

# Dark Doubles

Game Design Document - v1.0

*The devil within.*

*The devil without.*



# CONCEPT DOCUMENT

## Credits

*Version 1.0*

This document serves to give a general overview of the style and story behind the independent game “Dark Doubles.”

Dark Doubles tells the story of a man searching for ever greater power and the personal turmoil that comes with the struggle to attain it. The story will be experienced through 3<sup>rd</sup> person control and is largely set in an environment meant to mimic a fever-dream.

Game Document Author and Game Developer:      *Josh Kohn*

## Introduction

Dark Doubles falls into the genre “metroidvania,” meaning the levels are not queued but rather the game is relatively “open world” with entry to different areas being restricted by the progression of the player (items collected, skills learned, etc.).

The target player type (as proposed by Dr. Richard Bartle) will be “Explorers” who enjoy the mystery and discovery elements of game play. Dark Doubles is 3 Dimensionally formed and Gothic-Fantasy themed, heavily borrowing from two of the games that comprise the genres’ portmanteau – specifically “Metroid Prime” and “Castlevania: Symphony of the Night.”

## Game Analysis

### GAME DESCRIPTION

- Genre: • Metroidvania
- Game Elements: • Combat
  - Collection
  - Discovery
  - Dodging
  - Development
- Game Content: • Horror-Adventure
- Theme: • Fantasy
- Style: • Gothic
- Game Sequence: • Linear-Storylines
- Players: • Single Player

### GAME REFERENCE

- Game Taxonomy: • Fictional Game / Narrative
- Player Immersion: • Narrative

- Emotional
- Mental
- Mechanical (Skill Based)

- References:
- Metroid Prime – Perspective and level design
  - Castlevania: Symphony of the night – Game play and mechanics

## GAME TECHNICAL

- |                 |                          |
|-----------------|--------------------------|
| Technical Form: | • 3D graphics            |
| View:           | • 3 <sup>rd</sup> person |
| Platform:       | • PC, Mac                |
| Language:       | • C#                     |
| Device:         | • PC, Mac                |

## Game Play

On load, the player will choose between starting the game or learning the layout of the controls. After choosing the “Play” option, the story begins with the player, half man – half monster, groggily awakening in a nightmarish swamp with no memories of how he got there or who he is. Upon leaving the swamp he can see a mountain range surrounded by a river of lava, a stretch of barren hills and a dying field crawling with monsters, all of which are surrounded by a heavy storm cover and a thick layer of fog.

After exploring, the player will realize that the surrounding lava makes the mountain range inaccessible and that there is an entrance to the hills that is covered with spiderwebs too thick to break through. Eventually they will remember a spell – the wind sword. This, in conjunction with their ability to roll and slide to dodge, gives them an opportunity to fight through the field monsters who have low health but a high damage output with their ability to breath fire. Once reaching the end of the field, the player will remember that he too knows how to create fire.

Fire removes the spiderwebs that block the entrance to the hills. Inside the hills is an infestation of giant spiders. Spiders also have low health but make up for it with high speed and a small hit-box. Once reaching the end of the cave in the hills the player will face a spider twice the size of those seen already which deals more damage and has more health. Once defeated, the player will remember that he too can create spiderwebs.

Spiderwebs can create a surface on lava which the player can use to reach the mountains. Once entering the giant door at the base of the mountains, the player is faced with their final opponent – a character that looks exactly like them but has more spells and more health. Upon defeating this character the end scene will be played, revealing that the entire environment exists inside the players head and is a manifestation of his inner turmoil when choosing between right and wrong.

If at any point the players health is reduced to 0, the player resets to the last checkpoint but retains all progress made thus far. Additionally, enemies may occasionally drop items that can aid the players progression (eg. health potions, power buffs, etc.).

Hopefully, once reaching the end of the game the player will feel connected to their character and draw parallels between the actions they have made in the game and moral battles they may have struggled through in their real lives.

## Key Features

- 3 “Levels”
  - Field
  - Hills
  - Mountains
- 3 Distinct enemies
  - Infected Humanoid
  - Giant Spider
  - Mirror Image
- ~1 Hour of game play (depending on the speed of “puzzle” solutions)
- Different music setting the mood for each “level” and audio cues for each enemy and the main character
- High-poly 3D gothic graphics
- Engaging single player storyline
- Available on PC and Mac

# Design Document

## Design Guidelines

Dark Doubles should be designed in a manner that progressively and subtly reveals story elements in a way that allows the player to come to their own understanding of what the world represents. As such, restrictions should be placed on what is available to the player at each stage of the game. This includes, but is not limited to, the progression of the character being bounded by the number of story elements which have been revealed.

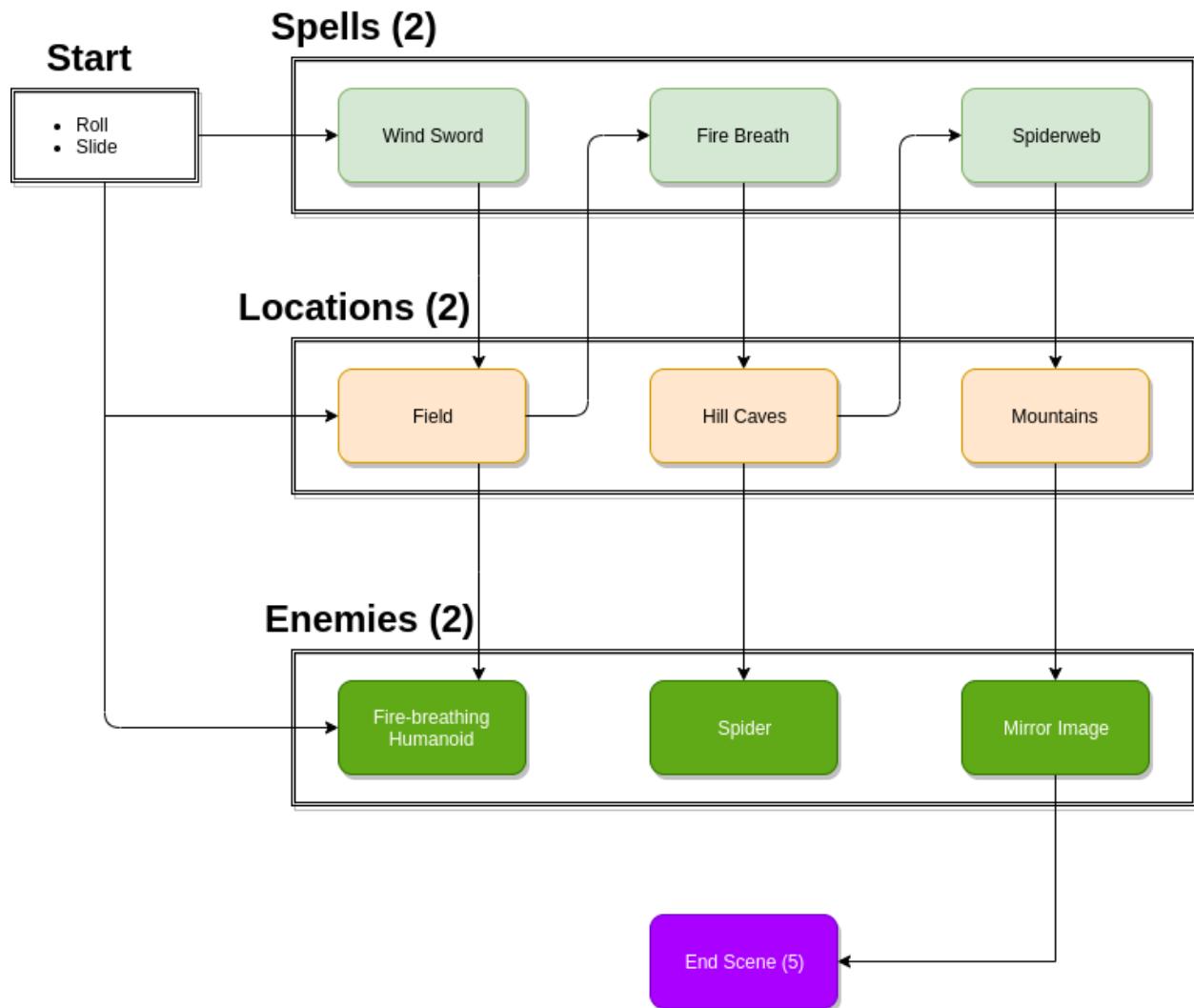
## Game Design Definitions

The Main Menu should include a definition page laying out the controls of game play. This menu is intentionally kept minimalistic in order to limit the amount of information revealed before the game begins as exploration and discovery are two of the main focuses of entertainment provided by game play.

During play, loss will occur when character health reaches 0 and victory will occur upon the health of the character's mirror image reaching 0. Player advancement will be attained through the recovery of "memories" placed strategically throughout the environment.

Player control will be handled by the keyboard for player movement and the mouse for camera control and spell casting. A minimal in-game menu will be included to handle player equipment and item triggers.

## Game Flow Chart & Level Design



## Player Elements

<u>Game Name</u>	<u>Generic Name</u>
<ul style="list-style-type: none"><li>• Roll</li><li>• Slide</li><li>• Wind Sword</li><li>• Flame Breath</li></ul>	<ul style="list-style-type: none"><li>• move_modifier_1</li><li>• move_modifier_2</li><li>• spell_1</li><li>• spell_2</li></ul>

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Spider Shot</li> </ul> | <ul style="list-style-type: none"> <li>• spell_3</li> </ul> |
|---|---|

Roll:



Slide:



Wind Sword:



Flame Breath:



Spider Shot:



## Player Definition

- Default (Status): Located at swamp center, WASD or arrow key movement
- Actions: Roll, Slide, Walk, Run, Jump
- Information (Status): None. Play to learn.
- Default Properties: 100 Health, 1 Koan, 1 Speed
- Winning: Mirror Image reaches 0 health
- Losing: Player reaches 0 health

## Player Properties

- **Health** – the metric determining how close the player is to losing (less health, closer to game loss)
  - Drop in current health results in darkened screen shade (red tint)
- **Koan** – the metric determining the modifier applied to the damage done through spell use (higher koan, greater damage)

## Player Rewards (Power-ups & Pick-ups)

- **Potion** – Triples health regeneration for 10 seconds. Used through the inventory menu.
- **Memory** – Adds a spell to the players inventory or reveals a detail of the player’s past. Used automatically on collection.

## User Interface (UI)

- **Movement** – Keyboard controlled (WASD or arrow key default).
- **Direction** – Mouse controlled, eg. the W button will move the player in the “forward” direction dictated by the camera.
- **Combat (spell casting)** – Mouse controlled (click), cast location dictated by mouse position or current facing direction.
- **Inventory Screen** – Keyboard triggered and controlled, displays items and equipment currently available.
- **Options Screen** – Keyboard triggered and controlled, displays control layout and allows game exit.

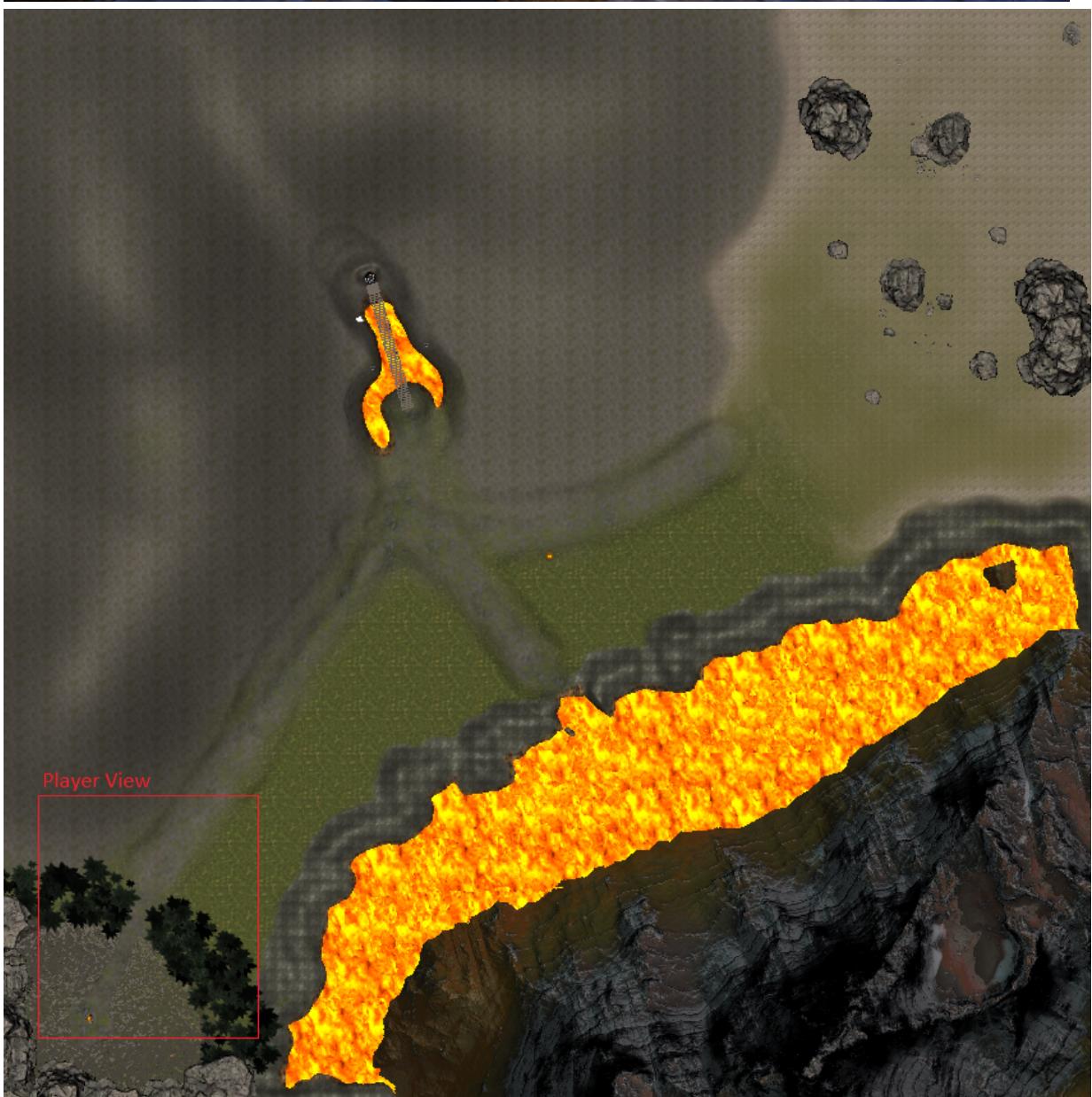
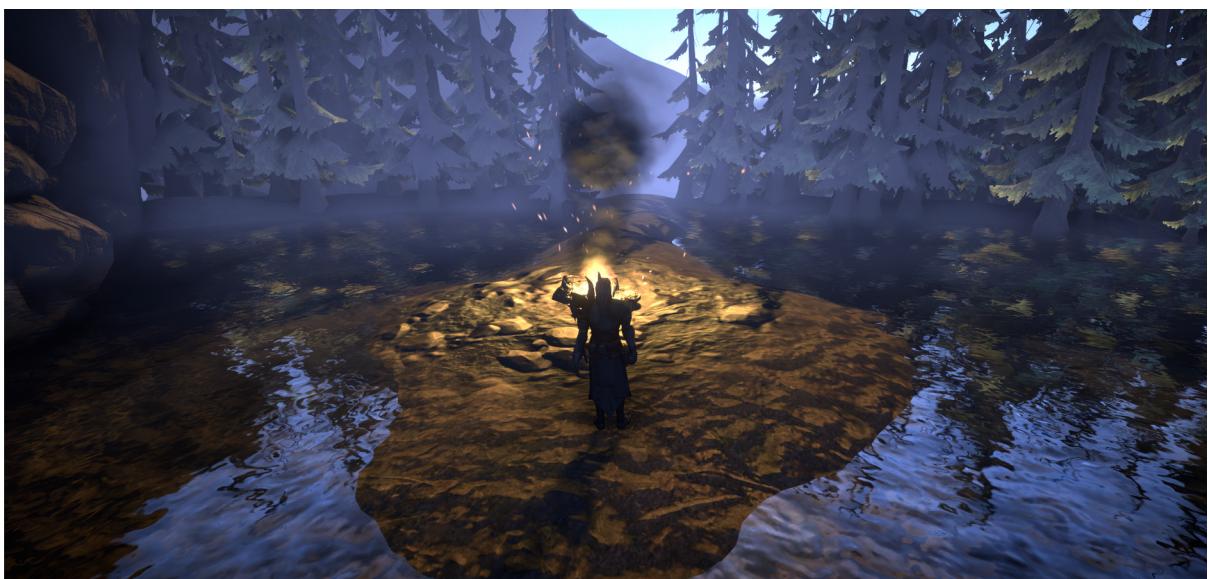
## Heads up Display (HUD)

A HUD is a constant reminder that the game is, in fact, not reality and as such will be avoided whenever possible.

A red hue to the player’s view will persistently represent remaining health and, when necessary, a translucent map may be overlaid to the corner of the view to aid in level traversal.

## Player View

The rotation of the camera will at all times be controlled by the position of the mouse.



## Antagonistic Elements

	<u>Game Name</u>	<u>Generic Name</u>
Mutant		parasite
	<ul style="list-style-type: none"><li>• Humanoid with mutated physiology and parasitic creatures surrounding it's body</li></ul>	
Giant Spider		spider
	<ul style="list-style-type: none"><li>• Large poisonous jumping arachnid</li></ul>	
Dark Double		ganfaul
	<ul style="list-style-type: none"><li>• A villainous duplicate of the main character, hellbent on power</li></ul>	

Mutant:



Giant Spider:



Double:



## Antagonistic Definitions

Antagonistic elements in this context are only those which are actively (through AI) attempting to cause the player to lose. Arguably, lava, blocked passages and other environmental elements could also be considered as they are a potential cause of player frustration.

## Antagonistic Properties

- **Health** – the metric determining how close the antagonist is to dying (higher health, harder to kill)
- **Speed** – the metric determining the modifier applied to the antagonists horizontal traversal through the world (higher speed, faster movement) – implemented but not modified.
- **Damage** – the metric determining the amount of health the antagonist takes from the player per attack (higher damage, more health removed)
- **Attack Speed** – The frequency with which the antagonist may use its attack – implemented but not modified.
- **Awareness** – The spherical distance from the antagonist to the player at which the antagonists chase sequence is triggered.

## Artificial Intelligence (AI)

Enemy:

- Normal State: Move at low speed between different destination points
- Detection State: Player enters enemy awareness
- Reaction State: Chase the player until they are within attack range or a reasonable way to locate the player cannot be found
- End State (Player dead or missing): Return to patrol

## Global Game Elements

The main level is bounded by an impassable wall of storm clouds while the Hill Caves and Mountain levels are bounded by the geometry of the environment.

The main camera is at all times a fixed distance away from the player and is directionally controlled by the players mouse position.

The world scale is roughly 1 200x200 level, 1 100x100 level and 1 10x10 level (for reference the player is roughly 1 unit tall).

Environmentally neutral objects include: grass, small rocks, some spiderwebs and dust particle effects. Each of these elements serves simply to create a more realistic setting.

## The Story

You awaken in a swamp. There is a thick fog all around. How did you get here? What are you doing here? Come to think of it... who are you? Why can't you remember? How long have you been here?

You need answers and, after checking the surrounding swampland, there don't appear to be any here. You head out on a nearby road and follow it out to a fork. There's a collection of large dusty hills to your left, what looks like a large empty field ahead of you and an enormous mountain surrounded by a raging sea of lava to your right.

No choice seems correct. This is definitely not somewhere you want to be or have ever been before. You pause to consider your situation when you feel a strong breeze from ahead calling to you. The wind feels familiar – as though you've known this exact wind for years. The wind dies down and you miss it desperately. You feel empty and alone without it. You frantically swing your hand through the air hoping to bring it back and, much to your surprise, you succeed. A strong burst of wind explodes from your palm and cuts through some of the rocks on the path near you.

None of this makes any sense to you but, unlike everything else here, it *feels* right. You decide to chase that feeling into the field ahead. Follow the wind.

There are people in the field aimlessly wandering. As you approach you notice... these aren't people. Maybe they were once but they're mutated and grotesque. It seems as though something has been eating them from the inside. One of them notices you and immediately screeches a sound like death itself before it begins to tunnel straight for you.

It bends towards you and begins vomiting flames! You barrel out of the way as quickly as you can and instinctually swing your hand, somehow knowing that the wind would be there for you. Before you realize what's happening, the creature is falling into pieces in front of you.

It dawns on you in waves what the problem with this place is. It's not that *you* don't belong. It's that *they* don't belong. This is a problem that you need to fix. Before you know it you're in an all out brawl with every flame spitting mutant you can find.

As you cut the last one down, in the middle of it's flaming regurgitation, you feel the warmth of it's bile wash over you. It's warm and familiar – a familiarity you've experienced recently. The creature draws it's last breath and the warmth dissipates. You are cold and lost without it. You're filled with rage and disgust at the thought of being abandoned by the warmth to this cold, desolate wasteland – alone. You scream at the skies in exasperation and flames erupt from your mouth.

It's crystal clear now what you must do. This place is infected and you are the cure. This place must be cleansed. You head back towards the mountain. Something in there is calling to you but there's no way through the lava. There must be more around here that doesn't belong. You head for the hills and notice a system of caves nestled beneath them with an entrance

infested with spiderwebs.

You breath fire throughout the entrance and quickly the webs are no more. Stepping in, you notice the cavern is lined with torches. How did they get here? Who keeps them lit and why? You hear skittering behind you. As you turn to investigate you realize you're light headed. Looking down you notice your legs are covered in spiderwebs. From the darkness a spider the length of your entire arm leaps for you. You bellow a scream and before you fully realize what's happened the corpse of a cooked spider lay beneath you.

In a panic you begin tearing the spiderwebs from your legs. There's a thick, slimy coating on them that you suspect is the reason you feel so woozy. After nearly half an hour of scraping you manage to clear the webs from yourself. Maybe it's the poison from the webs or maybe you're losing your mind in the caves but, oddly enough, you miss the feeling. You miss the comforting embrace of the webs.

Rubbing your legs where the coating used to be you notice the embrace returns. The webs have come back. You've brought them back. Unable to focus and barely able to stand you decide it's best not to stay here longer than you must.

Exiting the cave and heading towards the crossroads again it dawns on you that the only place left with any possible clues is the mountain but there's no clear way across the lava. Sitting at the edge of the lava for several hours you start to think you'll be stuck here forever. Never learn what truly brought you here and never remove the plague that encompasses this place. In frustration you slam your fists into the crust at the lava's edge.

Webs expand from where you struck to the edge of the mountain. Shockingly, they are not engulfed by the raging stream of molten rock. They've formed a solid base above the boiling river below. There's nowhere to go but onward.

Arriving at the base of the mountain you see a towering doorway framed with the inscription "*Death can only be the answer if you are certain of the question.*" After passing through, the door slams shut behind you and there is nothing but darkness.

From the dark emerges a thunderous, mocking laughter. One by one, torches begin to light in a circle around you revealing the laughter's source: you. Standing before you in this desolate tomb is a man who looks exactly like you. Something in your chest is telling you that this man more than looks like you. He is you.

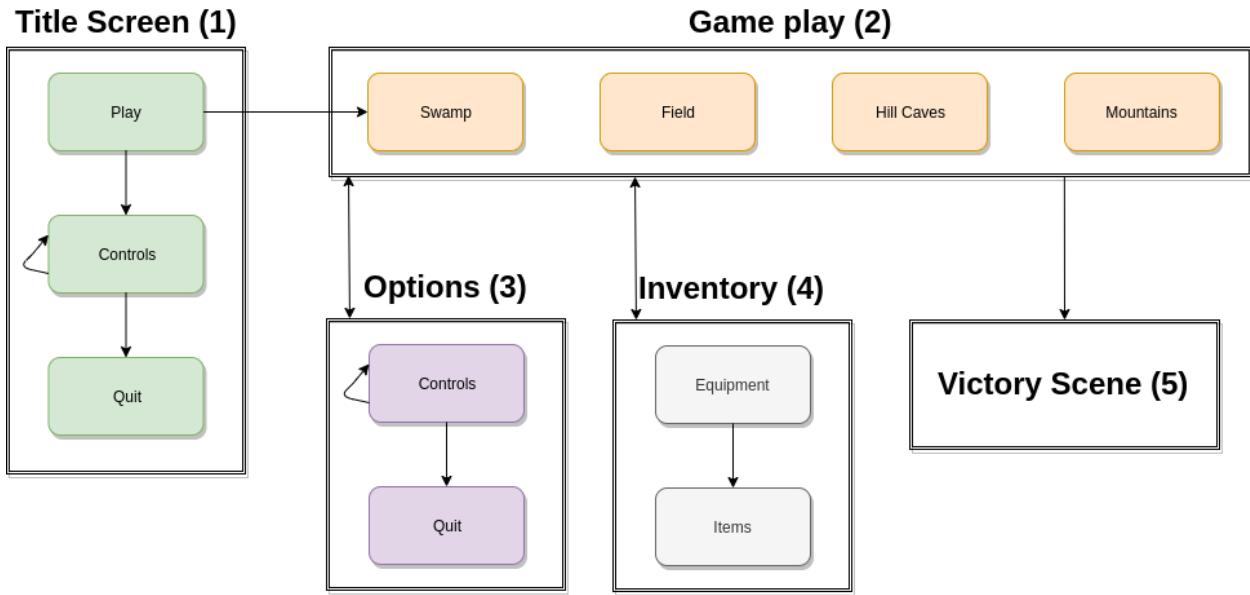
Without a word he lunges at you with a look unlike one you would expect from yourself. He is not desperate or emotional or concerned. He is not confused or questioning his purpose in this place. He is determined. What he wants will come at the cost of your life.

The story ends with the victor of this battle. Unfortunately, no matter who wins – a part of you will die.

## Audio & Sound F/X

- Soundtrack
  - Main Level: Eerie (ominous deep toned background music)
  - Hills: Hollow (mid-range sporadic music with an echo filter)
  - Mountain: Epic (fast-paced, punctuated, dramatic staccato music)
- Sound F/X
  - Wind Sword: Slashing sound
  - Flame Breath: Exhaling sound
  - Mutant: Snarling sound
  - Spiders: Skittering sound
- Miscellaneous Audio
  - Player: vocal clips of passive dialogue and aggravated dialogue for final battle
  - Environment:
    - Wind: Whistling sound
    - Campfire: Crackling sound
    - Lightning: Thunder crack sound

## Game Architecture



## How To Play Copy

Camera facing will alter your forward / sideways direction making for easy strafing. This will be an important thing to keep in mind when attempting to dodge enemy attacks. For the same reason, getting comfortable using your “roll” and “slide” actions will also be important as well as timing your attacks to occur during the time between opponent’s attacks.

Collecting memories is always a mandatory prerequisite to unlocking a new stage of the map. If you have thoroughly cleared every area available and still feel unable to advance to the next area, try using your newest spells around what’s keeping you from advancing.

# Technical Document

## System Requirements

### Minimum Requirements

OS: Windows 7 SP1, Mac OS X Snow Leopard – 10.6, Ubuntu 14.04 Trusty Tahr

CPU: Intel Core i5-750, 2.67 GHz / AMD Athlon II X3 450, 3.2 GHz

RAM: 2 GB

GPU: NVIDIA GeForce GTX 460 / AMD Radeon HD 5850

Free HDD: 2 GB

### Recommended Requirements

Windows 10 Home 1903, MacOS Sierra 10.12, Ubuntu 19.04 Disco Dingo

CPU: Intel Core i7-3770, 3.4 GHz / AMD FX-8350, 4.0 GHz

RAM: 8 GB

GPU: NVIDIA GeForce GTX 660 / AMD Radeon HD 7950

Free HDD: 6 GB

## Code Structure

The goal of the code structure was low coupling and high cohesion. Broad, generic code was written with the expectation that it be inherited by more specific classes which then narrowed the focus.

eg, Enemy class contains functions like Attack, DealDamage and TakeDamage. Mutant class then inherits from the Enemy class and overwrites the Attack class since Mutants deal damage through particle collisions and not direct collisions as was the parent class assumes.

## Concerns and Alternatives

<u>Concern</u>	<u>Alternative</u>
Fire Breath spell is too clunky to use in combat	Use ranged “Fireball” instead 
Possibility to win without engaging a significant amount of the enemies	Institute an experience system, rewarding players more directly for combat 
Certain spells are overpowered against certain enemies’ methods of combat	Add “resistances” to enemies, reducing the amount of damage they take from elements of the overpowered type 
Combat is too restrictive to be enjoyable while relying exclusively on spell casts	Add limited use weapon drops (eg, throwing daggers) 
Reliance on particle systems overwhelm system resources	Replace extraneous particle systems with static alternatives (eg, replace storm cloud main level barriers with static imagery)



Storm clouds did need to be limited as they were a heavy strain but, specifically in the Mutant “plains” area but instead of a full static solution, a compromise was made by removing other taxing details and halving the total number of storm clouds. Performance is not ideal but the ambiance that the storm lighting provides was deemed worth the hit.