

Below

All code and assets are 100% original aside from the methods and classes used directly from the Monogame framework.

There is a bug with certain versions of Microsoft DirectX where the music plays, but the .wav sound effects do not. This can be fixed by updating DirectX.

<https://www.microsoft.com/en-us/download/details.aspx?id=35>

Overview

Below is a story about a group of friends who decide to go hiking in the mountains. The friends take shelter in a cave where they find a mysterious portal. Curiosity gets the better of them, and they decide to get a closer look, only to be sucked in by an unknown entity. From there, the main game starts.

Below has 5 parts in total: the prologue, chapter 1, chapter 2, chapter 3, and the epilogue.

The prologue consists of the background information and the levels where the friends are hiking up to the cave level where they find the portal.

Each chapter is a group of 3 levels with a boss at the end.

Each group and boss is harder than the one before and adds a new element of difficulty.

In the levels, the player is being chased by a mysterious force dubbed as the "shadow wall."

At the end of each level, there is a portal leading to the next level, or the boss.

Upon defeating the boss, the chapter ends and the next one starts.

Upon defeating the final boss, the player has to decide their own fate. Below has 2 different endings based on the choice the player makes.

The ending is the epilogue.

Story

A police report is shown that reveals that Officer MacReady is searching for three individuals that have gone missing in Haddon.

A week earlier, three friends, Ted Baldwin (the player), Patrick Carlson, and Naomi Malkovich, go on a hiking trip in the local mountains of Haddon. While hiking, a storm hits and the three split up in order to find shelter. Ted radios back to his friends and they all meet up inside the

cave. Inside the cave is a strange portal, and the three hikers decide to get a closer look at it. Ted gets to close, and the portal pulls him in.

Ted wakes up dazed and alone in a cavern. His friends are nowhere to be seen, and he decides to try to escape the caves.

Ted runs through the caves with a strange, shadowy entity chasing him. He finds strange creatures in the ground with jaws that extend above ground and close on anything that applies pressure to them, and has to jump over them to escape being hurt. At the end of the cavern is a portal that he steps through to avoid the entity chasing him, but is chased by the same entity through another cavern.

Ted continues to travel through the caverns, and eventually reaches a large area with a sphere made of shadows and with a crystal in its center that resembles Naomi's hair pin. The sphere starts to pulse, and veins start to glow. Once the veins hit the edge of the sphere, the sphere launches balls made from shadow at Ted. Ted maneuvers around the room to avoid the shadow balls, and discovers that he can deflect the shadow balls back to the sphere and damage it by hitting the balls with the beam from his flashlight. Ted eventually defeats the sphere, and a portal appears.

Ted goes through the portal, and finds the shadowy entity waiting for him. Ted makes his way through the caverns yet again, and finds that a different type of shadow balls come flying towards him, but he can't deflect them. After stepping through a few portals, Ted finds himself being chased back through a previous area by a shadowy monster similar to the entity chasing him through the caves. This entity, however, is a monstrous abomination with spikes made of shadows, many eyes, and a large pendant hanging from a spike that looks like an enlarged version of Patrick's necklace. Ted runs through the cave, and at the end is a large pit that he has no choice but to jump into.

After landing, Ted finds himself in a stranger cavern than before, with a purple tint covering the walls. The shadowy entity continues to chase him, and Ted runs onward, this time avoiding the hazards he previously discovered with the addition of massive chasms. After making his way through the cave, he meets a large, decrepit skeleton with a large eyeball for a head. It is dressed in a tattered robe and only has one arm, with a large talon replacing its hand. The wraith summons shadow balls from above and Ted can once again deflect them back at the monster. After Ted attacks the wraith for a while, the wraith stops and tells Ted that he can't defeat him. But Ted has put up a good fight, so the wraith will allow him to choose his fate. He can either join the wraith and assimilate with the darkness but lose his humanity, or he can choose to remain in the cave and die in solitude.

(If the player chooses to join the darkness) A police report is shown, revealing that none of the three hikers have been found and Officer MacReady has now gone missing. Locals have reported a purple haze in the area and strange noises coming from the mountains.

(If the player chooses to die in solitude) A police report is shown, revealing that Ted's body was found in the caves by police, with many lacerations on his legs and torso. Patrick and Naomi are still missing, and given the cuts on Ted, it is thought that his friends murdered him and a warrant is issued for their arrest.

Technical Specifications

- 2D
- Game Saves: XML Serialization
- Utilizes keyboard and mouse input
- Deferred Lighting System
- Made in C# with the Monogame/XNA game framework
- IDE: Visual Studio 2015
- Autosaving

How to run

To view source, open [Source/Below/Below.sln](#) in Visual Studio. The Monogame Framework must be installed.

To simply run the game, execute [Release/Below.exe](#)

Software

Visual Studio 2015 Community Edition - <https://www.visualstudio.com/>

Paint.net - <https://www.getpaint.net/>

Aseprite 1.2 (open source) - <https://www.aseprite.org/>, <https://github.com/aseprite/aseprite>
While the software can be bought, we used open source version.

Bfxr - <https://www.bfxr.net/>

GarageBand (free iPad app) - <https://itunes.apple.com/us/app/garageband/id408709785?mt=8>

Audacity - <https://www.audacityteam.org/>

Monogame Framework 3.6 - <http://www.monogame.net/>

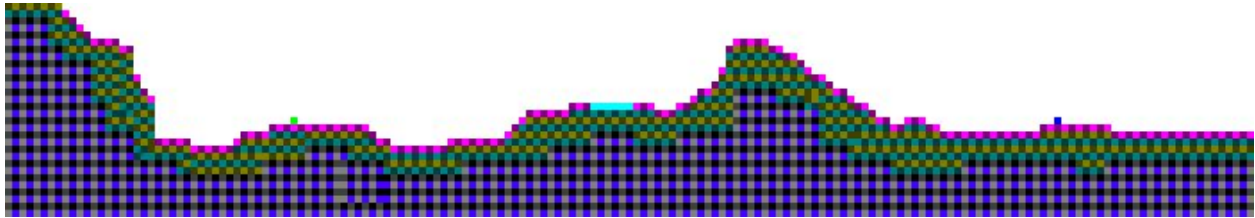
Dropbox - <https://www.dropbox.com/>

Dropbox

All game assets were kept in a shared Dropbox folder. This allowed easy transfer of assets and the ability to work from any computer.

Level Loading

All levels in Below are loaded from a bitmap image file, where each pixel corresponds to a 32x32 tile. Different color pixels will load different tiles or objects.



For example, This is what the bitmap for the starting forest level looks like. The green square loads the player's position, the aqua pixels load water tiles, and the blue pixel is the exit to the next level. The rest of the pixels make up the level itself.

How does it work?

To load a level, a path to a bitmap image needs to be provided. Each pixel of the bitmap is read into a 2-dimensional color array. Next, the color array is looped through, and different tiles are placed based on the corresponding color of the pixel. This converts the 2d color array into a 2d tile array of the same size. From there, the tiles in the tile array are drawn and physics between the player and the tiles are applied.

Lighting Engine

The lighting engine created the dark and mysterious mood, as well as means to increase the difficulty. The lighting effect is created using two shaders we wrote: `DeferredLightEffect.fx` and `LightEffect.fx`.

`DeferredLightEffect.fx` creates the ambient lighting effect, while `LightEffect.fx` creates the lights themselves, like the flashlight.

Controls

A - Move Left
D - Move Right
W/Space - Jump
F - Toggle Flashlight
E - Interact
Q - Heal
Esc - Pause/Menu

Developer Modes

F1 - Toggle Lighting Engine
F2 - Player information and God Mode
F3 - FPS Counter

Screen IDs

The current screen is saved as an integer in SaveData/Level.xml as LastScreen.
To advance to a specific screen, the LastScreen integer can be changed.

0 - PrologueScreen
1 - PoliceReportScreen
2 - DateScreen
3 - ForestScreen
4 - CaveScreen
5 - WakeUpScreen
6 - LevelScreen (where the groups of 3 levels are loaded)
7 - Boss1Screen
8 - Boss2Screen
9 - EndBossScreen
10 - ChoiceScreen
11 - EpilogueScreen
12 - Ending1Screen
13 - Ending2Screen