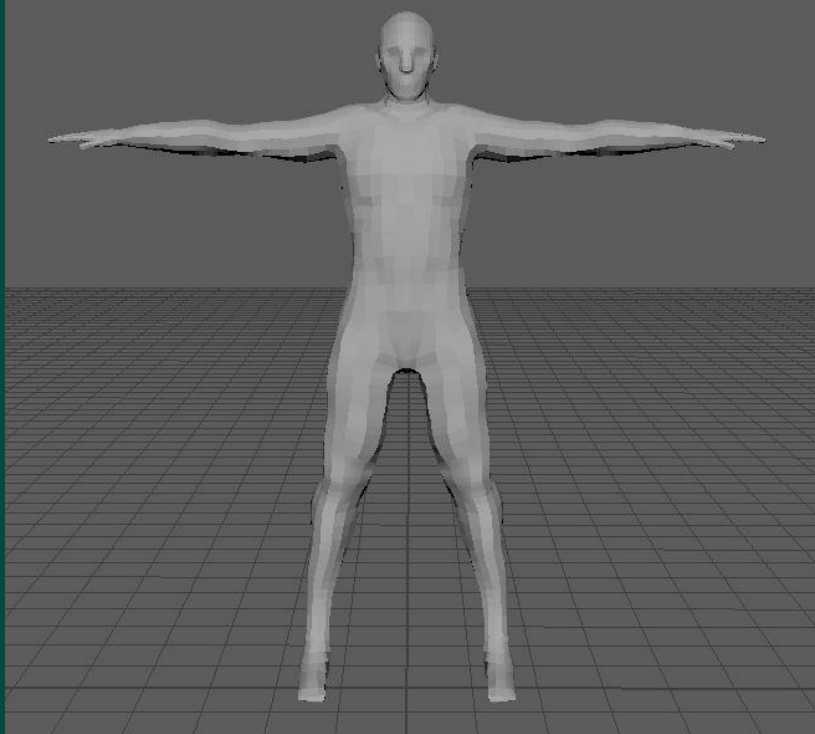
Focus as much as possible on arms
and hands as that's primarily what
the player will see



High Poly Version

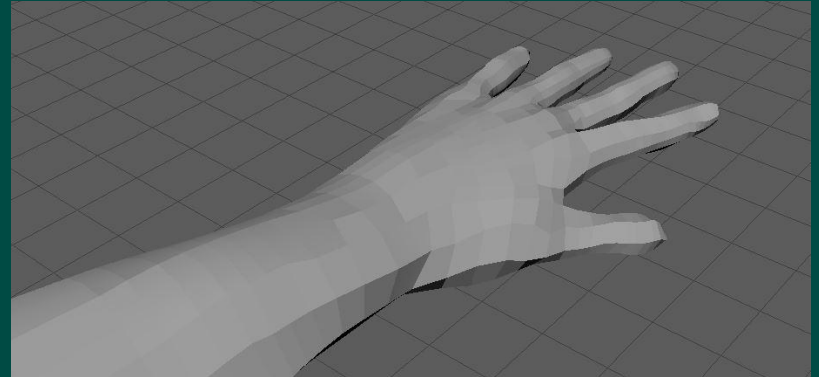
- base body for character

3D Main Character



Lower Poly
(retopologised)

Would need to
create a normal map
to help bring back
the details from the
higher resolution
character model



FENN INGRAM

SUBMERGED PRODUCTION DIARY
(40 hours and 15 minutes of active working
recorded)

3/10/2019

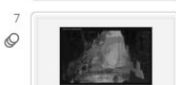
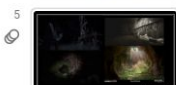
Generated an initial idea after receiving the Brief. A player in a wooded ravine with a stalker type enemy who grabs the players eyes from behind.

4/10/2019

Combined the locations of my initial idea and a peer's. The setting of our combined idea is a cave system that leads up and out into a ravine. This way we can use the water of the ravine to guide the player out of the caves.

5/10/2019

Developed the idea transferring the information into a Google Slides presentation.



Submerged

Elly & Fenn

7/10/2019

Continued to develop the idea, designing mechanics to fit the setting and enemy.

8/10/2019 (5 hours)

Gathered reference images and added them to the presentation. Finalised the initial idea. The stalker being a fast moving entity that attacks the player from behind. The player can move at different speeds, each creating noise. There are barriers blocking certain paths that can be destroyed using a pickaxe. The story is now of the player stuck in a loop, escaping and falling back into the caves.

10/10/2019

Presented the idea to the class and received interesting feedback. Lots of ideas about the loop and how the monster could learn from each previous loop.

11/10/2019

Using the Ironbelly template for a GDD we took the prompts and added them to a Google Slides format.



- 1 SUBMERGED
GAME DESIGN DOCUMENT
- 2 OVERVIEW
- 3 OVERVIEW
- 4 TARGET PLATFORM / DESIRED HARDWARE
- 5 TARGET PLATFORM / DESIRED HARDWARE
- 6 VISUAL STYLE
- 7 VISUAL STYLE
- 8

SUBMERGED

GAME DESIGN DOCUMENT

Click to add speaker notes



12/10/2019 (1 ½ hours)

Began to fill in the GDD with the information from the Presentation. Created headers for the mechanics of the game with a basic description for each. Removed unneeded template sections such as “Multiplayer” prompts.

41

THE PLAYER

The player is able to increase the Player's value and speed, right to increase their speed and value, jump over obstacles, which the Station and Stationer observe.

When the player is hit by the Station the player's speed will be decreased slightly. This will increase the player's speed again, leaving the track.

42

PICKUPS

A pickup can be found which is seen just as the player about the Station or about the Stationer.

When the Stationer observes a pickup, the Stationer will increase the aggression towards the player. The player cannot attack the Stationer and there is a limit to the amount the Stationer can increase.

43

BARRIERS

When a player gets into the Player's station, it is able to find the "Pickup" and break through. Breaks go to the stationer's table.

44

MACHINERY - LIGHTS

The Player can also find the "Machinery" (which is the "Stationer's" table) and break through. This will increase the aggression towards the player. The Stationer will then increase the aggression towards the player.

The player will find the machinery's position table.

Player's move in light (off) to see to allow for faster escape from the Station.

45

WATER

When standing in water the Player's value will be increased. Many kinds of equipment are able to be used to increase the value.

46

NOISE

The player's noise can be heard by the Stationer.

- sound (noise)
- sound (noise)
- sound (noise)
- sound (noise)
- sound (noise)
- sound (noise)
- sound (noise)
- sound (noise)
- sound (noise)

47

THE STALKER

The Stationer wants to find the best way to find the Player's station. The Stationer will find the Player's station.

The Stationer will find the Player's station.

It will also find the Stationer's station (if the player is not seen).

Increasing the aggression towards the player will increase the aggression towards the player.

13/10/2019 (½ hour)

Continued to fill in GDD with bullet point ideas.

17/10/2019 (4 hours)

Began to work with one of the Animation students on the cinematics for the game, giving him a basic idea of what would be required.

Looked at material recommended by my lecturer.

Added more details to the GDD and shared it with the animator.

Refamiliarized myself with Unreal Engine by looking over code for similar mechanics from past projects I have created.

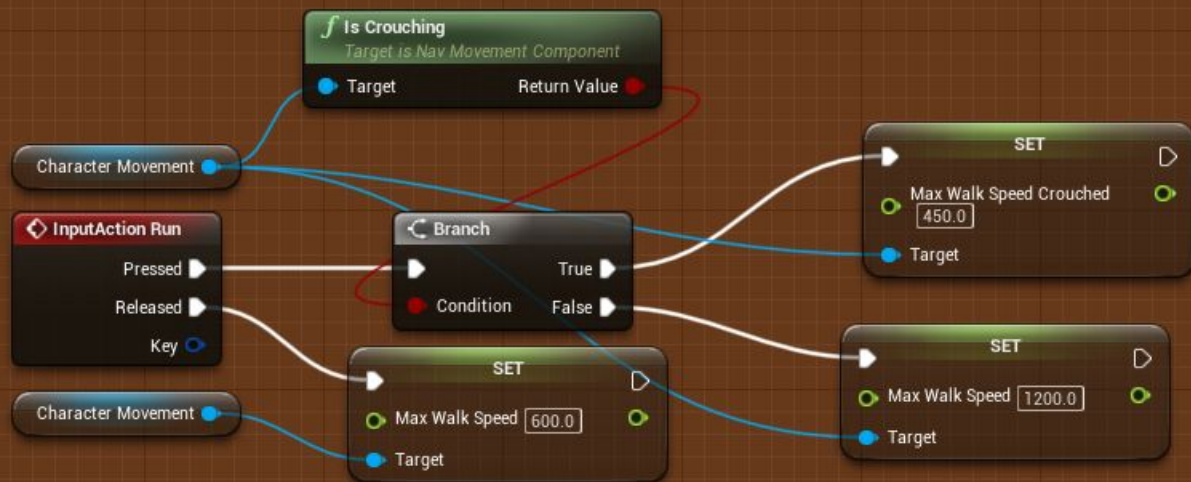
18/10/2019 (5 hours)

Coded a series of mechanics allowing the player to sprint, crouch and crouch-sprint. The code for these are not refined. I believe I can do better.

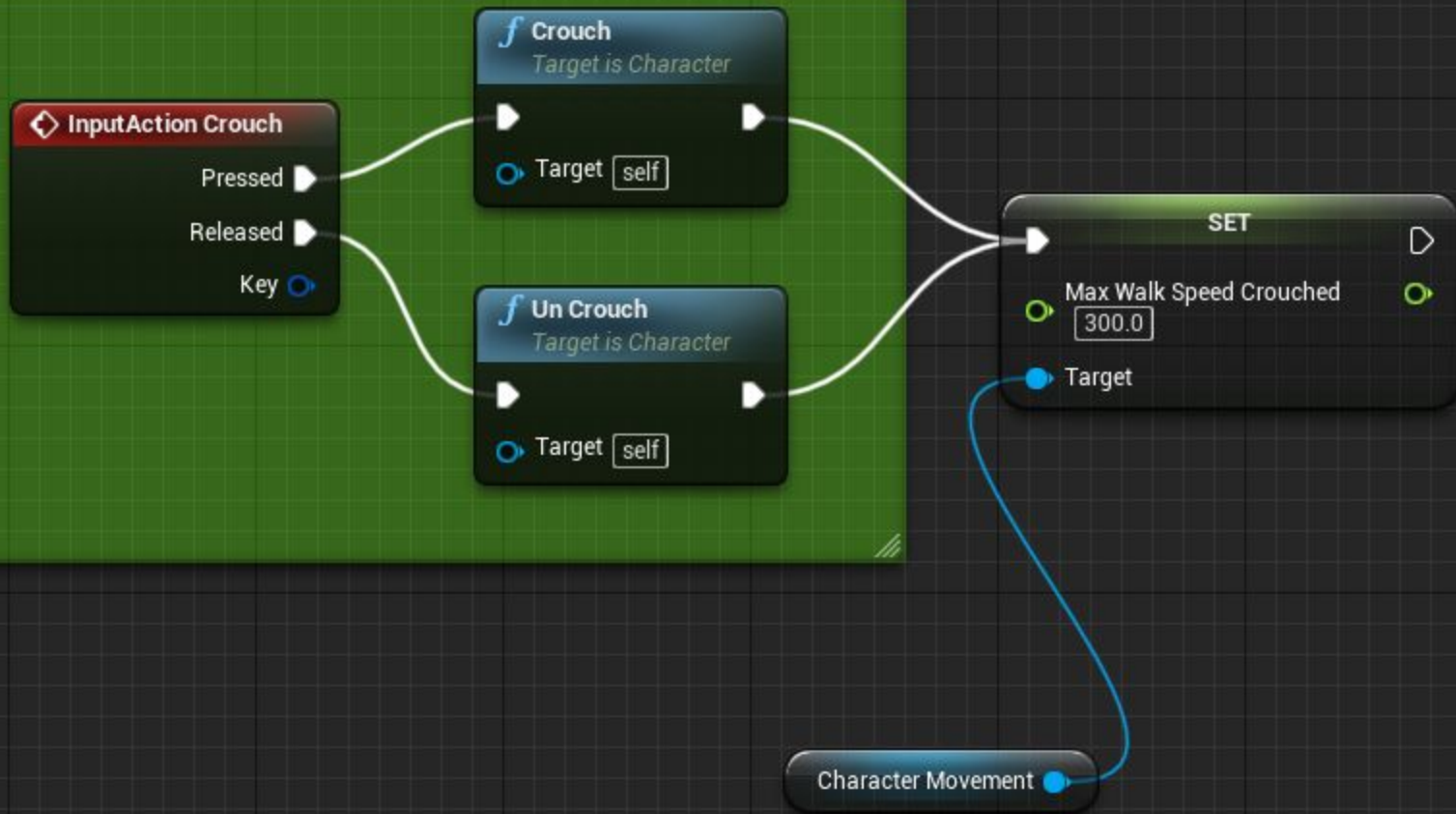
Created a project file for the game and created an environment design within that using premade assets.

Made a first draft of the script for the cutscenes in the game. These consist of bullet-points only.

Change Movement Mode



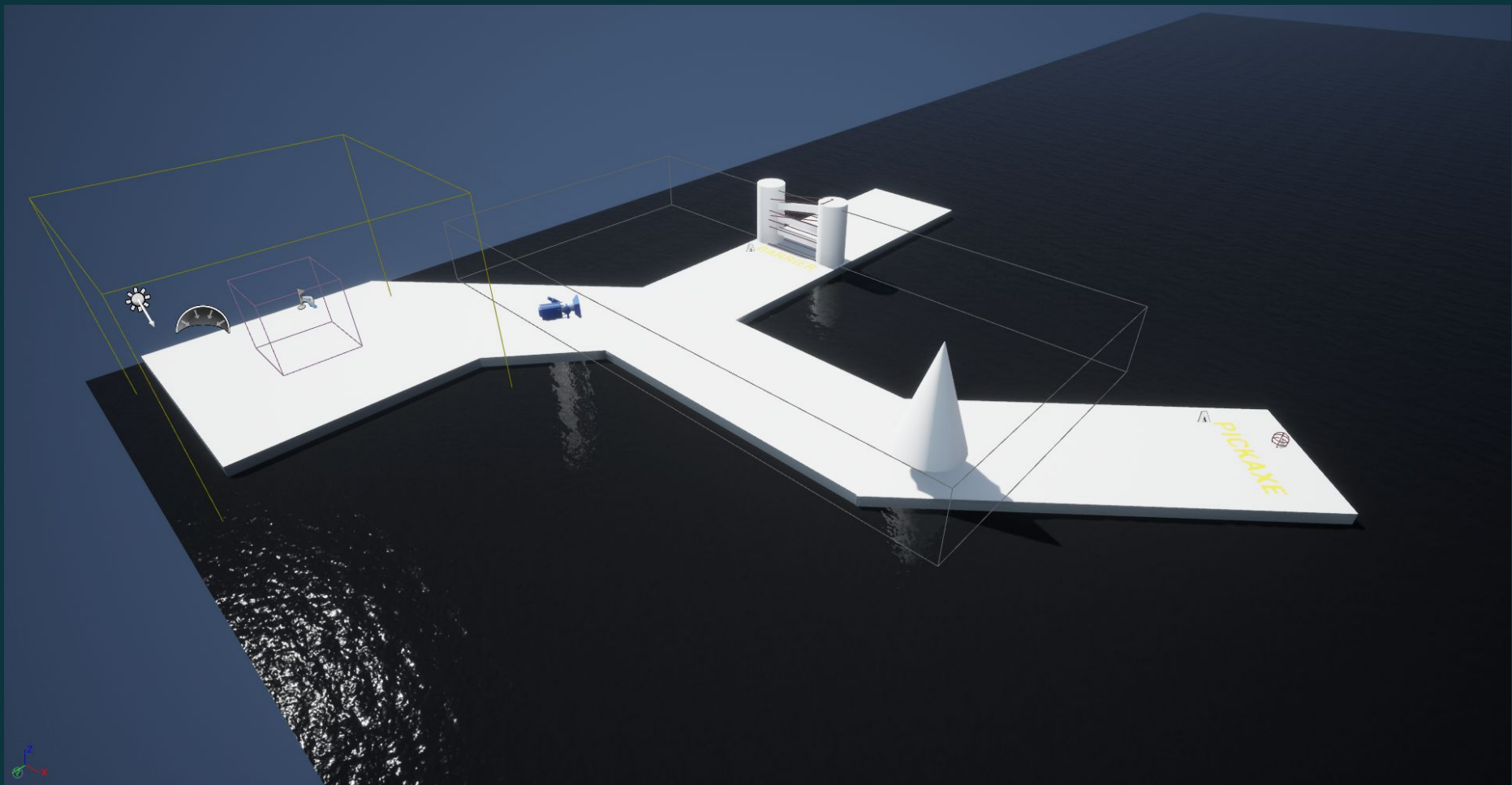
Crouch

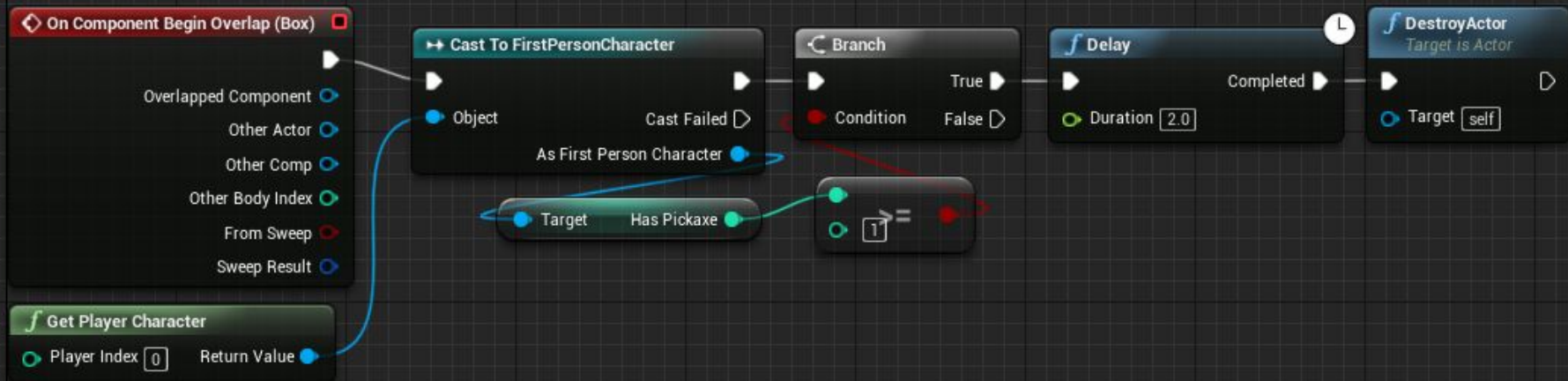




21/10/2019 (2 ½ hours)

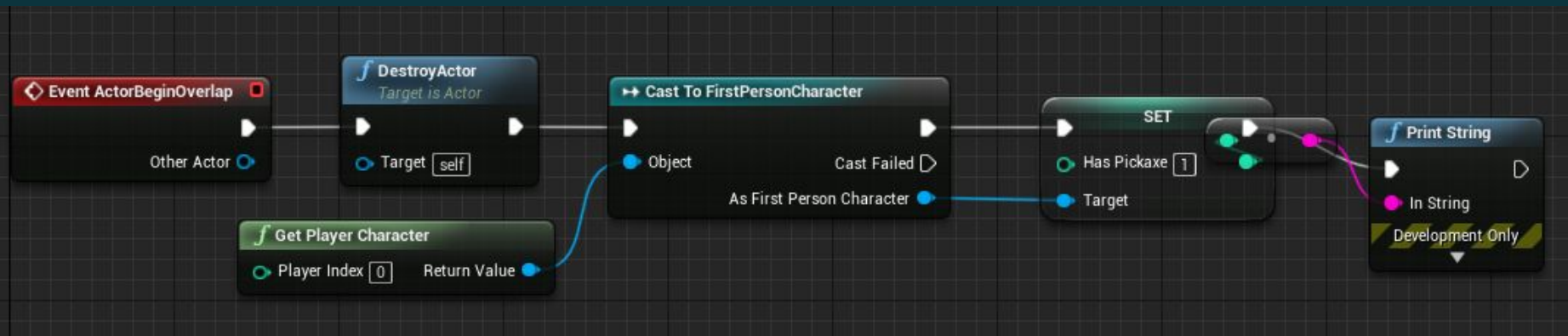
Created a test level in the project for use with Mechanic design and playtesting.
Created the basic framework of the barrier and pickaxe mechanics. Three boards make up the barrier. Each are destroyed at different times and can only be destroyed if the player has picked up the Pickaxe.





22/10/2019 (½ hour)

Added to the Pickaxe framework. The pickaxe placeholder is now attached to the player when picked up and is visible through the HUD.



24/10/2019 - (2 hours)

Attempted to solve problems with Pawn Sensing and AI movement with no success.

Created a Discord Server for the production team and allocated them roles in that server. They now have department chats to discuss with members of their department and a general chat for the whole team to communicate.

Allocated tasks to each group member for the coming week.

f Get Player Character

Player Index Return Value

On See Pawn (PawnSensing)

Pawn

f GetActorLocation
Target is Actor

Target Return Value

AI MoveTo

Pawn

Destination

Target Actor

Acceptance Radius

Stop on Overlap ☐

On Success

On Fail

Movement Result

ROLES



2D

3D

Animation

Engine

@everyone

29/10/2019 (1 hour)

After receiving a lecture on how to properly setup an unreal engine I decided to create a new project and restart all my previous code over. I believe by doing this I will be able to improve upon all my previous code.

⌵ Action Mappings + 🗑

⌵ Jump + ✕

- Gamepad Face Button Bottom Shift ☐ Ctrl ☐ Alt ☐ Cmd ☐ ✕
- Space Bar Shift ☐ Ctrl ☐ Alt ☐ Cmd ☐ ✕

⌵ Crouch + ✕

- Gamepad Left Thumbstick Button Shift ☐ Ctrl ☐ Alt ☐ Cmd ☐ ✕
- Left Ctrl Shift ☐ Ctrl ☐ Alt ☐ Cmd ☐ ✕

⌵ Sprint + ✕

- Gamepad Left Trigger Shift ☐ Ctrl ☐ Alt ☐ Cmd ☐ ✕
- Left Shift Shift ☐ Ctrl ☐ Alt ☐ Cmd ☐ ✕

⌵ Attack + ✕

- Left Mouse Button Shift ☐ Ctrl ☐ Alt ☐ Cmd ☐ ✕
- Gamepad Right Trigger Shift ☐ Ctrl ☐ Alt ☐ Cmd ☐ ✕

⌵ Throw Rock + ✕

- Gamepad Right Shoulder Shift ☐ Ctrl ☐ Alt ☐ Cmd ☐ ✕
- Right Mouse Button Shift ☐ Ctrl ☐ Alt ☐ Cmd ☐ ✕

⌵ Axis Mappings + 🗑

⌵ Forward + ✕

- Gamepad Left Thumbstick Y-Axis Scale 1.0 ✕
- W Scale 1.0 ✕
- S Scale -1.0 ✕

⌵ Right + ✕

- Gamepad Left Thumbstick X-Axis Scale 1.0 ✕
- D Scale 1.0 ✕
- A Scale -1.0 ✕

⌵ Look Up + ✕

- Gamepad Right Thumbstick Y-Axis Scale 0.4 ✕

⌵ Look Right + ✕

- Gamepad Right Thumbstick X-Axis Scale 1.0 ✕

⌵ Mouse Up + ✕

- Mouse Y Scale -1.0 ✕

⌵ Mouse Right + ✕

- Mouse X Scale 1.0 ✕

⌵ Search Folders 🔍

⌵ Content

- ⌵ Blueprints
 - Game
 - Player
- ▷ Geometry
 - Levels
 - Maps
- ▷ Meshes

Project - Maps & Modes

Default maps, game modes and other map related settings.

Set as Default

Export...

Import...

Reset to Defaults

 These settings are saved in DefaultEngine.ini, which is currently writable.

Default Modes

Default GameMode Submerged_GameMode ◀ 🔍 +

Selected GameMode

Default Pawn Class Submerged_Character ◀ 🔍 +

HUD Class HUD ◀ 🔍 +

Player Controller Class Submerged_Character ◀ 🔍 +

Game State Class Submerged_Game_State ◀ 🔍 +

Player State Class Submerged_Player_State ◀ 🔍 +

Spectator Class SpectatorPawn ◀ 🔍 +

Global Default Server Game Mode None ◀ 🔍 + ✕

Game Mode Map Prefixes 0 Array elements + 🗑

Game Mode Class Aliases 0 Array elements + 🗑

Default Maps

Editor Startup Map  Test_Level ◀ 🔍

Game Default Map  Test_Level ◀ 🔍

Local Map Options

Transition Map  None ◀ 🔍

Server Default Map  Entry ◀ 🔍

07/11/2019 - (2 ½ hours)

Looked at the work my classmates had done over the past week and allocated new tasks accordingly.

Looked over the level design and character and environment concepts.

Fenn - Code Framework
General Maintenance

Baptiste

Tom - Level Research

Elly - Player Concepts
Environments

Hannah - Monster Concepts

Cameron - Level Whiteboxing

Karol

Storyboard

Dylan

08/11/2019 (2 hours)

Created a new movement mechanic setup connected with a float variable to more easily change character movement.

Placed prototype 3D models into the project and gave feedback to the 3D department.

Talked through cinematics and scripted events with the animation department and created a more refined script.

Variable

Variable Name

Movement Speed

Variable Type

Float

Instance Editable

☐

Blueprint Read Only

☐

Tooltip

Expose on Spawn

☐

Private

☐

Expose to Cinematics

☐

Category

Default

Slider Range

..

Value Range

..

Replication

None

Replication Condition

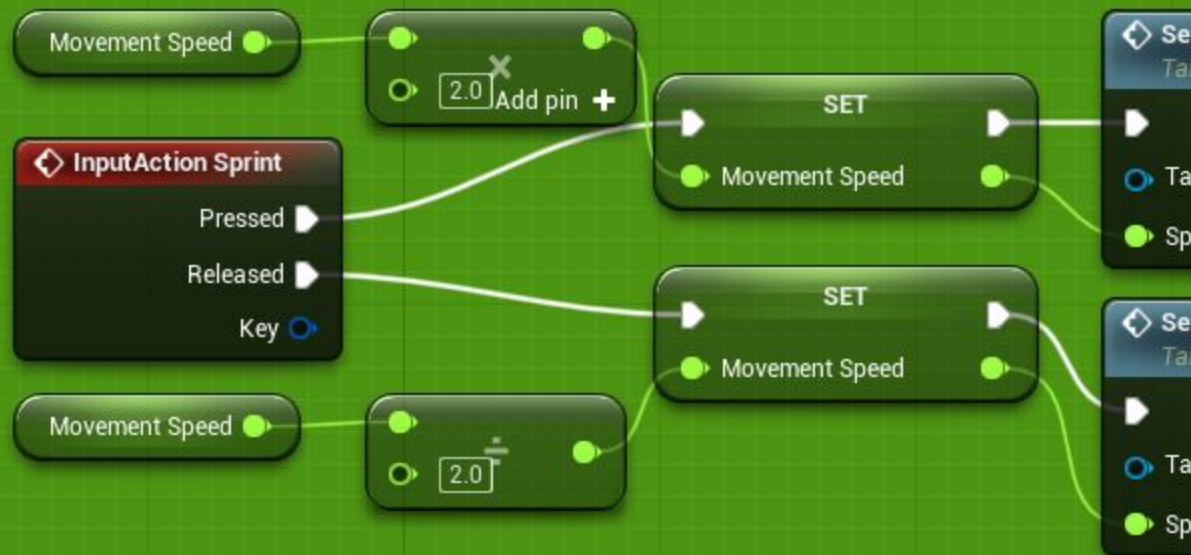
None

Default Value

Movement Speed

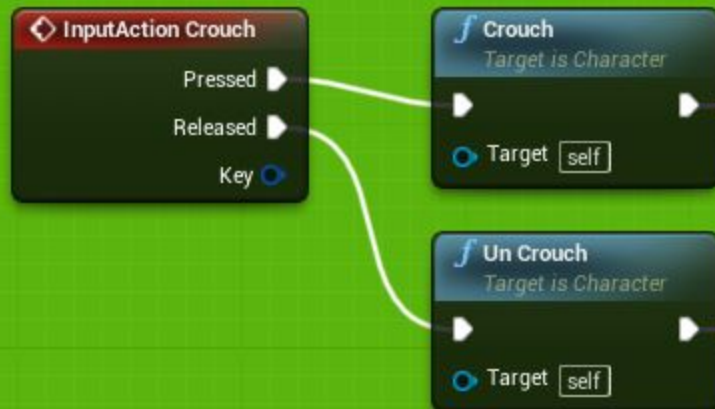
600.0

Sprint Movement Variable Change

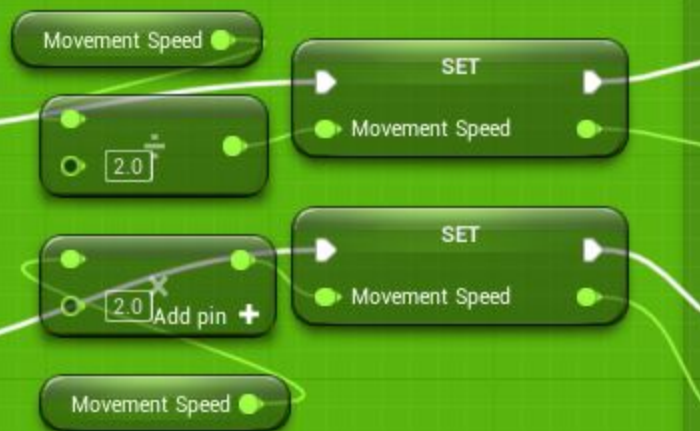


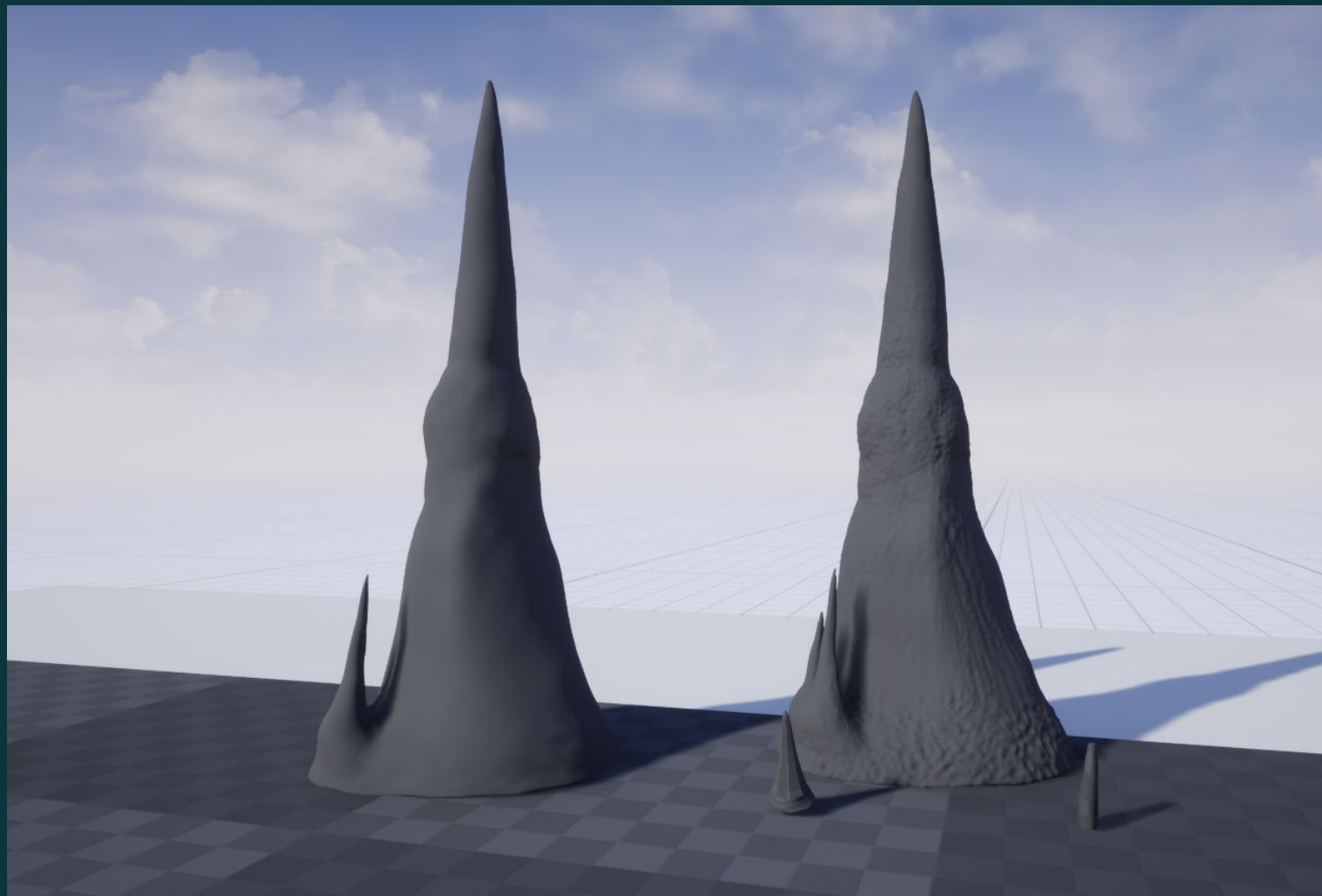
Crouch Mechanic

Crouch



Crouch Movement Variable Change





SCRIPT:

1. Intro/Outro

- Bad End
- Player searches for exit
- Flees through woods
- Player falls
- Player emerges in Cave

2. Good Ending

- Player searches for an exit.
- Player uses gathered items to form a grappling hook.
- Player climbs up onto bridge.
- Monster attacks player.
- Monster hit by truck.

3. Deer

- Deer sees Player
- Tries to flee
- Deer backs up ready to charge the player.
- Monster kills the deer

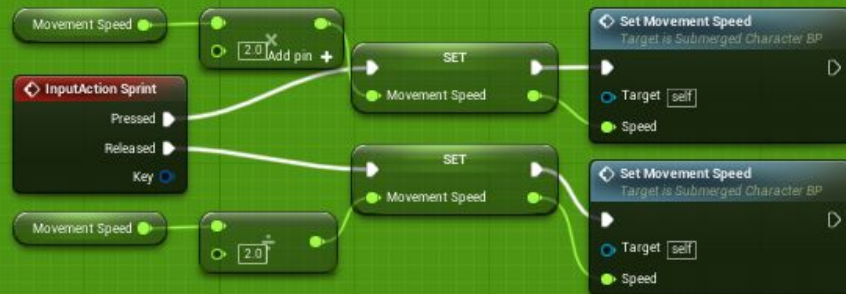
4. Monster chasing during escape

- Player crawls through a tight crawl space exiting the cave.
- Behind them the monster chases, crawling through quickly.

12/11/2019 (1 hour)

Completed the movement mechanic code. Connecting it with a custom event.

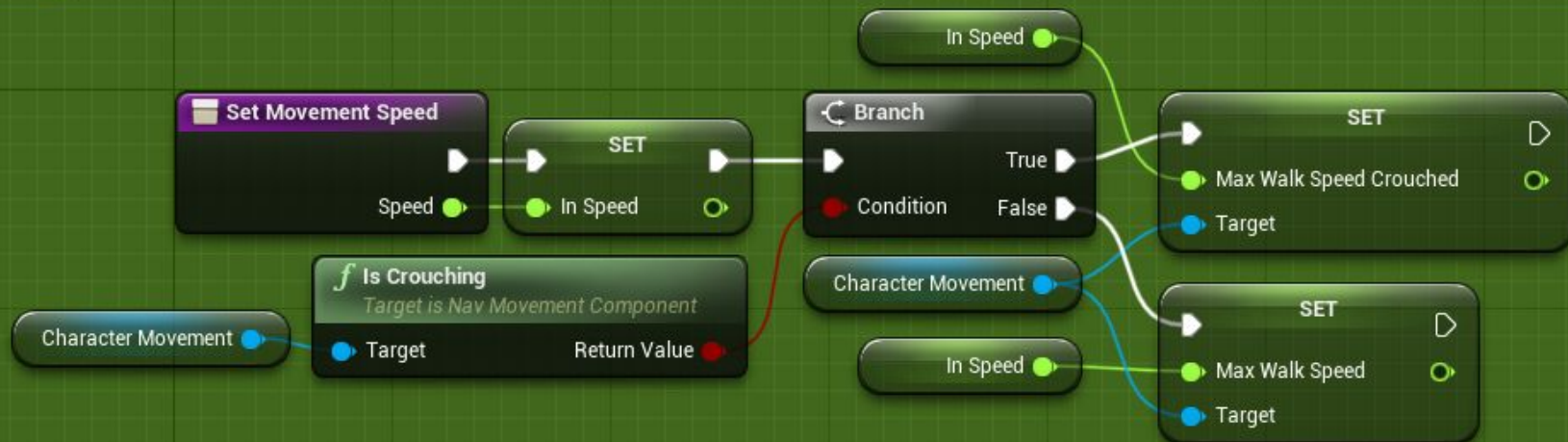
Sprint Movement Variable Change



Movement



Change Movement



15/11/2019 (4 hours)

Began to create the basic code required for the Rock Throw mechanic.
Created a PS4 build of the game and tested it on the Dev Kit.

Rock Pickup



Print String



Play Noise on Hit

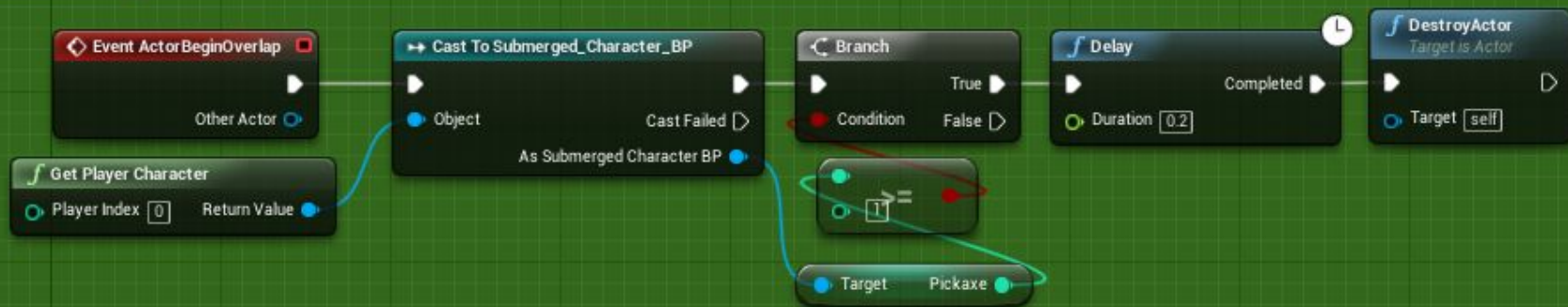


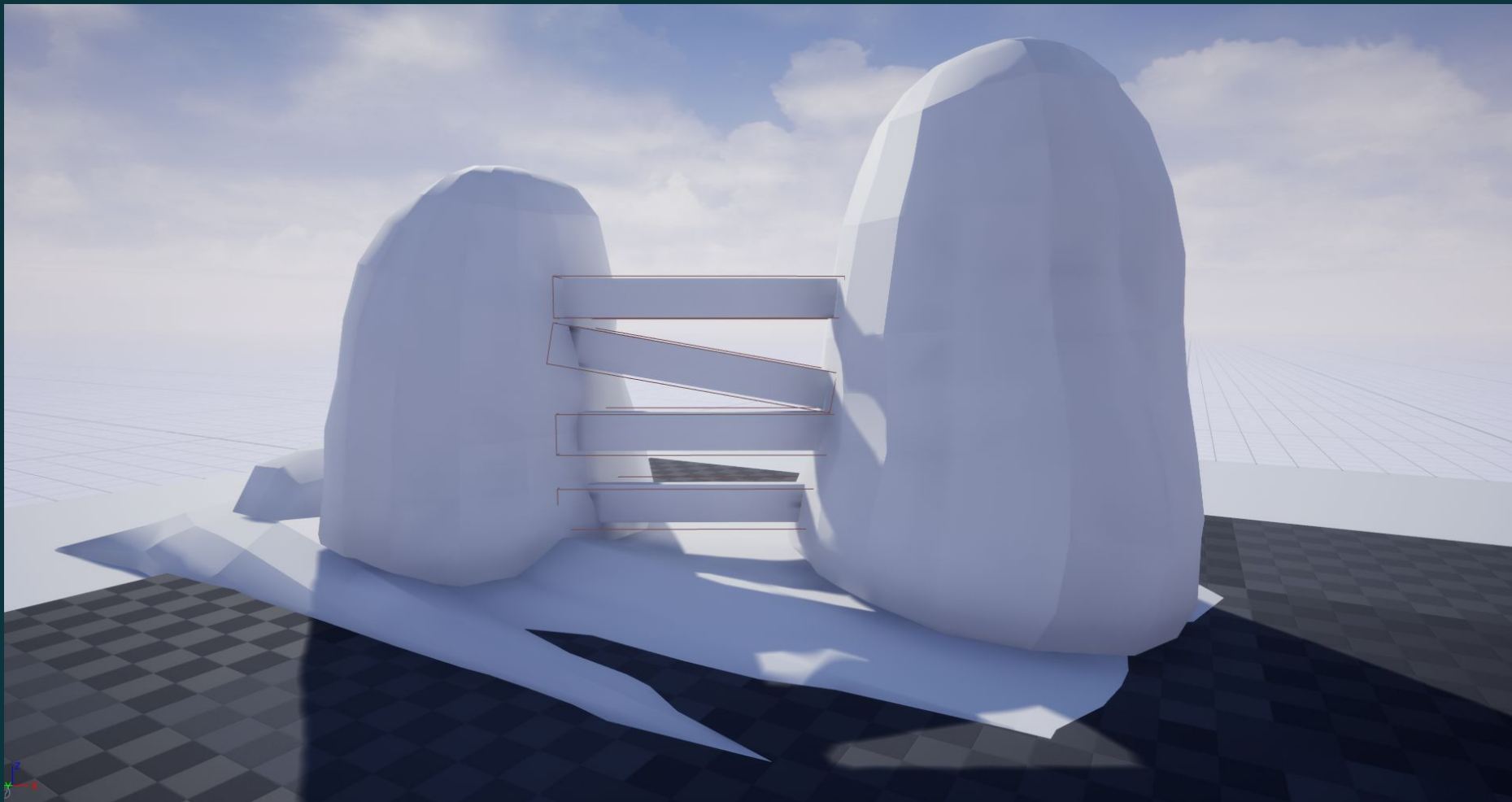
18/11/2019 (2 hours)

Continued work on the Rock Throw mechanic. Comprehensively testing different physics options.

Created the framework for the Barriers and Pickaxe mechanics using the same code as in the first project file.

Destroy Barrier





Details

Search Details

Variable

Variable Name

Pickaxe

Variable Type

Integer

Instance Editable

☐

Blueprint Read Only

☐

Tooltip

Expose on Spawn

☐

Private

☐

Expose to Cinematics

☐

Category

Default

Slider Range

..

Value Range

..

Bitmask

☐

Bitmask Enum

None

Replication

None

Replication Condition

None

Default Value

Pickaxe

0

19/11/2019 (2 ¾ hours)

Completed the Rock Throw mechanic.

Imported 3D assets and edited collision boxes and materials for all of them

Imported the level whitebox and removed extraneous code from the template my peer had used.

Checked in on teammates and provided feedback on their work.



GE02_
Cylinder007



GE02_
Cylinder008



GE02_
Cylinder009



GE02_
Cylinder010



SM_Boulder_1
Smooth
FINAL



SM_Boulder_2
Smooth
FINAL



SM_Boulder_3
Smooth
FINAL



SM_Plank_
1FINAL



SM_Plateau
Stone_1_
Smooth



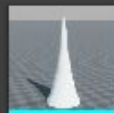
SM_Plateau
Stone_2_
Smooth



SM_Stalactite
_1DETAIL



SM_Stalactite
1DETAIL
LOWRES



SM_
Stalagmite_1
Smooth



SM_Throw
Stone_1_
Smooth

22/11/2019 (4 hours)

Used the newly imported 3D assets to begin whiteboxing the starting room of the game using the original environment design as inspiration for the design.

Renamed 3D assets in the engine to fit with naming conventions.

Updated the PS4 build of the game with the work from the previous week and added 2D concept art to the launch icon and splash screen.

Opted to halt my contribution on the game to better focus on the documentation required for submission.





SM_Mine_
Entrance



SM_Rock_
Block



SM_Rock_
Cone