

# Final Presentation

## Project Conceptualization and Development

**Project Title:** Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation

**Group:** Anthony Pereira & Carlos Costa

**Practical assignment goal:** Development of a mini-game using VR that will be part of the main game.

# Assignment 1

## **Project Conceptualization**

# Project Vision

**Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation**

- Mini-game that materializes a loop of the protagonist's excessive and negative thoughts about himself and death;
- Test if the immersion caused by the VR technology can lead to greater empathy for the protagonist;
- Check if this mini-game can trigger empathy by the player;



# Project Objectives

**Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation**

## HIGH-LEVEL GOALS

- Focus first on the gameplay:
  - Interaction between player/reality and the game/virtual
    - Hardware: Oculus Quest and controllers;
      - Puzzle-solving:
        - Player being able to pick up objects - e.g. a gun;
        - Player being able to throw/use these objects at a target location.
      - How to represent virtual states in reality:
        - Virtual-player arm being pushed out of the minecart;
        - Virtual-player, after grabbing an object, what to do with it.
  - Focus second on the storyline:
    - Use of multiple 3D models with gore-like thematic to better illustrate the protagonist's state of mind during his negative loops;
    - Possible use of sound/speaking.



# Project Objectives

**Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation**

## EXPECTED OUTCOME & BENEFIT

- A functional mini-game that can be already tested with participants regarding the levels of empathy.
- A mini-game that, finished its development, can be added to Anthony's project.



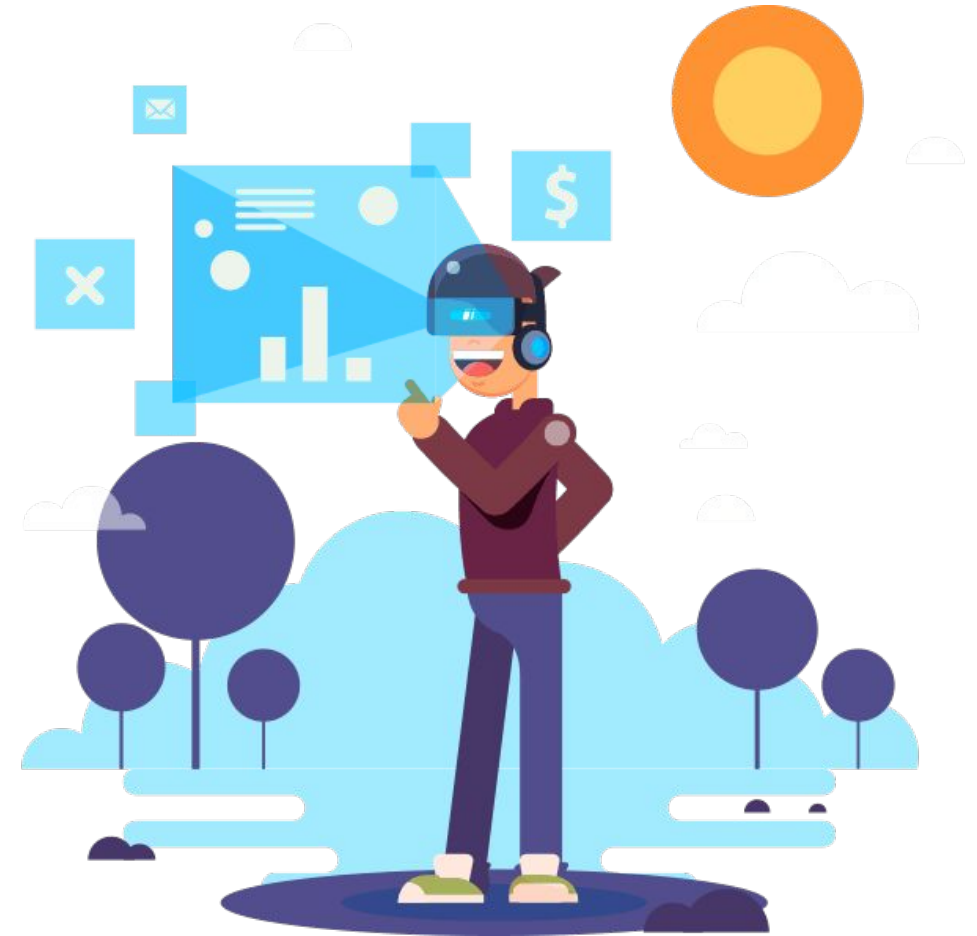
# Assignment 2

## **Project Development**

# Prototype Developed

**Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation**

- The main features of this solution are related to its *puzzle-solving* nature:
  - *Grabbing* of objects;
  - Interaction within the scene using these *grabbable* objects;
  - Release of objects;
  - Turn around on the truck that has a defined movement path.
- Is a pilot study about whether or not it is worth betting on a VR game for Anthony's dissertation - exploratory nature.



# Prototype Developed II

Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation

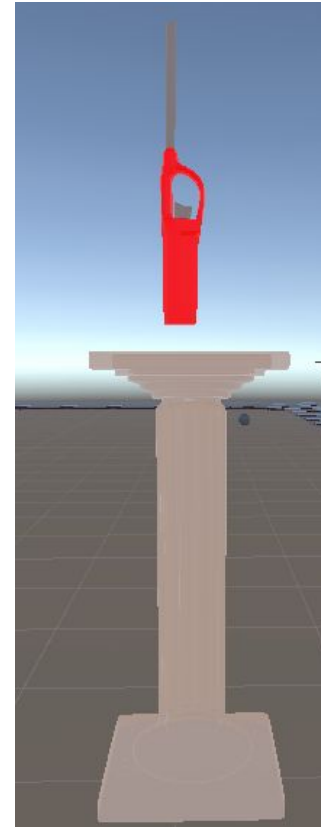
- *Grabbing* and release of objects



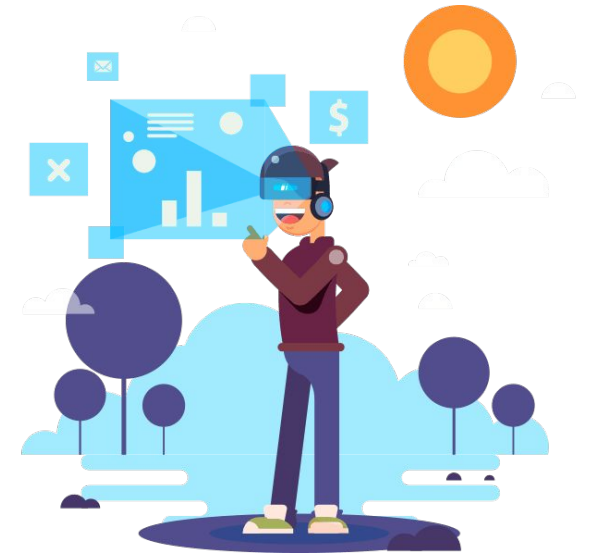
KNIFE



GUN



LIGHTER

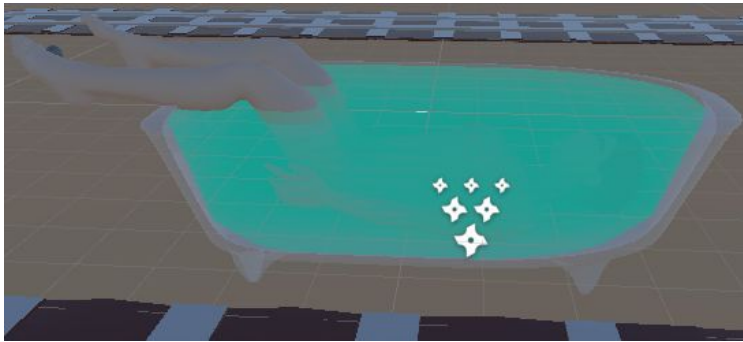




# Prototype Developed III

Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation

- Interaction within the scene using these *grabbable* objects:
  - Each one of these interactable objects represent a form of suicide.



MAN IN BATHTUB (DROWNING)



GUILLOTINE



HANGED MAN

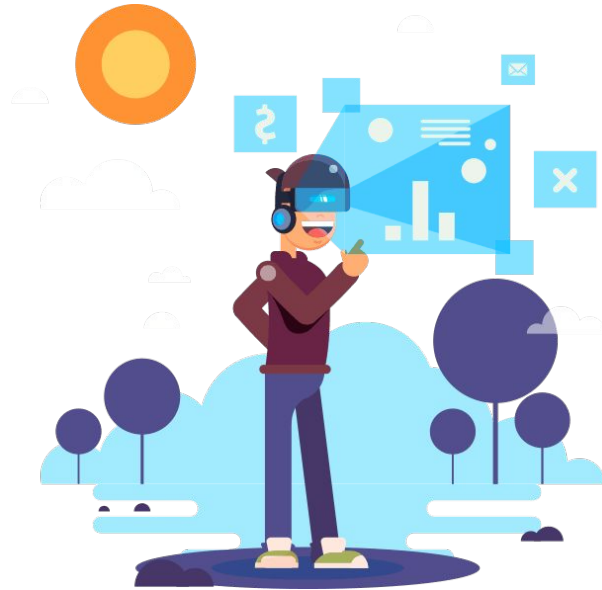


MAN HOLDING A KNIFE

# Prototype Developed IV

Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation

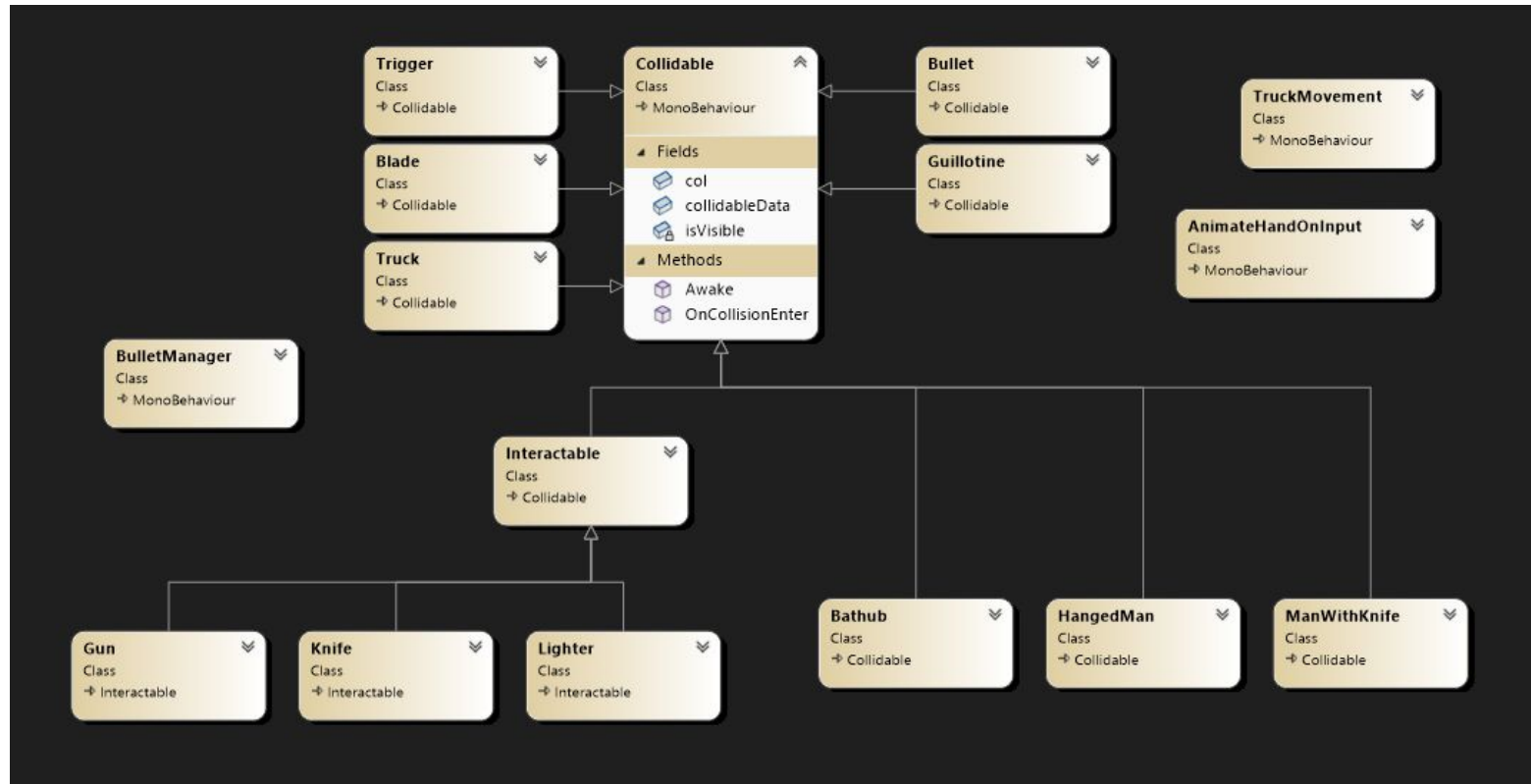
- Turn around on the truck that has a defined movement path



TRUCK & RAILWAY

# Architecture

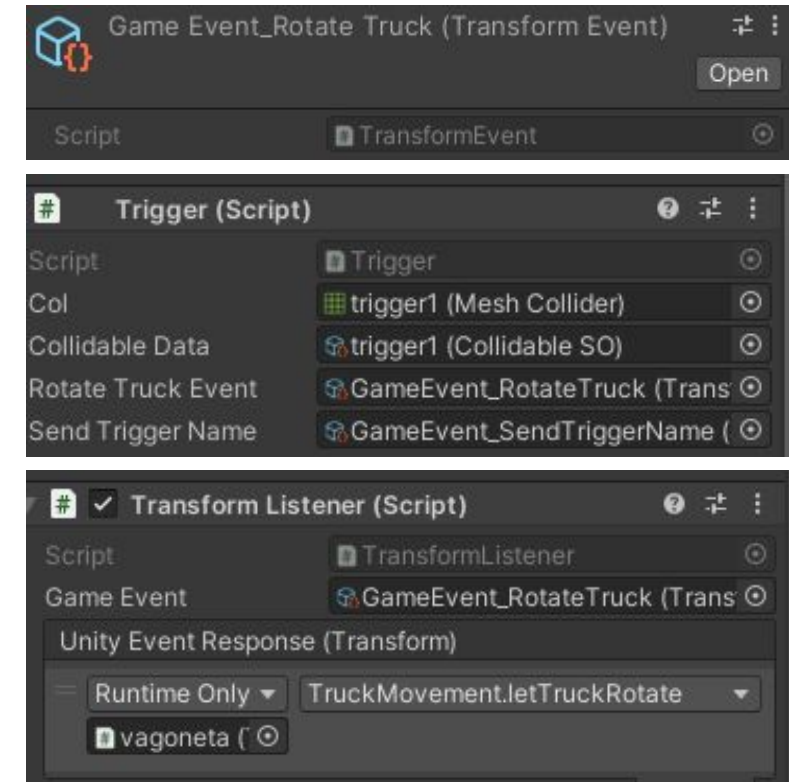
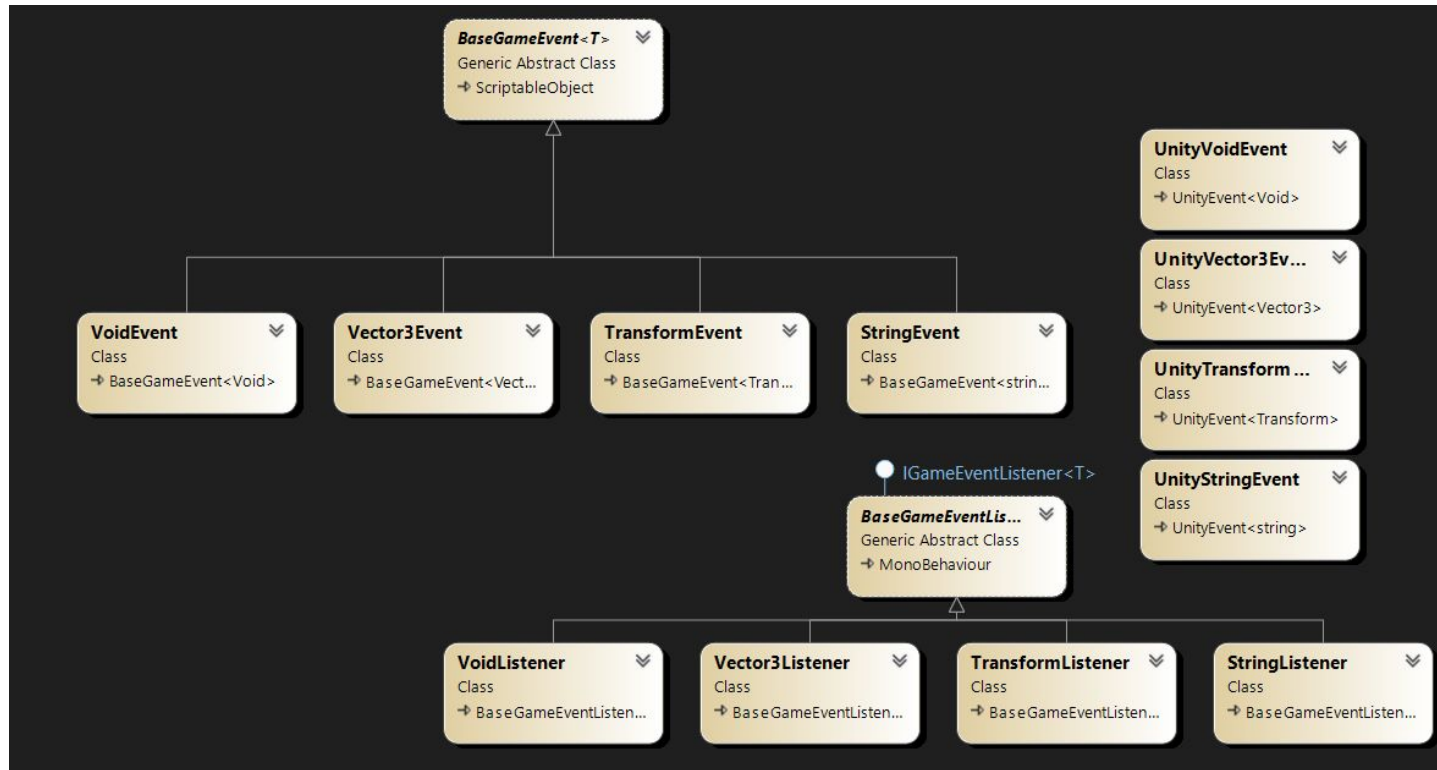
Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation



ARCHITECTURE, INCLUDING  
COLLIDABLE HIERARCHY

# Architecture II

Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation



CUSTOM GAME EVENTS (USING  
SCRIPTABLE OBJECTS)

# Project Structure

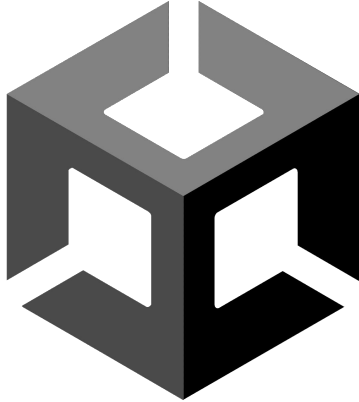
Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation

- 1 scene;
- 12 materials;
- 12 meshes;
- 15 scripts (excluding Game Event System);
- 27 scriptable objects created.



# Tools Used

**Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation**



## GAME ENGINE: Unity

- Previously acquired knowledge;
- Lots of documentation and examples for VR.

## PACKAGES/ASSETS USED:

- XR Interaction Toolkit - allows the creation of AR/VR experiences; it gives tons of input assets and the VR simulation;
- MockHMD XR Plugin - to develop and test the scene without a real VR headset;
- Universal RP - related to post-processing; to make an animated shader using ShaderGraph;
- Unity Particle Pack 5.x - to get the waterfall and fire particle effects;
- Oculus Hand Package - to get the hand models.





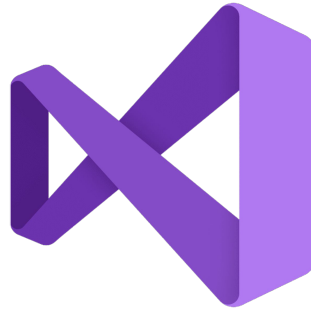
# Tools Used II

Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation



## MAKEHUMAN

- Making of the humanoid meshes using predefined examples;
- Making of humanoid poses.



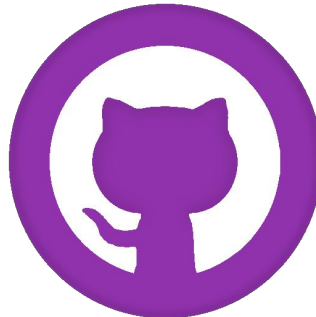
## VISUAL STUDIO

- Code editor.



## BLENDER

- Modeling of objects;
- Making of humanoid poses.



## GITHUB DESKTOP

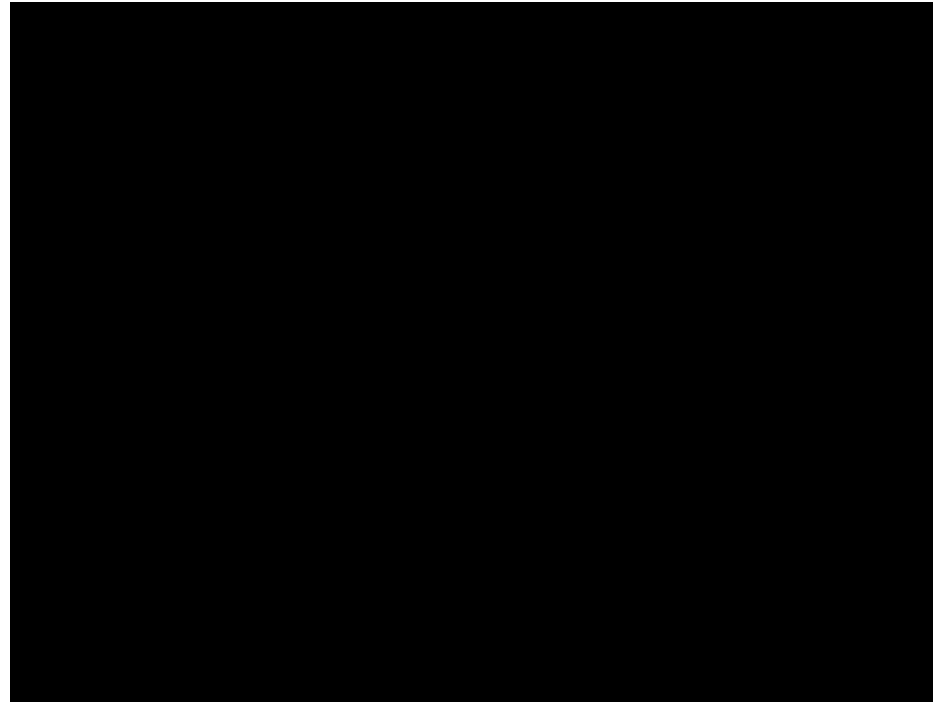
- Version control.



## HARDWARE: *Oculus Quest 2*

# Demo Video

Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation





# Expectation vs Reality - Project Objectives

Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation

- Not all of the expected outcomes were achieved
  - Although the main ones are still present, such as the *grabbing* of objects and interaction;
  - The scene lacks models and visual effects, but that was not the focus of the work
  - Some things, like the interaction with the “man holding a knife”, needed to be simplified - WORK SMARTER, NOT HARDER!



# Main difficulties

**Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation**

- Developing mostly without a real VR headset, while using the Mock HMD Display - it's hard to test during runtime;
- Calibrating the VR headset;
- Make the collisions work properly after *grabbing* an object.



# Future work

## Empathic Protagonist - Creation of a digital game with a protagonist that struggles with depression and suicidal ideation

- Add *user interface* - a restart menu (for when the user gets stuck in a specific *puzzle*);
- Use VR haptics - make the controllers vibrate when a monster would grab the player's hands and/or arms;
- Add more objects and effects to the scene, to make it more immersive and creepy (e.g. blood);
- Add sound effects;
- Improve the project code architecture.

