Dark \|/ Light VR experience

## Description:

For my Capstone Project, about forgiving oneself and starting a path of consciousness, healing and inner peace.

The users will go through stages of consciousness. As babies, we are humble and eager to learn. Then, when we get older, we may hit rock bottom. But, hope is always there and we have our guiding spirits offering a hand. So we understand there is a path towards light and finally - we see a glimpse of it and start our own path of healing and inner peace.

## Features And Dependencies:

### 3D Models + Animations

* Inside of a house with a garden
* A cliff, being the user on part 1 on top of that cliff without knowing, that they are going to be in the bottom. And part 2 the bottom.
* Light spirits – like Big Hero 6
* A level that constitutes a pathway – going through levitating stones until it reaches the top platform
* Looking at a rotating Earth from outer space with a light spirit.

### Game Loop

* 1. Level 1 – Naivety – Tutorial level to learn the controls, player in baby size
  2. Level 2 Part 1 – Noise – Perform actions that make things worse
  3. Level 2 Part 2 – Rock Bottom – Hitting rock bottom. The actions done before will haunt the player
  4. Level 3 – Hope – A talk with the light spirits
  5. Level 4 – Pathway towards the light
  6. Level 5 – Light – A talk from outer space – reached a basic level of self conscious that can help him find inner peace
  7. Level 6 – The End – back to level 1, this time with full powers
     1. Easter Egg – go back to Level 2 until Level 5 and starting healing

### Other Effects

* 1. Light Beam – selects trash that you want to heal. It includes particle systems, a custom shader for the beam and the objects selected; and voice recognition to make the selected objects go away. The speech recognition is intended because it should be a conscious act of healing.
  2. Meditation Circle – players need to lower the controls until a sitting level and Say I’m ready – to go to the next stage of consciousness. The speech recognition is intended because it should be a conscious act of going forward.
  3. Music and Narrator throughout the game
  4. Light Spirits with a lot of animations that connect all with each other
  5. Controller Hints to guide the player through the process – in the tutorial and in the rest of the game if they press the hint menu

Capstone Scoping

## Features And Dependencies:

### 3D Models + Animations

* Inside of a house with a garden
  + (Not done - couldn't find a nice free scene garden) → instead I just used the house I developed in Build An Apartment project, and added baby toys and frames, with the skybox of a garden outside
* A cliff – done in 3ds Max
* Light spirits – like Big Hero 6 – created one in 3ds Max, changed colors and added a light and a particle system to their core. Animations, skin and rigged bones were done in 3ds Max as well.
* A level that constitutes a pathway – going through levitating stones until it reaches the top platform. The Scenery and the platform was done in 3ds Max, other objects, trees, weeds, stones were taken from websites with free assets
* Looking at a rotating Earth from outer space with a light spirit.
  + Revised: Used a free skybox instead for planet earth. Made the light spirit big

### Game Loop & Other effects

* Create a story that took the player on a journey towards self-conscience
  + Starting as a baby: Doable / Done (it's scene 1)
    - Make this level a tutorial level to learn (Doable / Done)
      * Make it in a garden with a house (Not done) – used the Build an Apartment house and tweaked it.
      * With controller and text hints on controllers (Doable / Done)
      * With the narrator helping in each blue highlighted spot (Doable / Done)
      * In the end, using a meditation circle to travel to the next level (Doable / Done)
        + Having like nice greek marble stones with instructions (Out of scope – weird crazy idea to use garden décor as the tutorial to learn how to do things, use the steam vr controller hints instead)
  + Going into a dark space on top of a cliff:, and the player's actions make it worse (Doable / Done)
    - Trash piles up when throwing balls from a cliff (Doable / Done)
    - Have a piano there to trigger actions (Not Done - it didn't make that much sense, I just liked the idea because I knew the song that was going to play in that moment)
    - When turning around, it would trigger the next level so you'd be facing the cliff (Doable / Done but not used - in the middle of development it was removed, because it stopped making sense with the dialog)
  + Going to the bottom of the cliff and take an avalanche - it represents all the problems you tried to run away from (Doable / Done)
    - Watching this from afar (Not done) - I realized I could the stop the avalanche from hurting the user and it would have a much bigger impact
  + Light spirits talking to you to give you hope after you hit rock bottom (Doable / Done)
  + Walk on a pathway towards the light (Doable / Done)
    - Make the climbing a Rule Goldberg game (not Done - it was a bit tricky and unnecessary for the game, after reworking the game script it stopped making sense)
    - This time being able to stop the avalanche with help of the light spirits (Doable / Done)
      * Having the light spirits saying go away too (Not done - I could have done it but after trying it, I didn't feel necessary)
    - Have cool animations while going up the pathway Doable / Done
      * Light spirits flying around me (Doable / Done)
        + I wanted to use AI animations at first to mostly learn, but then it wouldn't have the desired effect I guess (Not done)
      * Pathway slowly appearing (Doable / Done)
      * The night sky changing (Doable / Done e - through a skybox blend shader)
      * Trees starting to grow leaves (Doable / Done)
  + Have a final talk with the light spirits watching Planet Earth from above (Doable / Done)
  + Go back to the first level with all powers  (Doable / Done)
    - On this level, being able to go back and clean the previous levels (Doable / Done) – it is my Easter Egg!
      * Only show the cleaned trash if you went back to the level [in case you have cleaned some before] (not done - I didnt have time)
  + Throughout the entire journey have a guiding book, with quotes to help. Pick up when trying to reach the back pocket (Not done - after spending a month and a half learning 3d modelling I didn't even think about it anymore ー instead I made a hint menu with the active controllers, and the narrator).
  + Cross levels sitting on a meditation circle (Doable / Done)
    - Using voice to say "**I'm ready**", while tracking the controllers are close to the floor (to make the player) and move to the next level (Doable / Done)
    - Circle with light coming from the floor, creating a cool wicked flame effect (Almost - that was to hard and it would probably involve sprites ー used a particle system around a ring)
    - Having its own relaxing music (Doable / Done)
  + Have background music (Doable / Done)
* Having something to represent dirt and bad energies in ourselves (Doable / Done) – I found in Sketchfab a trash template, that worked fine after tweeking it in 3Ds Max.
  + Have it scatter across levels (Doable / Done) - it was done in 3Ds Max using the SiNi software Scatter plugin from
* Provide an ability to heal - represented by cleaning trash
  + This was done by having a selecting ray on hand (Doable / Done**)**
  + I wanted also to be a conscious player decision - so **Voice Input** to make objects **Go Away** (Doable / Done)
    - users say go away and objects fade and disappear (Doable / Done)
  + Understand when an object is selected and have a nice fading animation (Doable / Done - I created a custom shader and tweaked its alpha values using LeanTween)
  + If not trash, Select objects with the selecting ray  and move them in a distance (Not Done - It didn't make sense and it would only complicate the interaction. objects would have to be highlighted in different colors and have different interactions. It would be a mess)
  + Add animations like concentrating energy, reaching target, and fade slowly (Not done - Too hard at the time, (it was the first interaction I developed) - never thought about it since – it is cool as it is!)
* Write a narrator script and record it (Doable / Done - with the help of my friend Ricardo Ralha)
* Incorporate narrator dialog while in game (Doable / Done) - with an audio manager and event manager
  + When narrator is speaking, make it the loudest sound in game (Almost - I couldn't do it due to the sound limits. But every time the narrator speaks, the meditation and music lower)
* Google online for a cute no legs Big Hero 6 - to represent the light spirits and animate it with flying, talking and doing nothing (Not able to find)
  + Since I did not find anything, I learned 3Ds Max to create my own character and rigged it. I followed two online courses: **3Ds Max 2019 Essentials Training by Aaron F. Ross, Animating for Unity 3D in 3Ds Max by Adam Crespi** (Doable / Done)
* Google online for free scenes like a cliff and a baby room / apartment (Not able to find)
  + Since that was not possible, I learned 3Ds Max. As for the baby room, I used the 1st term 2nd Project Build An Apartment and added baby photos, toys and a crib to it (Doable / Done).
* Having different selecting light rays depending on the level of consciousness (which is determined by the level in game) (Doable / Done)
  + they have different color gradients, and different animations (Doable / Done)
* Have different hand models for different levels, to represent the actions one can or cannot perform (Not Done)

| 3rd Party Assets | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Asset name** | **Level** |  | **Link** | **Source** |  |
| Kids table | 1 - Naivety |  | <https://www.turbosquid.com/FullPreview/Index.cfm/ID/982097> | TurboSquid |  |
| Tricycle | 1 - Naivety |  | <https://free3d.com/3d-model/trike-53466.html> | Free3D |  |
| Baby crib | 1 - Naivety |  | <https://free3d.com/3d-model/baby-crib-83588.html> | Free3D |  |
| Baby bottle | 1 - Naivety |  | <https://free3d.com/3d-model/babybottle-v5--97719.html> | Free3D |  |
| RC Car | 1 - Naivety |  | <https://free3d.com/3d-model/rc-car-sg-v2--472345.html> | Free3D |  |
| Baby mattress | 1 - Naivety |  | <https://www.turbosquid.com/FullPreview/Index.cfm/ID/770442> | TurboSquid |  |
| Picture frame | 1 - Naivety |  | <https://www.turbosquid.com/FullPreview/Index.cfm/ID/813435> | TurboSquid |  |
| Wall picture frame | 1 - Naivety |  | <https://sketchfab.com/3d-models/low-poly-picture-frame-49fac29d278044fcbdf652e8dfb757c9> | SketchFab |  |
| Trash can | 1 - Naivety |  | <https://sketchfab.com/3d-models/trash-can-02-a4ca1a1764e841cc9ce9259e699aebd9?ref=related#download> | SketchFab |  |
| Dandelion | 1 - Naivety,2- Noise,4 - The Path towards |  | <https://www.turbosquid.com/FullPreview/Index.cfm/ID/709989> | TurboSquid |  |
| Garbage | 1 - Naivety,2- Noise,4 - The Path towards |  | <https://www.turbosquid.com/FullPreview/Index.cfm/ID/1384354> | TurboSquid |  |
| Old Tree | 2- Noise,4 - The Path towards |  | <https://www.turbosquid.com/FullPreview/Index.cfm/ID/1047477> | TurboSquid |  |
| Stone | 4 - The Path towards |  | <https://www.turbosquid.com/FullPreview/Index.cfm/ID/745533> | TurboSquid |  |
| Meditation Circle | 1 - Naivety,2- Noise,3 - Hope,4 - The Path towards,5 - Light |  | <https://sketchfab.com/3d-models/magic-circle-48395005e0e644b9a5e5cad9b1b853aa> | SketchFab |  |
| Skybox - Forest | 1 - Naivety |  | <https://www.bobgroothuis.com/products/dutch-free-360-hdri-015?variant=19931280670779> | DUTCH360 HDR |  |
| Skybox - Garden | 1 - Naivety |  | <https://www.bobgroothuis.com/products/dutch-free-360-hdri-013-reloaded?variant=19931276345403> | DUTCH360 HDR |  |
| Birds singing | 1 - Naivety |  | <https://freesound.org/people/hargissssound/sounds/345852/> | [FreeSound.org](http://FreeSound.org) |  |
| Skybox - Earth from space | 5 - Light |  | <https://assetstore.unity.com/packages/2d/textures-materials/sky/earth-planets-skyboxes-53752> | Unity Asset Store |  |
| Skybox - Milky Way | 4 - The Path towards |  | <https://assetstore.unity.com/packages/2d/textures-materials/sky/starfield-skybox-92717> | Unity Asset Store |  |
| Skybox - Midnight Sky | 3 - Hope |  | <https://assetstore.unity.com/packages/2d/textures-materials/sky/10-skyboxes-pack-day-night-32236> | Unity Asset Store |  |
| Meditation Circle Song |  |  | <https://freesound.org/people/Timbre/sounds/244973/> | [FreeSound.org](http://FreeSound.org) |  |
| Meditation Circle Song 2 |  |  | <https://freesound.org/people/PatrickLieberkind/sounds/214334/> | [FreeSound.org](http://FreeSound.org) |  |
| Handling trash sound | 2- Noise |  | [Trash Taken Out\_1-2.aif](https://freesound.org/people/lucaslara/sounds/154437/) | [FreeSound.org](http://FreeSound.org) |  |
| White noise | 2- Noise |  | <https://freesound.org/people/florianreichelt/sounds/448213/> | [FreeSound.org](http://FreeSound.org) |  |

| Plugins / 3rd party | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Plugin name** | **Level** | **3rd-Person Asset** | **Link** | **Source** | **Description** |
| LeanTween | 1 - Naivety,2- Noise | true | <https://assetstore.unity.com/packages/tools/animation/leantween-3595> | Asset Store |  |
| Shader Forge | 1 - Naivety,2- Noise,4 - The Path towards | true | <http://acegikmo.com/shaderforge/> | Git Hub | Light ray shader |
| SteamVR |  | false |  | Asset Store | Steam VR 2.2.0 |
| Windows Phrase Recognition | 1 - Naivety,2- Noise,3 - Hope,4 - The Path towards,5 - Light | false |  |  |  |

## Extra assets Level 1 - Naivety

### Skybox from [DUTCH360 HDR](https://www.dutch360hdr.com/shop/product-category/free-360-hdri/) assets

* **DF360\_013 [texture reduced to 2048 - medium quality compression]**

### Textures from [SketchupTexture](https://www.sketchuptextureclub.com/)

* **Bamboo, Dark Fine Wood, Old Wall, Venetian Plaster, Reinassance Plaster, Super Dark Fine Wood, Parquet Medium**

### Extra Furniture from the Unity Asset Store

* **A nice sofa from \_CASSDALLA *ArchViz Sofa Pack - Lite***
* **A table glass from \_QUADRANTE STUDIO *Simple Table Glass***
* **Bag Chair from *ANATOLIY M. Bag Chair***
* **Computer Chair from *ANATOLIY M. Chair FP-01***
* **Round Carpets from *OLOF HAGELIN Round Carpet***
* **Lamps from *NEW SOLUTION STUDIO Free PBR Lamps***
* **Plants from *NOBIAX / YUGHUES Yughues Free Decorative Plants***
* **Single Bed from *KOBRA GAME STUDIOS Bed collection***

## Courses Taken to learn 3D Modelling and Rigged Animation

* **3Ds Max 2019 Essentials Training by Aaron F. Ross**
* **Animating for Unity 3D in 3Ds Max by Adam Crespi**

Game Narration

# Level 1 - Naivety

Hello there.

Do you remember when you were young?

When you were a small baby ready to take its first steps into this world?

Back then, everything was new. A soft touch would make you laugh, a sour flavor would make you cry.

It was a time to learn.

Here as well, you have to discover how to interact with this world.

First, you need to learn how to walk.

Press the left trackpad and let go once you land on a place you would like to go.

Visit the blue highlighted spots ahead. There you'll learn new things!

Nice going! ***(if it is first stop)***

1 - Now, do you see the picture frame? Reach it with your hand and press any of the trigger buttons.

By doing so, you can move around with it.

2 - You can also throw your toys. Go ahead, grab and release the trigger button when you are ready!

3 - Don't worry, if you forget the controls. Press the left top button and a hint menu pops up! This menu will be helpful throughout the experience so you know what you are able or not to do.

4 - Through our experiences in life, we pile up harmful energies from the world around us. These are represented by the trash in front of you.

As babies, we barely have any. Most of them are temporary and easily cleanable.

Press the right trackpad and point the light beam towards the objects you want to select. If you want to cancel a selection, press the right grip button.

To clean the trash, press the top button to enter the voice command mode and say "Go Away".

Good job! ***(if done correctly)***

5 - This is a meditation circle. You will see one in most levels.

It is where, once ready, you will move to the next level.

Just relax, sit down and put a controller down. Take a deep breath, close your eyes, enter the voice command mode and say: "I'm ready".

**Things to do:**

**Controller hints.**

**Commands page? - left grip?**

# Level 2 - Rock Bottom

[static noise, people indistinct chatter]

As time passes, you grow old. Your body and mind evolve but, at the same time,  you pile up unhealthy energies and lose conscience.

Pleasing others, craving things you don't need or surrendering to your desires are just mechanisms to help you cope with yourself.

But the problems you have been running away from are still there. And unconscious decisions can have unpredictable consequences.

Look around you...

The trash is pilling up, isn't it?

The truth is that you live in a constant state of dissatisfaction, without even realizing it.

**part 2**

(Aphex Twin song starts now)

By not healing, everything around you starts to crumble. You're not only impacting your life but also the lives of those you love.

No matter how hard you try to run away, you only hurt yourself more...

Until it's too much to bear and you realize you've hit rock bottom.

But there is always hope...

[meditation circle appears]

**Things to do**

**Balls / trash falling from the sky [surround you]**

**Place family burnt photos around**

# Level 3 - Hope

Sorry if we hurt you.

Sometimes, suffering is necessary to obtain a state of conscience, because you weren't able to understand in any other way.

But whatever the state of your life right now is, it's okay.

Don't judge. Forgive yourself for what you have done. You didn't know better.

Healing is a lengthy process, and by knowing yourself, you'll know which paths to take in peace.

Just don't assume everything will go smoothly, because it won't. You'll still make many mistakes. But you'll learn and grow from them.

# Level 4 - The path towards...

You're now going on a new journey. A journey where you will learn more about yourself and help those around you.

You'll see things differently, from another perspective.

Everything happens for a reason and everyone has a mission to accomplish. After all, that's why we're all here.

You'll be faced with challenges. The cravings, the confusion, the hatred, the jealousy, they will come back.

But now, you know how to face them

[balls and trash falling again]

[light spirits pointing upward as a hint – right controller starts vibrating]

...and, you will always have someone beside you.

[climb rocks]

Remember, you will never be alone.

You're not the only one on the path to enlightenment.

# Level 5 - Enlightenment

Welcome to the light.

As you can see, humans are very tiny, like grains of sand. But they are incredibly strong and filled with love.

In peace with themselves, they're capable of incredible things.

But sadly, not everyone has the same level of spiritual awareness to reach this stage. Some people are aware since they were born, others need to overcome certain obstacles before they can be here, just like you.

Your life will proceed differently from now on.

You have to heal and become more conscious of your actions.

Take your time and don't worry, because  whenever you are needed, the Universe will take you there to complete your role.

Just listen to your heart and let yourself be guided.

If you stray from your path, we'll help you.

[meditation circle appears]

Remember, we'll be here when you need us

[before leaving]

Now you are ready to start anew...

# Naivety again (with no dialog and credits)

Song - the ballad of el goodo, thirteen

**Find easter egg**