



# **CHRYSA LIS: A TOP-DOWN GAME DEDICATED TO MENTAL HEALTH ISSUES**

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## Assignment of bachelor's thesis

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### Instructions

Create a game in the Godot engine combining a top-down and platformer perspective and mechanics that will focus on overcoming the main character's mental problems.

- 1) Conduct a brief research on mental disorders or phobias.
- 2) Analyze them from the perspective of game design and possible use. Try to ensure the accuracy and plausibility of individual mechanics of disorders or phobias.
- 3) Create a game design document and design the game in connection with the previous analysis.
- 4) Create a prototype of the game in the Godot engine.
- 5) Test the game from a user perspective.
- 6) Publish the game on a suitable platform.

Czech Technical University in Prague

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In Prague on May 16, 2025

## Abstract

This bachelor's project focuses on the development of a prototype for the game Chrysalis, created in the Godot engine. The game explores mental health struggles through gameplay. It alternates between a top-down perspective, used for exploration and daily life activities of the characters, and a platformer perspective, which symbolizes battles against various mental health disorders and phobias. This thesis involves research on chosen disorders and phobias, analysis of how they can be represented through game mechanics, and the design of a prototype based on this analysis. Chrysalis offers an engaging experience that helps players empathize with mental health challenges and encourages them that mental health conditions do not define them and life can get better.

**Keywords** mental health, game, Godot, top-down perspective, platformer perspective

## Abstrakt

Tato bakalářská práce se zabývá tvorbou prototypu hry Chrysalis v enginu Godot. Hra prostřednictvím herních mechanik symbolizuje problémy s duševním zdravím. Kombinuje top-down perspektivu, ve které hráč prozkoumává okolí a každodenní život postav, s plošinovkovou perspektivou, kde probíhají symbolické bitvy proti různým duševním poruchám a fobiím. Práce zahrnuje výzkum těchto problémů, analýzu jejich možného ztvárnění v herních mechanikách a návrh prototypu na základě těchto poznatků. Chrysalis přináší poutavý herní zážitek, který pomáhá hráčům vcítit se do emocí spojených s duševními problémy a nabízí naději, že tyto obtíže je nedefinují a život se může zlepšit.

**Klíčová slova** duševní zdraví, hra, Godot, top-down perspektiva, plošinovková perspektiva

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## List of abbreviations

WHO	World Health Organization
ICD-11	International Classification of Diseases, 11th Revision
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, 5th Edition
OCD	Obsessive-Compulsive Disorder
OCPD	Obsessive-Compulsive Personality Disorder
CBT	Cognitive Behavioral Therapy
SSRIs	Selective Serotonin Reuptake Inhibitors
MRI	Magnetic Resonance Imaging
GDD	Game Design Document
UI	User Interface
HP	Health Points

# Introduction

Mental health is a very serious topic that is becoming more relevant each passing day. With the rise of technology and social media, people compare themselves to others more than ever before. That can also lead to isolation from the real world and overthinking. This and many other factors are big contributors to mental health problems being more common than ever before.

Video games have become one of the biggest forms of entertainment, reaching millions of players around the world. They are no longer just a way to pass the time — they have grown into a powerful way to tell stories, teach, and inspire. Unlike books or movies, games offer interactive experiences that immerse players in different perspectives, making them the protagonist of the story with their own decisions, being able to experience the consequences of their actions firsthand. That is why they can be one of the most powerful tools to touch people's hearts and change the way they think and feel. Sometimes, seeing a character go through similar struggles can be enough to bring comfort or understanding.

Several games have already explored mental health themes, such as *Hellblade: Senua's Sacrifice*, which portrays psychosis, or *Celeste*, which represents anxiety and depression. This shows that video games have the potential to not only entertain but also create awareness and empathy. However, these games focus on mainly one mental health condition, which is why I want to create *Chrysalis*, a game that explores multiple mental health disorders, phobias, and design it in a way that it can be extendable to include more conditions in the future.

In the research part of this thesis, I will explore mental health disorders and phobias, focusing on their key characteristics and symptoms. In the following analysis, I will examine how these conditions can be portrayed in *Chrysalis* through sensory representation, game mechanics and storytelling. In the last theoretical chapter, which is the Game Design Document, I will provide a structured plan for *Chrysalis*, detailing its gameplay mechanics, story and visual style. For the practical part of this thesis, I will create a prototype of the game, which will be documented in the implementation chapter. After

creating a prototype, I will conduct a playtest to gather feedback, share it in the testing chapter and note down possible improvements. The game will be published on a platform where it can be accessed by anyone interested in playing it.

# Chapter 1

## Research

To be able to represent mental health problems in video games, it is essential to understand what they are and how they affect people. This chapter will provide an overview of some mental health disorders and phobias, focusing on their key characteristics and how they manifest in people's lives. Understanding that is key for the analysis of how these problems can be represented through game mechanics and design in a respectful and meaningful way.

### 1.1 Mental Health Disorders

According to research, 1 in 8 people suffered from a mental disorder in 2019. [1] With COVID-19 raising the prevalence of anxiety and depression by 25% only in the first year, the number of people affected by mental health issues has risen even more. [2] Given the current circumstances, it is not a surprise that mental health issues are at a high point. The reality that we see on social media is very carefully crafted and edited to show only the best parts of people's lives. It is very easy nowadays to start comparing and feeling hopeless.

Mental disorders are not just about being in a bad mood or feeling sad. They are serious conditions that can affect a person's thinking, emotional regulation and behavior. However, even in today's society, there is still a stigma around mental health problems. Because these problems are not as visible as physical ones, they are often dismissed or not taken seriously.

The international standard for data, documentation and statistics of health conditions, including mental disorders, is the International Classification of Diseases (ICD-11) [3], which is the eleventh revision of the ICD developed by the World Health Organization (WHO) [4]. Its purpose is to collect and analyze data from different countries and regions, and unify it into a single standard. It is available online and can be accessed by anyone interested in learning more about health conditions. In contrast, the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) [5] is widely used for diagnosing



mental health disorders in the United States. Unlike the ICD, the DSM is focused exclusively on mental health disorders and it is published as a book that is not freely available online.

While there are treatment options, such as therapy or medication, many people do not seek help or do not even have access to effective care. [1] And even if they do, the stigma can make it hard to open up and accept the help they need. That is why it is important to raise awareness and show that mental health problems are not something to be ashamed of. They are just like any other health issue and should be treated as such.

### 1.1.1 Depression

Depression is a very common mental disorder that affects millions of people. According to the World Health Organization (WHO) [6], around 5% of adults suffer from it, and it is 50% more common among women than men. It can also lead to thoughts of suicide, which is the cause of death for more than 700 000 people every year. Although treatment is possible, more than 75% of people in non-wealthy countries do not receive it. It is still a wonder if depression is a maximized form of a mood experienced by a common person, or if it is a completely different mood in itself. [7]

#### 1.1.1.1 Paradox

According to Beck [7], the way a person suffering from depression views themselves can be very different from the objective reality. They might fail to see the positive things, because the negative point of view can get too overwhelming or prominent to look past. They might feel worthless even though they have achieved many things. This paradox is a common symptom of depression, where the person's perception of themselves is skewed by their mental state. They might also feel like a burden to others, even when they are loved and valued.

Even when they are presented with objective evidence, it can be very challenging for them to accept it. It is hard for them to do things they know would improve their state, and instead succumb to thinking and behavior that leaves them feeling even worse. This can lead to a vicious cycle of self-harming thoughts and actions, making it very hard to break free from the spiral without outside help.

#### 1.1.1.2 Depressive episodes

WHO [6] explains that depression can manifest in different patterns, depending on their recurrence, symptoms and other factors. A depressive episode is different from regular mood swings. They last most of the day, nearly every day, for at least two weeks. WHO identifies three main types of depressive episodes:

- **Single episode depressive disorder**, referring to a person experiencing their first and only depressive episode
- **Recurrent depressive disorder**, where the person has had more than one depressive episode
- **Bipolar disorder**, which involves alternating between depressive and manic episodes. During manic episodes, the person may experience heightened senses and feelings, such as euphoria or irritability, increased energy, talkativeness, racing thoughts, decreased need for sleep, reckless behavior and other symptoms.

#### 1.1.1.3 Symptoms

According to WHO [6], Cleveland Clinic [8] and Beck [7], some of the symptoms of depression may include:

- **Mental symptoms:**
  - Feeling sad, hopeless, worried or empty
  - Feelings of guilt or worthlessness
  - Loss of interest in activities that were once enjoyable
  - Difficulty concentrating, making decisions or remembering things
  - Negative expectations
  - Low motivation
  - Distorted body image
  - Suicidal thoughts
- **Physical symptoms:**
  - Feeling very tired, having little energy, fatigue
  - Changes in appetite or weight
  - Sleeping problems

#### 1.1.1.4 Treatment

Effective treatments for depression exist, such as psychotherapy, medication or a combination of both. Effective psychological treatment includes cognitive behavioral therapy, behavioral activation, interpersonal therapy and problem-solving therapy. Antidepressant medication can have unwanted side effects, so it should be used with caution. [6]

There are also things a person can do by themselves to improve their mental state. Depression is related to and affected by physical health as well, so it is important to take care of the body as well as the mind. Exercising regularly,

sticking to a healthy diet and a regular sleeping pattern, cutting down on alcohol and caffeine, avoiding drugs and smoking, and keeping in touch with friends and family are factors that can significantly improve mental state. Though it can be hard to do these things for a person with depression, even small steps can lead to a big change. [6]

### 1.1.2 Social Anxiety

Social Anxiety is a type of anxiety disorder that causes intense fear of social situations. It affects approximately 5% to 10% people worldwide. The cause of it is still being researched, however the risk factors include genetics, overly controlling parenting and traumatic experiences. [9]

#### 1.1.2.1 Differentiation

Social anxiety disorder can sometimes be mistaken for a different condition. It is important to learn what makes it different from other disorders, or even from common traits like shyness, to truly understand its nature. Differences with some disorders are summarized in table 1.1.

Disorder	Differences from Social Anxiety Disorder
Generalized Anxiety Disorder (GAD)	In GAD, the focus of the worries is not limited to just social situations, but to everyday situations.
Autism Spectrum Disorder	While both disorders can involve withdrawal from social situations, individuals with Autism Spectrum Disorder may have difficulty understanding social cues and they may also have a general lack of interest in social interactions.
Depressive Disorders	Even though worries regarding social situations can appear in depressive disorders, they happen almost exclusively during depressive episodes.
Agoraphobia	Individuals with Agoraphobia are more so scared of unable to get help or escape in a dangerous situation. The fear of embarrassment or negative evaluation from others comes secondary.

■ **Table 1.1** Comparison of Social Anxiety Disorder with other disorders [10]

### 1.1.2.2 Symptoms

According to WHO [10] and Cleveland Clinic [9], some symptoms of social anxiety disorder include:

- **Physical symptoms:**
  - Blushing, sweating or trembling around others
  - Increased heart rate
  - Feeling nauseated
  - Not making eye contact
  - Having a stiff body posture
- **Mental symptoms:**
  - Worrying about embarrassing oneself, being judged or being rejected by others
  - Excessive fear or anxiety in social situations
  - Being self-conscious, embarrassed or awkward in front of other people
  - Losing one's train of thought, feeling mind "go blank"
- **Other symptoms:**
  - Avoiding social situations or enduring them with intense fear or anxiety

### 1.1.2.3 Treatment

Social Anxiety Disorder can be treated with cognitive behavioral therapy or medication. Antidepressants might only become effective after a few weeks of use, so it is important to be patient. Anti-anxiety medications take effect a lot quicker than antidepressants, however overtime they might become less effective and higher doses are needed to get the same result. That is why anti-anxiety medication is only a short-term solution. [9]

## 1.1.3 Obsessive-Compulsive Disorder

Obsessive-Compulsive Disorder (OCD) is characterized by unwanted, intrusive thoughts (obsessions) and behaviors to calm these thoughts (compulsions). It affects approximately 1% to 3% people worldwide and it is considered one of the most disabling disorders. [11] This disorder can manifest in many different ways, because the nature of obsessions and compulsions varies widely.

### 1.1.3.1 Obsessions and Compulsions

Obsessions are intrusive thoughts, images or urges that can cause anxiety and other issues. They are repetitive, time consuming and can be very hard to control. They can have different themes, such as need for symmetry, aggressive or taboo thoughts or fear of contamination. These thoughts might often be irrational or exaggerated, but they can still feel impossible to let go of. They are followed by a need to perform certain actions to calm the anxiety, which are called compulsions. [11]

Compulsions are behaviors or even only mental processes that a person feels driven to perform due to obsessions. They can feel like they are the only way to stop the anxiety, even though they might not even be directly connected to the issue at hand. The effect of doing the compulsion is only temporary, and that leads to a vicious cycle that can worsen over time. That is why the compulsion might become more and more elaborate and time-consuming. [12]

### 1.1.3.2 Differentiation

OCD might often be confused with other disorders that also involve intrusive thoughts or compulsive behaviors. However, there are some differences that set these conditions apart. In table 1.2, I explore some of these differences.

### 1.1.3.3 Symptoms

According to the WHO [14], Cleveland Clinic [13] and the National Library of Medicine [11], symptoms of OCD may include:

#### ■ Obsessions:

- Need for symmetry, perfection and neatness
- Fear of contamination
- Aggressive or taboo thoughts

#### ■ Compulsions:

- Avoiding situations that trigger obsessions
- Compulsively confessing about obsessions to others
- Checking things repeatedly
- Washing hands often
- Collecting or hoarding items
- Rituals related to numbers (counting, doing a task a specific amount of times, avoiding certain numbers)

Disorder	Differences from OCD
<b>Obsessive-Compulsive Personality Disorder (OCPD)</b>	People with OCPD are very preoccupied with perfectionism, organization and control. They might not realize that there is anything wrong with their behavior, because they simply take it as part of their personality. People with OCD are usually aware that there is something wrong, and accept the idea of professional help. [13]
<b>Depressive Disorders</b>	Rumination in depressive disorders involves negative thoughts regarding self, such as self-criticism and guilt. Depressive disorders also involve low mood or lack of interest in activities, which is not a diagnostic feature of OCD. [14]
<b>Anxiety or Fear-Related Disorders</b>	OCD obsessions are intrusive, irrational, and accompanied by compulsions, whereas anxiety disorders negative thoughts are focused on specific situations or events that the disorder is related to. [14]

■ **Table 1.2** Comparison of Obsessive-Compulsive Disorder with other disorders [14]

#### 1.1.3.4 Treatment

Like many other disorders, OCD can be treated with cognitive behavioral therapy (CBT). Exposure and response prevention is a type of CBT that is especially effective. It involves exposing the individual to the source of their obsessions, preventing them from performing compulsions and helping them learn to cope with the anxiety in a productive way. Medication can also be used, such as selective serotonin reuptake inhibitors (SSRIs). [11]

## 1.2 Specific phobias

A specific phobia is an intense fear of an object, situation, or activity. Unlike general fears, which are a natural response to danger, phobias can be very excessive and irrational — the level of the fear might not match the actual danger. People can go to great lengths to avoid situations where they would have to face the source of their fear. [15]

The two most common effects of fear are quite contrasting. The first one resembles an animal deathfeigning — becoming motionless and silent. The sec-

and one is the fight-or-flight response, which can involve screaming and running away. [16]

### 1.2.1 Development

Specific phobias can be developed in different ways. They can be a result of a traumatic experience, such as being bitten by a dog. However, they can also be developed without prior experience — genetic, developmental and other factors can play a big role. For example, children might naturally be scared of the dark without having any prior negative experience. With habituation, which is the process of reducing emotional reaction to a stimulus by repeated exposure, the fear might subside over time. [17]

### 1.2.2 General symptoms

Phobias have a lot of common symptoms, because they are all based around the same principle – an intense fear of a specific object, situation or activity. According to Cleveland Clinic [18], some of them include:

- **Physical Symptoms:**
  - Increased heart rate
  - Sweating
  - Shaking or trembling
  - Shortness of breath
  - Feeling dizzy or lightheaded
  - Nausea or pallor (blood rushing out of the face)
- **Mental Symptoms:**
  - Intense fear or anxiety
  - Panic or need to escape
  - Disconnection from your own body or from reality
- **Behavioral Symptoms:**
  - Avoidance of feared object/situation
  - Changing your life around to avoid the trigger

### 1.2.3 Treatment

Phobias, being rooted in the mind, can be treated quite well with therapy. Exposure therapy is a common treatment for phobias. There are two main

ways to do it – systematic desensitization and flooding. Systematic desensitization involves starting slow, with less intense exposure to the trigger, and gradually increasing the intensity. Flooding, on the other hand, involves immediate exposure to the trigger. Exposure therapy can be done in real life, or imaginal. Imaginal exposure is the only way to use exposure therapy in some cases, because the trigger might be dangerous to actually face in real life. [18]

#### 1.2.4 Claustrophobia

Claustrophobia is characterized by an intense fear of tight or enclosed spaces. Around 12.5% of people worldwide suffer from this condition. A claustrophobic person might have trouble concentrating and functioning when they are in tight-fitting spaces. [19]

Claustrophobia can be triggered in many different situations, such as in:

- Elevators
- Airplanes
- Trains
- MRI machines
- Small rooms without windows or with unopenable windows [19]

#### 1.2.5 Arachnophobia

Arachnophobia is an intense fear of spiders. It is one of the most common phobias, affecting around 3% to 15% of people worldwide. [20]

Arachnophobia can be triggered by:

- Seeing a spider (both in real life or in pictures)
- Seeing spider webs (both in real life or in pictures)
- Thoughts about spiders or spider webs
- Speaking about spiders or spider webs [20]

#### 1.2.6 Nyctophobia

Nyctophobia is an intense fear of the dark. It is a common fear among children, but it can also affect adults. People with this phobia might avoid going outside when the sun sets. It can also make it hard to sleep well at night. It is estimated that almost 45% of children are scared of the dark, even though this fear might go away on its own with time. [21]

Nyctophobia can be triggered by various situations, like:



- Being in a dark room (like a movie theater)
- The sun going down
- Trying to sleep at night
- Thoughts about the dark
- Watching movies with nighttime scenes [21]

## 1.3 Treatment

There are many different ways to treat mental health conditions. To be able to represent the road to recovery in the game, it is important to understand the gist of the different treatment processes.

### 1.3.1 Cognitive Behavioral Therapy

Cognitive behavioral therapy (CBT) is a type of psychotherapy that focuses on changing negative thought patterns and behaviors. It is one of the most common ways to treat or manage mental health conditions.

#### Principles

CBT is based on the idea that our issues are partly based on problematic or unproductive thought patterns, problematic core beliefs about the world and oneself, or patterns of unhelpful behavior learned over time. It is then believed, that relearning these patterns can help the person with coping with their issues better. [22]

#### Procedure

CBT usually involves a therapist and a patient, and takes place over a series of sessions. It is based around skill-based conversations, where the patient should feel safe, supported and not judged to feel comfortable with opening up.

The therapist will first attempt to gain an understanding of the patient's issues, give them space to discuss the challenges they faced, the symptoms they have noticed and other important factors. The next important step is asking questions about said issues, gaining insight into the patient's thought patterns and beliefs. They explore the answers together, trying to uncover any problematic thought processes.

Asking questions and letting the patient explore their own thoughts while leading them the right way is key, because it helps them understand their own thought patterns and beliefs better than if the therapist were to just tell them. Working together, helping the patient recognize problematic thoughts and behaviors is a very important step in the process.

The patient may also be asked to keep a journal to track their responses to different situations, to recognize the problematic ones better and to be able to work on them. When a problematic response is recognized, the therapist can lead the patient the right way, showing how to make a change. [22]

### 1.3.2 Exposure Therapy

Exposure therapy is a type of CBT that is used to help people confront their fears. It is often used to treat phobias, post-traumatic stress disorder and panic disorder. [23]

#### Principles

Exposure therapy is based on the idea that avoiding the feared object or situation might only make the fear worse. Avoiding the fear can also increasingly worsen quality of life. By learning to confront the fear, the person can learn to manage their response to it better.

#### Procedure

There are a couple different ways to do exposure therapy. In **imaginal exposure therapy**, the patient is asked to only imagine the object, situation or activity they fear in their mind. **In vivo exposure therapy** involves facing the fear in real life, which might not always be possible to do if the object of fear is life threatening. In that case, the therapist can use **virtual reality exposure therapy** to simulate the feared situation. If the patient is more scared about the physical sensation that happens when they panic, **interoceptive exposure therapy** might be viable – this involves triggering these physical symptoms and learning that they are not harmful. [23]

Exposure therapy also has a few different types regarding the timing of it. In **graded exposure**, the patient first has to deal with the fear that is the most manageable for them, gradually moving up to the most intense one. In **flooding**, the patient is immediately exposed to their most feared situation. If the exposure experiences are too intense, **systematic desensitization** can be used. It involves relaxation techniques, such as deep breathing, to help the patient cope with the anxiety. [23]

## Chapter 2

# Analysis

This section analyzes the research from the previous chapter and explores how mental health disorders and phobias can be represented in video games. It focuses on how visuals, game mechanics and storytelling can be used to create a fun, but also meaningful experience that portrays these conditions accurately.

In Chrysalis, gameplay is divided into two perspectives: a top-down perspective, and a platformer perspective. Since the representation of mental health conditions differs between these perspectives, this analysis will examine how each could be used to portray these experiences accordingly.

### 2.1 Representation in Top-down perspective

The top-down perspective represents the real world in Chrysalis. It is used to show the characters' everyday lives and struggles in a realistic way.

#### 2.1.1 Depression

In the research, we explored the key characteristics of depression, such as the distorted self-image, lack of motivation and other factors. These could be represented in a few ways in the game.

##### Sensory representation

**Feelings of sadness or hopelessness** The world could be represented in dark or less saturated colors, with little light. This symbolizes the lack of joy and hope that a person with depression might feel.

**Paradox/Distorted self-image** When looking into a mirror, we might see a distorted version of the character.

**Low motivation and energy** The character's home could be messy and disorganized.

**Feelings of emptiness** At the start, the world could be silent, with no music, or with very sad music.

**Recovery** When the story progresses, the song could change into something more upbeat.

### Game mechanics

**Lack of energy** The movement speed could be slower than usual.

**Low motivation** Actions like cleaning the home or leaving the room might be blocked.

### Storytelling

**Negative self-talk** The character could have negative thoughts about themselves.

**Paradox** The player could be seemingly presented with possible choices for which thought process the character should follow, but all of them lead to the same negative outcome. This would represent the paradox that even when a person with depression knows of the objective reality, they might find it hard to look past their negative thoughts.

**Low motivation** When trying to do something productive, the character might postpone it or find excuses not to do it.

**Isolation** The player might not have the option to answer texts and calls. After the boss fight with the inner demon, these actions might become available.

## 2.1.2 Social Anxiety

In the research, we explored different characteristics of Social Anxiety Disorder. They are circling around the intense anxiety relating to social situations and what effects it has. These could be represented in a few ways in the game:

### Sensory representation

**Fear** The other characters could appear intimidating or judgmental. They could be highlighted while the other objects might appear a bit more dim. That could represent the intense focus on worrying about negative evaluation from other people.

**Uncomfortability** When the character holds a conversation with another character, their font could appear smaller than the usual font size to represent being uncomfortable or insecure.

**Blushing or trembling** The character could blush or tremble around other people.

**Anxiety** The character's heart rate could be heard or visualized and might increase when they are around other people. That would symbolize the anxiety rising in social situations.

### Game mechanics

**Avoiding social situations** Inability to come close to other people, or running back home after a certain anxiety threshold is reached. The character might be unable leave their house or answer texts and calls.

### Storytelling

**Negative expectations** The character might worry about other people evaluating them negatively.

**Losing train of thought** The player could be presented with dialogue choices that suddenly disappear, representing the character's mind going blank. There could also be dialogue choices that appear weird or out of place, representing the character's fear of saying something wrong.

## 2.1.3 Obsessive-Compulsive Disorder

The key characteristic of OCD is the presence of obsessions and compulsions. These could be represented in a few ways in the game.

### Sensory representation

**Need for symmetry, perfection and neatness** Imperfections, like a slightly crooked picture or a misplaced object could be highlighted or hard to ignore for the character. Subtle sounds, like a clock ticking unevenly, could also be used

to attempt to trigger the character. Objects like pictures could wobble slightly every now and then, creating a repetitive cycle of obsessions and compulsions.

### Game mechanics

**Repetitive actions** The need to perform compulsions, like checking if the door is locked multiple times or counting objects.

**Inability to perform certain tasks** Unable to perform certain actions, like going to bed or leaving the house, until a compulsion is performed.

**Counting objects** The player might be forced to count objects in the room, and if they do not do it correctly, they have to start over.

### Storytelling

**Obsessions** Obsessions (intrusive thoughts) could be presented as inner monologue using on-screen text or whispered audio. To differentiate from OCPD, the character should show a form of self-awareness that the thoughts are irrational.

**Compulsions** The character could have an inner monologue about the compulsions that they feel the need to perform in order to calm the anxiety.

**Loops** The inner monologue regarding obsessions and compulsions could be repetitive, showing that the character is stuck in a looping thought process.

## 2.1.4 Specific phobias

Different phobias often have the same symptoms, because they are all based around fear, so they will have similar representation. However, the situation where this feeling will trigger differs on the phobia itself.

### Sensory representation

**Panic** The screen could blur, darken, or take on a shaky effect when the phobia-triggering object or situation appears.

**Shock and fear** When the trigger is first seen, there could be a loud sound. Afterwards, the music could become silent, only hearing heartbeat.

**Increased heart rate** The heartbeat could be heard and visualized, increasing when the character is in a situation that triggers their phobia.

**Nausea and pallor** The character could turn a bit more green, pale or harder to control.

**Trembling or sweating** The character could start shaking slightly or have small drops of sweat on their forehead. Sweating could also be represented by sweat drops flying around the character.

### Game mechanics

**Deathfeigning and fight-or-flight responses** The character might stop being able to move, or their movement speed might be changed.

**Tunnel vision** The screen could be obstructed by some objects like clouds or fog, making it hard to see where to go.

**Disconnection from reality** The character could be unable to interact with objects or people after the triggering situation happens.

### Storytelling

**Flashbacks or Memories** To represent the origins of the phobia, the character could experience flashbacks or vivid memories triggered by the situation or object, helping to understand the backstory to their fear.

**Avoidance** The character could be planning to avoid the situation that triggers their phobia using inner monologue.

## 2.2 Representation in Platformer perspective

The platformer perspective represents the inner world of the characters in Chrysalis. It portrays conditions in a symbolic, metaphorical and exaggerated way. Some of the levels also feature boss fights, which can be used to represent fighting against the condition itself.

### 2.2.1 Depression

#### Sensory representation

**Paradox, distorted self-image** The character could be represented in a negative way, such as a skeleton or a shadow. This would symbolize the distorted self-image and the paradox of how the character sees themselves versus how they are perceived by others. With story progression, the character could change into a more colorful and lively version of themselves, representing the potential that they had all along.

**Feeling sad, hopeless and empty** The world should have negative, depressing aesthetics, such as a post-apocalyptic world, a cemetery or a dark forest. For a more realistic representation, the world could also be a messy, dark apartment, representing the home of a person with depression that does not have the motivation to clean it up.

**Paradox/Distorted self-image** In the last phase of the boss fight, the boss could transform into a mirrored version of the character, showing that in reality they were fighting against themselves.

**Boss design** The boss of the depression level could take many different forms. On one hand, it could be represented as a giant, heavy armored knight, moving slowly and hitting hard. This version could symbolize the burden and weight that depression holds over a person. On the other hand, it could be represented as a shadowy figure that moves quickly and unpredictably, symbolizing how depressive episodes might come out of nowhere and take over a person's life.

### Game mechanics

**Feeling very tired or having little energy** The character could have a stamina bar that drains quickly, representing the lack of energy. This could symbolize how hard it might be for a person with depression to bring themselves to do tasks.

**Lack of motivation** The character could be unable to perform certain actions, such as jumping or running, until a certain point in the story. The final boss could spawn chains that will bind the character, having to perform a certain action or combination of keys to break free. This would represent how hard it can be to find motivation and do tasks that might seem easy to others.

**Difficulty concentrating** The character could have a hard time focusing on the task at hand, represented by the screen shaking or blurring when trying to perform an action. This could symbolize the difficulty concentrating and making decisions that a person with depression might experience.

**Heavy burden** The burden that depression holds over a person could be represented by falling weights from above, which the player must dodge.

**Hopelessness** The character could have a depression indication bar, which would fill up when the character is getting hit by attacks, falling weights or chains. When the bar is full, the character could stop responding to controls, representing the feeling of hopelessness and suicidal thoughts. The screen could also darken, and the character could mention that they feel like giving up.



## Storytelling

**Negative expectations and hopelessness** The character's inner monologue could reflect pessimistic thoughts, expressing doubt about whether their actions matter or if things will ever get better.

**Feelings of guilt or worthlessness** The character might beat themselves up for not being able to perform certain actions, getting hit by enemies and other mistakes. These could also be represented by whispers in the background.

**Recovery** When things seem dim, the companion could step in, showing the character that they are not alone, offering a different point of view and showing that allowing other people to help can be beneficial. This would represent the importance of social support in recovery from depression.

### 2.2.2 Social Anxiety

#### Sensory representation

**Anxiety in social situations** The background could be represented as a crowd of people, or a stage with people watching. This setting symbolizes the situations that trigger social anxiety. There could also be eyes appearing on the screen, watching the character.

**Fear of being judged** Whispers and murmurs in the background could represent the character's fear of being watched and judged. The whispers could increase in intensity when the character stands still for too long or when they progress further in the level.

**Blushing** The character could blush or tremble when they are around enemies.

**Heart racing** There could be a heartbeat sound effect that gets more frequent when the character is around enemies. The screen could also shake slightly, representing the anxiety rising in social situations.

**Nausea** The character could turn a bit more green or pale when facing enemies.

**Boss design** The boss of the social anxiety level could be represented as a ball of eyes, symbolizing how a person with social anxiety might feel like they are being watched by everyone. It could also be a giant eye watching the character.

## Game mechanics

**Difficulty with eye contact** The character could behave differently when facing enemies, being harder to control and unable to fight. They might have to jump behind them in order to fight, to avoid eye contact.

**Anxiety in social situations** The character could have an anxiety bar, which fills up when they are around enemies. When the bar is full, the character could stop responding to controls, representing the feeling of panic and anxiety in social situations.

**Avoidance of social situations** There could be hiding spots where the character can hide from enemies and calm down. There could also be a stealth mechanic, where the character has to sneak around enemies to avoid being seen. The stealth mechanic could also grant invisibility, but if the character stays in this mode for too long, they could be exposed and notify the enemies.

**Being self-conscious** Spotlights that shine on the character could be spawned, eventually locking in and firing missiles.

## Storytelling

**Fear of being judged** The whispers in the background could mention negative things about the character, such as "They are so weird" or "Why are they acting like that?".

**Fear of embarrassment** The character's inner monologue could include anxious thoughts, questioning whether others are judging them or if they are acting strangely. Their self-doubt could grow stronger when making mistakes, like getting hit or spotted by an enemy.

**Recovery** With story progression, the whispers could change into positive things, such as "They are so brave" or "They are doing great!", or into something neutral that doesn't involve them at all, showing that not everyone is watching and judging them as much as they feared. In the final phase of the boss fight, the character could realize that it is not the boss that is attacking them, and that the spotlights are their own imaginations. When the boss is defeated, the boss could change into a regular person that does not even realize a fight has happened, showing that the character was fighting against their own assumptions, fears and insecurities. This could show the change of thinking that the character has gone through, symbolizing CBT treatment.

### 2.2.3 Obsessive-Compulsive Disorder

#### Sensory representation

**Need for symmetry, perfection and neatness** The background could be simple with perfectly aligned polka dot patterns to symbolize the need for symmetry and perfection. Some platforms could be slightly off, or the spaces between platforms could be uneven, inducing anxiety. There could also be a metronome sound in the background, sometimes ticking out of rhythm.

**Fear of contamination, washing hands** There could be green liquid dripping from the ceiling, creating puddles on the ground. In contrast, there could also be clear water or waterfalls on the map for the player to use.

**Boss design** The boss could be a representation of the triggers of OCD. It could be a giant, messy monster that is asymmetrical and has a lot of imperfections. On the other hand, the monster could also represent OCD itself, as a giant clock, representing the need to count and check things repeatedly. When the boss spawns, the background polka dots could become chaotic, and the metronome sound could become louder and more out of rhythm as well.

#### Game mechanics

**Anxiety** The character could have an anxiety bar that fills up when there are imperfections in the world.

**Need for symmetry, perfection and neatness** The player could be able to fix the platforms, align them or make them symmetrical. This would reduce the anxiety bar. The player could also only be allowed to jump on rhythm with the metronome sound.

**Collecting objects** There could be items on the map that the player can collect. Some of them might be inaccessible on purpose, to leave the player with the feeling of incompleteness.

**Counting** The items on the map that the player can collect have to be collected in a set order based on the numbers written on them.

**Doing a task a specific amount of times** The player might have to interact with the platforms a set amount of times to actually fix them.

**Fear of contamination, washing hands** When the player steps into the green liquid, they can get rid of the effect of contamination by stepping into the clear water. This could represent the compulsive need to wash hands or clean things.

**Exposure and response prevention** The key to defeating the boss could be to resist the urge to perform compulsions, like fixing the platforms. This will fill up the anxiety bar, but it will not have a negative effect. That could be the key to defeating the boss, showing that the character does not have to perform compulsions to feel better, but simply learn how to live with the uncomfortability of imperfection.

## Storytelling

**Recovery** The anxiety bar not having any negative effects when it is full could represent the exposure and response prevention therapy. It shows the character that they do not have to perform compulsions to feel better, and that they can learn to cope with the anxiety in a different way.

### 2.2.4 Specific phobias

#### Sensory representation

**Increased heart rate** The heartbeat could be heard and visualized, increasing when the character is in a situation that triggers their phobia.

**Feeling dizzy or lightheaded** The screen could shake slightly or blur when facing the phobia-triggering object or situation.

**Nausea or pallor** The character could turn a bit more green or pale when facing the phobia-triggering object or situation.

**Claustrophobia** The lighting could be dim, making the environment feel more enclosed and oppressive. There could be a lot of tight corridors or small rooms, creating a feeling of being trapped. The camera could zoom in slowly as the level progresses, limiting visibility.

**Arachnophobia** The background could be dark and gloomy, with cobwebs and spiders lurking in the corners. There could be spiders running around the level. The sound design could include creepy crawly noises, like skittering or hissing.

**Nyctophobia** The background could resemble a cave or a dark forest at night. The lighting could be dim, with only a few light sources scattered around the level. The sound design could include eerie noises, like howling wind or distant growls.

### Game mechanics

**Claustrophobia** The walls could gradually close in on the character, focusing on quick thinking and reflexes to escape. The corridors could collapse behind the character, creating state of panic and urgency. Doors could be really small to fit through, forcing the player to crawl or roll to get through them.

**Arachnophobia** The player could be forced to jump over spiders or dodge them. The player could also be forced to crawl through tight spaces with spiders, forcing them to face their fear.

**Nyctophobia** The player could be forced to navigate through dark areas with checkpoints that light the area up. If the player does not activate a checkpoint in time, the screen could darken, only seeing the character itself.

### Storytelling

**Claustrophobia** The key mechanic of the level could involve the player pausing and controlling their breathing, making the walls stop closing in. This could represent the character realizing that panic worsens the situation, and learning to manage anxiety can help.

**Arachnophobia** Since the spider enemies will not attack the player, the player could see that they are not dangerous. It might also make the player realize that spiders are not as scary as they thought, and that they are just a part of the environment. This represents exposure therapy, showing that the player does not have to be afraid of spiders, and that they can learn to cope with their fear in a different way. At the end of the level, there could be a friendly spider thanking the player for keeping the peace. They could also provide them with a silk thread to climb out of the level.

**Nyctophobia** The level could end with the realization that the scary sounds and whispers were never real, and that the character was just imagining them. Instead of a bright light solving everything, the player might learn to walk through the darkness without fear.

# Game Design Document

A Game Design Document (GDD) is a document that outlines the vision, design and mechanics of a game. It is essential for the development process, as it usually serves as a reference for the entire team or the individual.

## 3.1 Goals

The main goal of the game is to create a fun, engaging experience with a deeper meaning. The game should invoke emotion, showing the struggles of different conditions using gameplay mechanics, visuals and storytelling. The top-down perspective should represent the real world and display the symptoms of conditions in a realistic way, while the platformer perspective should represent the inner world of the characters, portraying their struggles in a more symbolic and exaggerated way.

## 3.2 Target audience

The target audience for the game are people, that are interested in mental health, video games and stories with deeper meaning. The game is also targeted towards people who are struggling with mental health issues, as it can help them feel seen and show them that they are not alone in their struggles.

## 3.3 Assets

The game mostly uses third-party assets to achieve its visual and audio aesthetic. The top-down world was created using assets from LimeZu [24], which are available on itch.io<sup>1</sup>. A significant portion of the game's music was posted by nickpanek620 [25] on Pixabay<sup>2</sup>. His tracks are marked as AI-generated

<sup>1</sup>Itch.io, accessed via <https://itch.io/>

<sup>2</sup>Pixabay, accessed via <https://pixabay.com/music/>

on the site. Other than that, sound effects for the game are from Epidemic-sound [26].

### 3.4 Characters

#### Companion

The companion is a small, cute glowing creature that serves as a guide and helper for the player. Its name is Ember and it can provide tips and support throughout the game. In the top-down perspective, it can interact with the in-game characters. On the contrary, in the platformer perspective, it breaks the fourth wall and talks to the player directly.

Ember shows up when the character finds themselves stuck because of their mental health condition. It provides the player with the possibility of accessing the character's inner world and lets them explore it, helping the character fight against their inner demons. When the level is beaten and the player is back in the real world, Ember disappears from the world and from the character's memory, symbolizing that the character has improved and is able to cope with their condition better on their own.

The initial design for Ember was created by OpenAI's ChatGPT language model<sup>3</sup> and is shown in figure 3.1a. The prompt used was: *"I need a sprite for my pixel art 2D game. I want to have a ball-shaped cute companion that is going to float around. I just need the front sprite. It should be blue, and have a cute face."* The final design and animations were created by me. The final design is shown in figure 3.1b and the animations can be seen in figure 3.2.



(a) Initial design of Ember by ChatGPT.



(b) Final design of Ember.

■ **Figure 3.1** Initial design of Ember from ChatGPT and the final design.

<sup>3</sup>OpenAI, ChatGPT. Accessed via <https://chat.openai.com>.



■ **Figure 3.2** The animations for Ember.

## Platformer character

The platformer levels have a main character called Chrysalis, who is a knight fighter. Her name stands for a pupa of a butterfly, symbolizing incoming growth. Chrysalis symbolizes the potential that everyone has to overcome their struggles and fears. The character is designed by JumpButton [27] and is shown in figure 3.3.

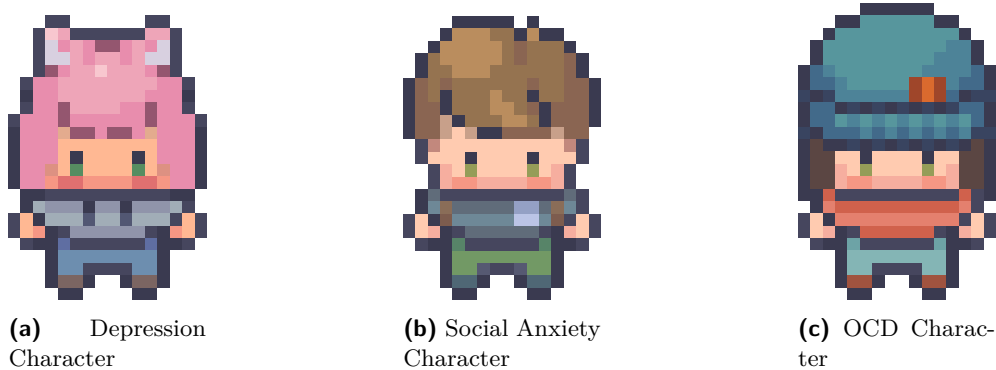


■ **Figure 3.3** Fighter for the depression level. Artwork by JumpButton [27] on itch.io.

## Top-down characters

The top-down perspective will have a few different characters, which will be used to represent the different conditions. The characters are created with a character generator from the Modern interiors asset pack by LimeZu [24]. The characters are shown in figure 3.4.





■ **Figure 3.4** Top-down characters for the game.

### 3.5 First phase

The first phase of the game focuses on depression.

#### Top-down perspective

The story begins in the first character's bedroom. The character's name is Ella and her design is shown in figure 3.4a. She is laying in bed with the lights off, feeling sad and unmotivated to get up.

The world is lowly saturated with messy furniture and a lot of clutter. Things are out of place, they seem depressing and when she looks into the mirror, she sees a skewed version of herself, highlighting pimples, seeming more pale with dark circles under her eyes, which can be seen in figure 3.5 along with the rest of the room. Ella moves slowly, and interacting with objects reflects the depressive state she is in. The mood is set with sad music called *Lake Night* by ChristmasKrumble666 [28], and is available on Freesound [29].

After a set amount of interactions, a blue glow starts showing from the closet, from which the Ember makes its entrance. After interacting with the Ember, the player finds themselves in the imaginary platformer world, symbolizing Ella's mind.

#### Platformer perspective

**Surroundings** The surroundings of the level have a similar setting as the top-down perspective, with very little color. It is set in an abandoned, post-apocalyptic world with broken buildings and no signs of life, created by owmyknees [30]. A preview of the background is shown in figure 3.6. For the tileset, *The Castle of Bones* by penusbmic [31] on itch.io is used. It is a tileset with a dark, scary aesthetic, which fits the theme of the level well.



■ **Figure 3.5** Ella's room in the depressive state.



■ **Figure 3.6** Parallax background for the depression level. Artwork by owmyknees [30] on itch.io.

**Character** At the start, the character is represented by a skeleton, shown in figure 3.7, that can barely walk, with the inability to perform any other actions. That is the representation of how the character feels inside, showing no confidence or motivation. After some actions, Ember summons Chrysalis, shown in figure 3.3, representing the potential that the character has had all along. At the start, Chrysalis has very low saturation that increases with level progression.



■ **Figure 3.7** Skeleton for the depression level. Artwork by AstroBob [32] on itch.io.

**Mechanics** Sprinting drains the Chrysalis's stamina quicker than usual, and her damage will be low at the start. The enemies in the level are skeletons, representing Ella's depressive self. When they are defeated, it improves Chrysalis's statistics and increases her saturation. The enemies might also drop items that can be used to heal the character, showing that by standing against depression, the character slowly heals. The player also has to dodge falling weights from above which slow the player down, representing the burden that depression holds over a person.

**Boss Design** The boss of the depression level is an executioner, representing the deadliness and unpredictability of depression. The executioner is a tall, shadowy figure with a large axe. The design is made by kronovi [33] and is shown in figure 3.8.

**Boss fight** The boss has a few different attacks:

- A short distance swing with the scythe.
- A spell to summon skeletons.
- A chain attack.
- Teleportation.

The summoned skeletons make movement on the different platforms more challenging if the player decides to focus on fighting the boss instead of them. The chain attack throws a chain towards the player, which binds them and forces them to press a combination of keys to break free. The boss teleports when the player gets too far away.



■ **Figure 3.8** Boss design for the depression level. Artwork by Kronovi- [33] on itch.io.

The boss fight has three phases, making the fight more challenging with each one. In the first phase, the boss can only summon one skeleton at a time, and the chain attack only comes from the boss. In the second phase, the boss can summon two skeletons at a time, and its cooldowns are shorter. In the third phase, killing the skeletons will become detrimental, as the chain attack will now not only shoot from the boss itself, but also from the existing skeletons. The chain attack will also have a longer combination of keys to press to make breaking free more challenging.

## Returning to the top-down perspective

After defeating the boss, the player is able to return to the top-down perspective. The companion disappears and Ella forgets about the fight. She is now able to deal with depression better, the interactions with the surroundings are a bit more positive, and the character is able to move faster. She can see herself as she really is in the mirror now. The room is a lot more colorful and the surroundings are now able to be tidied up.

Ella is now also able to leave the room and explore the house. She can clean up the bathroom with her newfound motivation, and notices that she ran out of toilet paper, mentioning that she should go to the store.

### 3.6 Second phase

The second phase of the game focuses on arachnophobia and begins when Ella walks outside of her villa.



■ **Figure 3.9** Ella's room after tidying up.



■ **Figure 3.10** Ella's house.



■ **Figure 3.11** Ella's bathroom.

### Top-down perspective

The world is colorful and bright. There is a small part of the world to explore, but there is only one possible path to take. On that path, there is a lurking spider that is unrealistically big. The spider is not aggressive, but since Ella is arachnophobic, she freezes in place and cannot move. The camera slowly pans to the spider and there is a loud heartbeat sound, symbolizing the panic. Ember appears and encourages her to face her fear, advancing to the platformer level. The spider is designed by Elthen [34] and is shown in figure 3.12.

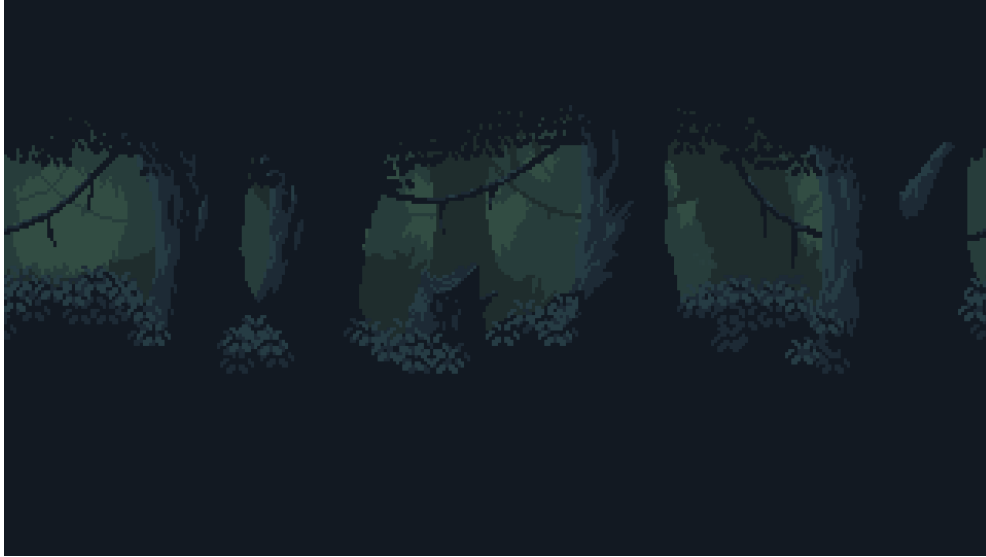


■ **Figure 3.12** Lurking spider. Design by Elthen [34] on itch.io.

### Platformer perspective

The level is set in a dark forest. The background is dark and gloomy, with cobwebs and eerie noises. The song by Josef Falkensköld [35], available on EpidemicSound [26] sets the emotional but creepy mood of the level. It is

designed by NekoIndie [36] and shown in figure 3.13. The player can not attack in this level, but they can jump and stomp spiders. The spiders are not aggressive at all, they are just walking around.



■ **Figure 3.13** Parallax background of a forest. Artwork by NekoIndie [36] on itch.io.

While progressing through the level, a poem called *Mercy* [37] appears on the screen bit by bit. An example is shown in figure 3.14. The poem is about being merciful to spiders, realizing that they deserve to live as much as we do. The player can decide whether to stomp on the spiders or not. The way they decide has an impact on the top-down perspective that follows.

## Returning to the top-down perspective

After finishing the platformer level, the player returns to the top-down perspective. Based on their decisions in the platformer level, the spider is either small and steps to the side, or it lays dead on the ground. The player can now walk around the world freely. When they walk further down the street, the game moves on to the next phase, switching focus to another character.

### 3.7 Third phase

The third phase of the game focuses on social anxiety.

## Top-down perspective

The character's name is Patrick and is shown in figure 3.4b. The phase begins with Patrick talking to a few strangers in the park, which is shown in



■ **Figure 3.14** Sample from the arachnophobia platformer level. Parallax background by NekoIndie [36] on itch.io, tileset by Craftpix [38] on itch.io and spider by RGS\_Dev [39] on itch.io.

figure 3.15. His font size is smaller than the other characters', symbolizing how he feels uncomfortable and timid in social situations. When he starts panicking, he runs away from the conversation and his anxiety bar fills up.



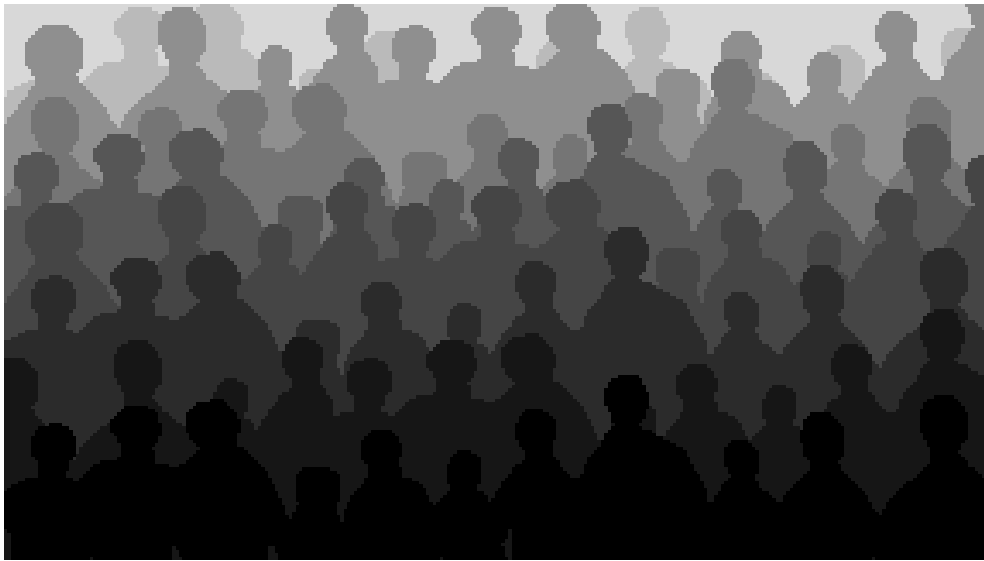
■ **Figure 3.15** Patrick talking with strangers.

When the player tries to get back to the conversation, the anxiety bar fills up even more. When it fills up completely, Patrick runs back to his apartment, stubbing his toe while running up the stairs. He locks himself and refuses to go outside. Ember then appears and encourages him to face his fear, advancing to the platformer level.



## Platformer perspective

**Surroundings** The level is set in a crowd, using a parallax background to make the crowd seem endless. It is shown in figure 3.16. There are whispers in the background, which get more frequent and louder when the player progresses through the level. The whispers are negative, saying things like “You’re so weird.” or “You should’ve stayed home.”. There are female whispers, created by the AI voice generator ElevenLabs [40], and male whispers, voiced by an acquaintance.



■ **Figure 3.16** Background of the social anxiety platformer level.

**Enemies** There are three different types of eye-shaped enemies that spawn around the player:

- **Red eye:** shoots three missiles in a row.
- **Yellow eye:** shoots three missiles simultaneously in a fixed spread.
- **Blue eye:** cries, slowing the player down if they walk through the tears.

These enemies can be defeated with one hit as they appear in large numbers.

Additionally, there is a roaming eye that can only be defeated from behind, symbolizing the discomfort with direct confrontation.

The platformer level progresses to the boss fight when the player reaches the perceived end: a shining light that they walk into. An example of the design of the platformer level is shown in figure 3.17.



■ **Figure 3.17** Social anxiety boss fight.

**Boss fight** The boss fight level is shown in figure 3.18. The boss is an enhanced version of the eye enemies from the level:

- **Blue eyeball:** tears drop from the top of the screen.
- **Red eyeball:** shoots many missiles in a row towards the player.
- **Yellow eyeball:** shoots missiles simultaneously in a full radius.
- **Grey eyeball:** turns vulnerable for attacks.

The eye blinks every few seconds, changing its eye color, symbolizing the current ability.

In the second phase of the boss fight, the boss is able to combine two colors at once, making the fight more challenging. It also starts moving around slowly, making it harder to dodge the attacks.

In the third phase, the boss only combines the blue and grey color, symbolizing sadness and vulnerability. The level starts filling up with tears, slowly filling the whole screen. The fight then ends and the eye transforms into a regular person. This person states that they were just trying to protect themselves, because the player seemed dangerous. The player then realizes that the boss was not trying to hurt them, and that they were just scared of being judged, the same way as them. This represents the realization that everyone has their own struggles and insecurities, and not everything is the way it seems at first.

The music for this level is made by Sirkoto51 [41], and is available on Freesound [29].



■ **Figure 3.18** Social anxiety boss fight.

## Returning to the top-down perspective

After defeating the boss, Patrick is able to walk out of his apartment again. However, due to his stubbed toe, he has to take the elevator, which triggers the fourth phase of the game.

### 3.8 Fourth phase

The fourth phase of the game focuses on claustrophobia.

## Top-down perspective

Patrick is in the elevator, which is small and cramped. The heartbeat sound starts playing and the screen starts shaking. Ember shortly activates the platformer level.

## Platformer perspective

The level is set in a small, collapsing apartment building. There are a lot of tight corridors and small rooms to navigate through. The player has to find keys scattered around the level to unlock doors and progress. The walls occasionally close in on the player, inducing panic and urgency.

When the walls are closing in, the player has to pause and control their breathing to stop the walls from closing in. The player has to press specific keys in the form of quick time events to calm down and stop the walls from closing in.

The player learns that panic worsens the situation, and that learning to manage anxiety can help. The level ends with the them realizing that the walls are not closing in on them, but that they are just imagining it. The player is then able to walk out of the level and back into the top-down perspective.

### Returning to the top-down perspective

After beating the platformer level, Patrick finds himself back in the elevator. The elevator now seems bigger and more spacious. The heartbeat calms down and the screen stops shaking. He is able to walk out of the elevator and back into the park, which leads to another switch of characters.

## 3.9 Fifth phase

The fifth phase of the game focuses on obsessive-compulsive disorder.

### Top-down perspective

This phase begins with Patrick walking out of the park. On the way, he drops something on the ground without noticing. That is when the last character makes an appearance. The character's name is Sarah and she is shown in figure 3.4c. In the dialogue, she gives small hints about her condition, like noticing that the item fell exactly to the middle of the sidewalk. After the conversation ends, Patrick walks away and Sarah mentions that she needs to go home now because it is getting late, foreshadowing the sixth phase of the game.

When Sarah returns back home, she first wants to wash her hands. When she starts walking to the bathroom, she notices that one of her pictures is crooked and feels the urge to fix it. This is shown in figure 3.19. When she fixes it, she can finally walk to the bathroom. After that, she is able to go to bed.

When she lays down in her bed, she starts worrying about whether she locked the door or not. She gets up and walks to the door to check it. As expected, the door is locked. She starts feeling bad about how she is acting and how she is not able to control herself. When she notices the messy bookshelf, it pushes her over the edge, which makes Ember come for the rescue. The game then switches to the platformer level. Sarah's house is shown in figure 3.20, her bedroom in figure 3.21 and her bathroom in figure 3.22.

### Platformer perspective

The level starts immediately as a boss fight.



■ **Figure 3.19** Crooked picture.



■ **Figure 3.20** Sarah's house.

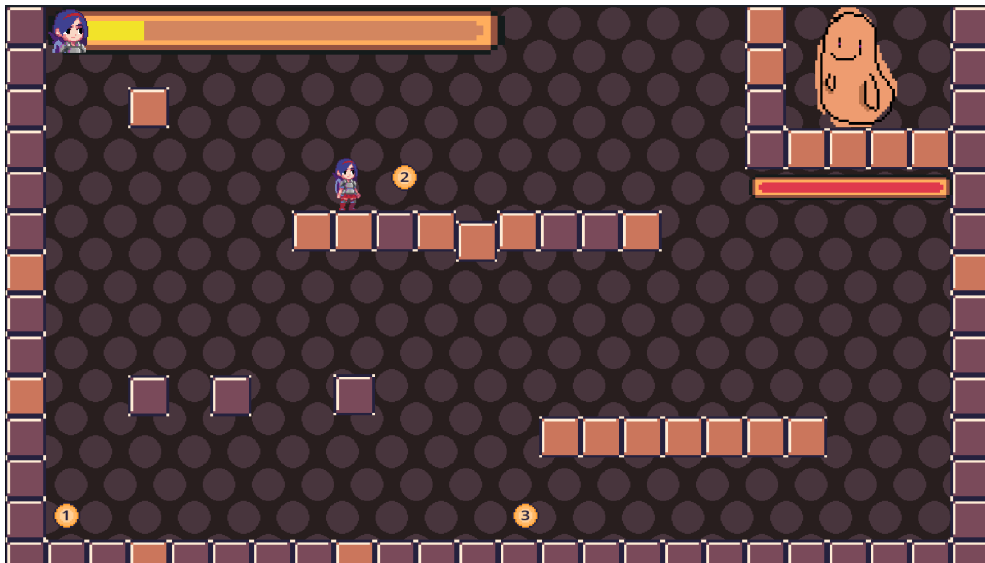


■ **Figure 3.21** Sarah's bedroom.



■ **Figure 3.22** Sarah's bathroom.

**Surroundings** The background of the level is a simple dark brown color with symmetrical polka dots, symbolizing the obsession with symmetry. The tileset is made by Kevin’s Mom’s House [42] and is in the form of very simple square shapes, available in two colors: orange and brown. It is shown in figure 3.23. The level’s mood is set by the song *Stupid Computer Error* by Stationary Sign [43], which sounds comedic and silly, complementing the level’s unseriousness. It is available on EpidemicSound [26].



■ **Figure 3.23** The OCD boss fight level design. Tileset made by Kevin’s Mom’s House [42] on itch.io.

**Boss design** The boss is an unfinished-looking blob with an asymmetrical face and body to go against the character’s obsession with symmetry. He is a clumsy character, self-aware about being in a video game.

**Boss fight** The boss himself is not aggressive, but more so playful. He comments about his own design, saying that the developers did not have enough budget to finish him. He comments on the player’s successes and failures, luring them into doing their compulsions. There are two types of events that can happen:

- **Unaligned platforms:** every few seconds, a new platform will become unaligned. The player has to bump into it three times to align it again.
- **Coins:** every few seconds, a random amount of coins will spawn. The coins are numbered and the player has to collect them in the right order.

When the player does not align the platforms or fails to collect the coins in the right order, Chrysalis’s anxiety bar fills up.

The point of the level is to realize that the player is not supposed to do the compulsions. When the anxiety bar is full, the boss's HP starts depleting. The boss then starts panicking and trying to make the player do the compulsions again. The player has to ignore the boss and not do the compulsions, which will make the boss panic even more. When the boss's HP is depleted, he mentions not having a dying animation yet, deleting his own sprite. Chrysalis then calls for the boss to come back and tells him she does not mind his imperfections and he can stay.

## Returning to the top-down perspective

After returning to the top-down perspective, Sarah is able to delay her compulsions. She can go to sleep without checking the door, fixing the crooked picture or washing her hands.

### 3.10 Sixth phase

The sixth phase of the game focuses on nyctophobia.

## Top-down perspective

When Sarah lays down in bed, the lamp is still on. She does not turn it off, because she is afraid of the dark. However, all the lights in the room turn off all of a sudden. Sarah panics and starts seeing shadows and hearing whispers.

## Platformer perspective

The level is set in a dark forest, which is shown in figure 3.13. The player has to navigate through the dark areas, using checkpoints in the form of lanterns to light up the area around, shown in figure 3.24. To make the level more challenging, there are also rock platforms that collapse when the player steps on them. The player has to be quick and smart about their movements, as the platforms will collapse after a few seconds.

When the level turns dark, the heartbeat sound starts getting quicker and louder, setting panic in the player. The player then has to find the next lamp with decreased visibility. The level's mood is set by the song *Heroes* by Marc Torch [44], available on EpidemicSound [26]. The lanterns are made by karsiori [45]

## Returning to the top-down perspective

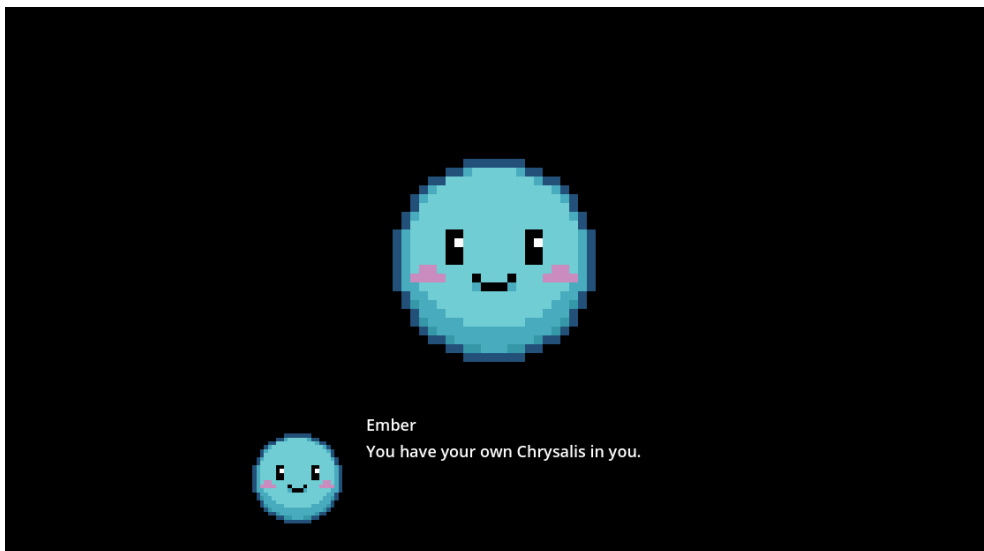
After defeating the boss, the player finds themselves back in the top-down perspective. At that point, Sarah has fallen asleep even with the lights off. The companion then appears and starts talking directly to the player, shown





■ **Figure 3.24** Nyctophobia platformer level. Lamps by karsiori [45] on itch.io, parallax background by NekoIndie [36] on itch.io, tileset by Craftpix [38] on itch.io.

in figure 3.25, thanking them for helping all the characters. The companion then disappears and the game ends. The music for this part of the scene was made by John B. Lund [46] and is called *Magical Dream Dust*. It is published on EpidemicSound [26].



■ **Figure 3.25** The final scene with Ember.

## Implementation

The prototype of the game is implemented in the Godot game engine. The game is built using the Godot 4.4 version, which is the latest stable version at the time of writing. For the dialogues, I use the Dialogue System plugin Dialogic [47], which is a free and open-source plugin for Godot that allows for easy creation and management of dialogues in games.

### 4.1 Game Manager

The `Game_Manager` node is a singleton that holds essential information about the game, making it accessible from any script. It plays a critical role in ensuring the game functions properly by preserving data between scenes. It holds information about the current player, manages the movement and interactions to be locked, and other important information.

Another example of its use is in managing background music in the top-down perspective. Without this, the music would stop and restart whenever the player transitions between scenes, such as when walking through a door.

Additionally, the `Game_Manager` provides mechanism for pausing and unpausing the game. This is achieved by dynamically adding the `Pause_Menu` scene to the current scene and pausing the other processes.

It is also responsible for fading in and out of the scenes. This is done by using a `ColorRect` node that covers the whole screen and fades in and out. The `Game_Manager` has a function that takes a scene name as an argument and fades out the current scene, loads the new scene, and fades it back in.

### 4.2 Save system

The game has a checkpoint-based save system. The `Game_Manager` has a variable that holds the current reached checkpoint and saves it to a file when the

player quits out of the game. In the Main Menu, if a save file is found, a button appears that allows the player to continue from the last checkpoint they reached.

For easy access to different parts of the game, there is also a Checkpoint Menu, from which the player can choose to start from any checkpoint in the game.

## 4.3 Top-down perspective

### 4.3.1 Dynamic sorting

In the top-down perspective, it is crucial to have a dynamic sorting system for the objects in the scene, as the player can walk behind and in front of them. The sorting is done with Godot's built-in YSort system, which automatically sorts the children of the node that the YSort is set on. It sorts the children based on their vertical position.

### 4.3.2 Interaction

Interaction between the player and the objects is done using a `RayCast2D` node, which is a child of the player. When it collides with an object, it saves the object's reference in a variable, which is used when the player hits the interact button. The `RayCast2D` node is set to only collide with the interactable objects, which are set to a specific collision layer. The player can only interact with one object at a time.

In the earlier stages of development, I used the player's `CollisionShape2D` node to check for collisions with the interactable objects. However, this would let the player interact with objects that they are not facing, which was not the intended behavior.

### 4.3.3 Interactable objects

Interactable objects are implemented using a custom script that extends the `StaticBody2D` node. It is signed as a class called `Interactable`. This script holds information such as the dialogue it should trigger, whether the interaction should happen automatically, the sounds to be played during interaction, and other properties.

In the `_ready()` function, it scans its child nodes to fill the script's variables. This allows for easy creation of new interactable objects without having to write a unique script for each one.

## 4.4 Platformer perspective

### 4.4.1 Animation system

The vast majority of the characters and enemies in the platformer levels have their animations stored in an **AnimationPlayer** node. This node allows calling methods or changing states of variables during the animation using keyframes. This was particularly useful for the Depression boss, because his teleport method needed to be called in the middle of the animation.

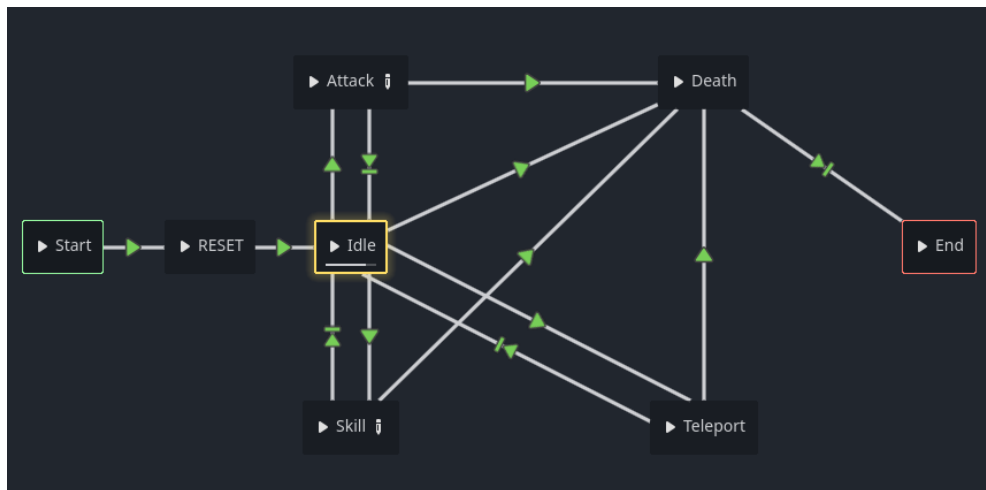
The transitions between the animations are done using the **AnimationTree** node, which provides a visual state machine for the animations. An example is shown in figure 4.1.

### 4.4.2 Indication bars

Indication bars, such as the health bar and the anxiety bar, are implemented using a **TextureProgressBar** node. This node allows for easy customization of the bar's appearance and behavior. In most levels, there is also a **Sprite2D** node next to the indication bar, that displays the icon of the character or the enemy.

### 4.4.3 Parallax background

Most of the levels use a parallax background to make the world feel more alive. This technique involves layering multiple background images using **ParallaxLayer** nodes and having them move at different speeds relative to the camera movement.



■ **Figure 4.1** Animation tree for the Depression boss.

## 4.5 First phase

### Top-down perspective

The mirror effect is created using an `AnimatedSprite2D`, that is Ella's edited sprite for the depressive effect. It has a `PointLight2D`, which serves as a mask using the *Mix* blend mode. The `AnimatedSprite2D`'s light mode is set to *Light Only* to clamp the sprite to the mirror.

The glowing light from the closet is implemented with a `PointLight2D` whose texture matches the shape of the closet door. Both of these effects are shown in figure 4.2.



■ **Figure 4.2** Effects in Ella's room.

After finishing the boss fight, Ella is able to tidy the environment. I implemented fixable objects that extend my custom `Interactable` class. Each fixable object holds two sprites: one representing its state before being fixed, and another for the after state. When the player interacts with such an object, the `before_sprite` is removed, and the `after_sprite` is revealed.

The interaction also updates a saved array inside the `Game_Manager`, tracking which objects have been fixed. This ensures that changes persist even if Ella leaves and later returns to the room.

### Depression platformer

In the depression platformer level, some of the key elements from the GDD were implemented to match the intended themes. The grayscale effect for Chrysalis, symbolizing the initial lack of hope, was achieved through a shader that dynamically adjusts saturation. This effect is tied to gameplay mechanics

where defeating enemies (skeletons) raises Chrysalis's damage and restores saturation.

The skeleton enemies, representing Ella's depressive self, were implemented as the primary obstacles for the player, wandering on the platforms. When a skeleton reaches the edge of a platform, it sits idle for a few seconds before turning around and walking to the opposite edge. This is implemented using a downward `RayCast2D` and a `Timer`. When the skeleton encounters a wall, it turns around immediately. There are ten skeletons in the level, and some of them are placed in tricky spots to make it harder for the player to find them.

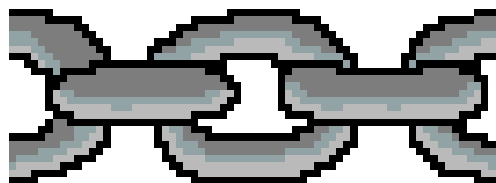
Certain features described in the design document, such as the stamina drain for sprinting, falling weights, and enemies dropping healing items, were not included due to prioritization of other core mechanics of the game.

## Depression boss

The depression boss fight includes all the planned mechanics from the GDD, such as scythe swings, skeleton summoning, teleportation, and the chain attack. These features were implemented across three phases, each becoming more challenging by increasing attack frequency, summoning more skeletons at once, and throwing the chains from the skeletons as well. The boss's cooldowns do not get shorter, because the fight is already challenging enough.

### Chain attack

The chain attack is implemented using an `Area2D` node. The sprite of the chain is designed to be repeatable, which allows it to be dynamically extended to the desired length and it is shown in figure 4.3. This is achieved using `CanvasTexture`, which enables easy manipulation of the texture's repetition by adjusting the *extents* variable.



■ **Figure 4.3** Repeatable chain texture.

When the chain hits the player, a key sequence is generated, which is a random combination of predefined keys. The keys are represented by `TextureRect` nodes, which are added to the scene as children of a `HBoxContainer` node. There are also `Label` nodes that show the keys to press.

On the *body\_entered* signal of the chain scene, the game calls the player's *get\_chained()* function. This causes the player to be unable to move and press

the key combination. I created a custom spritesheet for the chained state of the player, which can be seen in figure 4.4.



■ **Figure 4.4** Chained player.

## 4.6 Second phase

The top-down perspective of the second phase is implemented as described in the GDD.

### Arachnophobia platformer

The spiders are implemented as `CharacterBody2D` nodes, using `RayCast2D` nodes to detect edges and walls. They move back and forth and turn around when they reach a ledge or an obstacle. When the player stomps on a spider, it plays a death animation, and the global `killed_spiders` counter in the `Game_Manager` is updated.

The level displays quotes using two `Label` nodes attached to the `Camera2D` node. The quote itself is implemented as an `Area2D` node with timers that handle when the text fades in and out. Once a line finishes displaying, it is removed from the scene.

The cobwebs and eerie noises from the original design document were not implemented, as they were not essential to the gameplay.

## 4.7 Third phase

### Top-down perspective

The top-down perspective of the third phase was simplified compared to the GDD due to the following claustrophobia level not being implemented in this version of the game. The focus was on setting up Patrick's interaction with the other characters instead, while still getting across that he is socially anxious.

Patrick's dialogue uses a smaller font size than the other characters, created using a custom style in Dialogic.

After returning from the boss fight, Patrick's dialogue style is reset to the default style, making his font size larger.

## Social Anxiety platformer

Most elements described in the GDD for the social anxiety platformer were implemented, except for the roaming eye enemy.

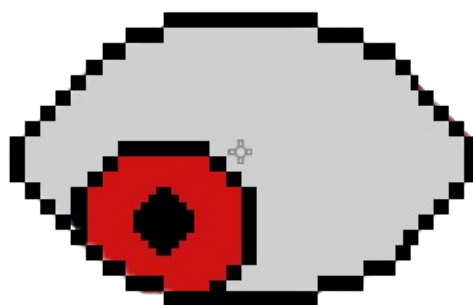
Whispers are preloaded using a **ResourcePreloader** to ensure Godot exporting them. Player progression, calculated based on position, adjusts whisper frequency through linear interpolation. Random whispers are played using dynamically instantiated **AudioStreamPlayer** nodes, allowing more recordings to play at one time. The whispers use a separate audio bus with the *Reverb* effect, which makes them sound more atmospheric.

The enemies include red eyes shooting sequential missiles, yellow eyes firing spread shots, and blue eyes spawning tears that slow the player. Each type uses **Timer** nodes and player tracking for targeted attacks.

For the floating eye enemies' stalking effect, it was important to divide the sprite into separate parts to ensure proper layering and functionality:

- **Sclera:** the white part of the eye, which is a simple **Sprite2D** node remaining at the back.
- **Iris:** the colored part of the eye, which is a **Sprite2D** node that is moved dynamically towards the player.
- **Outline and Blink:** the outline of the eye and the blinking animation, always in the forefront.
- **Light mask:** a light mask for the iris not to overflow, which is a **PointLight2D** node with a texture in the shape of the eye.

This effect is shown in figure 4.5.



■ **Figure 4.5** Floating eye enemy stalking effect.

## Social Anxiety boss fight

The social anxiety boss fight is implemented as described in the GDD. The boss has four unique states, which are represented by the color of the iris. The



states switch every time the boss blinks. Since the animation is set up using an `AnimationPlayer` node, the method to change the state is called in the middle of the blinking animation.

The blue ability function calculates tear spawn positions dynamically based on the viewport size and the camera's zoom level, ensuring consistent tear placement across different screen sizes.

In the second phase of the boss fight, the boss combines two powers at once. This was realized by separately creating textures for each of the combinations and then dynamically loading them into the iris sprite. The logic is shown in the code snippet 4.1. Some of the variable names are changed to match the context of this thesis.

```
var active_states = []
if gray: active_states.append("g")
if red: active_states.append("r")
if blue: active_states.append("b")
if yellow: active_states.append("y")

active_states.sort()
var joined_states = "_".join(active_states)
var file_name = "res://assets/eye_enemy/%s.png" % [joined_states]
iris.texture = load(file_name)
```

■ **Code listing 4.1** Dynamic loading the sprite of combined boss states.

## 4.8 Fifth phase

The fifth phase starts directly after the third phase. The fourth phase is not implemented in this version of the game due to time constraints.

### Top-down perspective

The top-down perspective of the fifth phase is implemented as described in the GDD. The crooked picture notification is implemented using the `Interactable` class and set to trigger automatically. The picture itself is a simple `Sprite2D` node that is rotated slightly to make it look crooked. When the player interacts with it, the rotation is set to zero.

To make sure that the player does not get blocked by the `Interactable` node when entering the main hall of the house from a different room after already fixing the crooked picture, the `Game_Manager` singleton holds information about whether this is the first time the player enters the house.

## OCD Boss fight

The OCD boss fight is implemented as described in the GDD and the design is shown in figure 4.6. The level has two main mechanics: the unalignable platforms and the coins. They were at first implemented with the intention of being used in a scrolling platformer level, so they had to be adjusted to fit the boss fight.



■ **Figure 4.6** OCD boss fight level design with unaligned platforms and pickable coins.

The unaligned platforms are implemented as `StaticBody2D` nodes with an `Area2D` node as its child for detecting the player stomping on them. The unaligning process is triggered by the boss fight scene. When a cooldown `Timer` runs out, it picks a random platform that is aligned and unaligns it. It also randomizes the vertical offset for the position. Based on the offset, the platform's top or bottom collision shape is enabled, depending on the direction of the offset.

The coin manager scans its child nodes for `CollisionShape2D` nodes, which stand for the available positions for the coins to spawn in. The boss fight scene randomizes the amount of coins to spawn, and the coin manager chooses positions for the coins. The coins are numbered using a `Label` node. When the player picks up the coins in the wrong order, the coins modulate to red.

The player has an anxiety bar that fills up or depletes based on the player's actions. The mechanic for beating the boss is to not do the compulsions – when the anxiety bar is full, the boss's HP starts depleting.

## 4.9 Sixth Phase

### Top-down perspective

The top-down perspective of the sixth phase is implemented as described in the GDD, with the exception of the mentioned whispers and shadows, that were supposed to show after the lights go out.

### Nyctophobia platformer

Except for the heartbeat sound, the platformer level is implemented as described in the GDD.

The lamps are implemented as **Area2D** nodes with a **PointLight2D** node as their child. When the player enters the area, the **PointLight2D** node's texture is scaled up with linear interpolation. They also symbolize checkpoints for the player – the checkpoint areas are placed on top of the lamps.

Rock platforms are **StaticBody2D** nodes that shake briefly before falling when triggered by the player. This behavior is controlled by two **Timer** nodes. The platforms reset after falling and include a sound cue to warn the player.

## 4.10 Publication

The prototype of the game is published on [itch.io](https://liaaq.itch.io/chrysalis), which is a popular platform for indie games. It is available for Windows and Linux, and can be downloaded from <https://liaaq.itch.io/chrysalis>.

## Chapter 5

# Testing

Testing was an essential component of the development process for the game, carried out in several phases to identify and resolve issues, enhance gameplay, and ensure a positive player experience.

The initial rounds of testing were informal, carried out through real-life play sessions and discussions with players.

### 5.1 Playtesting sessions

During the early stages of development, I conducted two informal playtesting sessions with friends and acquaintances.

#### First session

The first few chapters of the game were tested directly, while later chapters were described and discussed with players for feedback as they have not been fully implemented yet. The testing revealed additional areas for improvement:

**Checkpoints** One of the first testers became very frustrated due to the absence of a checkpoint system in the platformer levels. This feedback led to the implementation of a checkpoint mechanic, where falling resulted in the player respawning at the last checkpoint with the penalty of 20 HP.

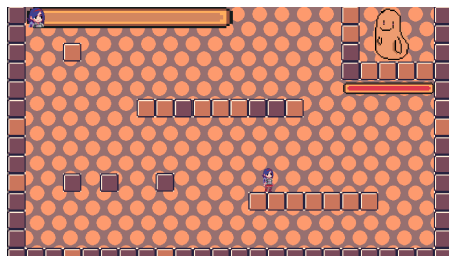
**Controls** The players were confused about the controls, especially in the platformer levels. The game did not provide clear instructions on how to control the character, leading to the players not realizing that they could sprint or jump higher by holding the jump button. To address this, a dedicated "Controls" button was added to the pause menu, which shows the controls for both the top-down and platformer levels.

**Skeleton enemy** The skeleton enemy in the depression platformer level was too weak, as it could not attack while playing the getting hurt animation. This locked them out of attacking in case of the player attacking them without stopping. To fix this, I allowed the skeletons to attack while getting hurt.

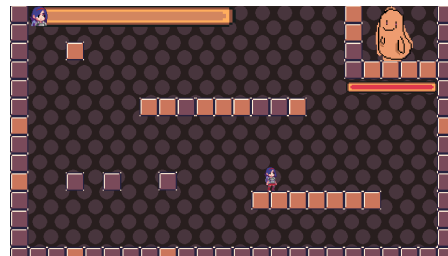
**Boss fight balance** The depression boss fight was too difficult to defeat. Players struggled to dodge the short-range attacks of the boss. To address this, I increased the range at which the boss can attack, allowing the player to lure the boss's attack and dodge it more easily.

**Platform visibility** It was noted that some platforms in the platformer levels were positioned too low, making them difficult or impossible to see within the camera's current view. This lack of visibility negatively impacted gameplay, as players could not anticipate jumps or plan their movements. To address this issue, the platforms were raised to ensure they remain within the camera's field of view, improving clarity.

**Distracting background** The background in the OCD platformer level was too bright and distracting, making it difficult for players to focus on the gameplay. To improve this, I adjusted the background color to a more muted tone, allowing players to concentrate on the level's challenges without being visually overwhelmed. This change is shown in figure 5.1.



(a) Old background.



(b) New background.

■ **Figure 5.1** Background change in the OCD platformer level.

## Second session

In the second playtesting session, the whole game was ready to be tested. This session revealed several issues and areas for improvement:

**Skeleton enemy** The skeleton enemy would not die if the last hit happened while it was attacking. This was caused by a missing transition between the attack animation and the death animation.

**OCD boss dialogue** When finishing the OCD boss fight, the last dialogue would trigger for a second time while the scene was changing. This was caused because the dialogue was triggering in the `__process()` function automatically when the boss's HP was depleted, which made it trigger repeatedly.

**Crooked picture** In the OCD Top-down level, after entering another room and coming back, the crooked picture collision was active again, making it impossible to walk down the stairs.

**Chrysalis's texture** When dying in platformer levels, the player would respawn with the `flash_white` variable being set to true. This caused the texture to be very light until the player gets hit again. Additionally, Chrysalis's saturation level in the depression platformer level was not reset after death, which allowed the player to finish the level without defeating all the skeletons.

**Social anxiety platformer** The testers were confused about what they should do in the social anxiety platformer level. To address this, I added a dialogue to the start of the level, where Ember says, "Keep moving forward!", hinting at the goal of the level.

These issues have been fixed in the final version of the game.

## 5.2 Online playtesting

After implementing the changes from the playtesting sessions, I published the game on [itch.io](https://itch.io) and shared it with friends, acquaintances and other students. The game has been downloaded 38 times for Windows and 6 times for Linux. I also created a survey to gather feedback from players. The survey included questions about the mental health symbolism, difficulty, and overall experience. The survey has been filled out by 14 players, and some of them also sent detailed feedback privately.

The playtesting revealed numerous issues with the game, including unexpected bugs. Thanks to a variety of testers using different PCs, several bugs were uncovered that would not have been apparent on my own setup. Some players with higher-end hardware experienced the game loading certain elements in a different order, exposing issues such as improperly timed events, unintendedly overwritten variables or areas where I had forgotten to lock mechanics behind delta-based calculations.

I actively fixed bugs throughout the day, updating the game multiple times in response to player reports. This iterative process ensured a more refined prototype and showed how valuable testing the game in diverse testing environments is.

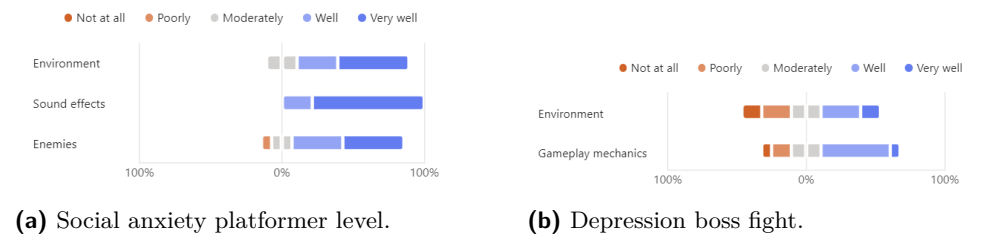
5.2.1 Survey results

User experience issues

The survey results revealed that despite my attempt to clarify controls by including them in the pause menu, the vast majority of players still struggled to know how to control the platformer character. To address this, I added a brief tutorial dialogue, where Ember instructs players to hold space to jump higher and hold shift to sprint. Additionally, I added a label at the beginning of the game that clearly indicates the use of the E key for interaction.

Representation of mental health conditions

The survey included a question asking players to rate how well they think the game represented the mental health condition in the specific level. It divided the question into a few different aspects, like environment and interactions. The results of these questions were very positive in general, with the exception of the depression platformer level, and the depression boss fight. The best rating of the representation was for the social anxiety platformer level. The results for the two most contrasting ratings are shown in figure 5.2.



■ **Figure 5.2** Survey results for the representation of mental health conditions.

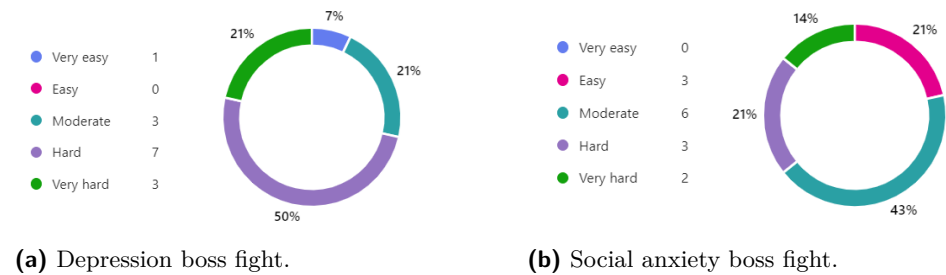
It is understandable that the depression platformer phase received lower ratings, as many mechanics that were planned to represent depression more effectively were not implemented in the prototype. These mechanics would have likely enhanced the level’s ability to convey the intended mental health symbolism.

Difficulty

Another important aspect of the survey was to evaluate the difficulty of the game. The players were asked to rate how difficult each platformer level was, and share how many times they died to the aggressive bosses.

**Boss fight difficulty** The players were asked to rate the difficulty of the depression and social anxiety boss fights. The results can be seen in figure 5.3. The depression boss fight was rated as *Hard* by 50% of the players and *Very*

hard by another 21%. To compare, the social anxiety boss fight was rated as *Hard* by 21% of the players, and *Very hard* by 14%.



■ **Figure 5.3** Survey results for the difficulty of the boss fights.

Based on this information and other questions from the survey, which have shown that only 5 out of 14 players noticed the teleport ability of the depression boss and the high death counts, I decided to make the boss’s movement speed slower. Another difficulty mentioned by the players regarding the depression boss was the key combination mechanic, which also had a bug where the needed key combination would change with each chain that hit the player. This bug was fixed in the final version of the game.

**Platformer level difficulty** When it comes to the platformer levels, the only rating that stood out was the nyctophobia level, which was rated as *Very easy* by 64% of the players, and *Easy* by 21%. Based on this information, I decided to shorten the time the rock platform stays in the air. I did not want to increase the difficulty of this level too much, because some players mentioned that they liked the level’s easy difficulty – it added to the story, showing that even though the surroundings were scary, nothing was actually dangerous.

### Switching perspectives

A key aspect of the game is the switching between the top-down and platformer perspectives. This part of the game was very risky, because mental health conditions can hardly be fixed in a few minutes, and I wanted to make sure that I do not make the switch seem too abrupt. The players were asked to rate how natural the switches seemed. The results were extremely positive in general.

### Level rating

Each of the levels was rated by the players by overall enjoyment. The results were laying between 3.79 and and 4.36. The best-rated levels were the social anxiety platformer, the social anxiety boss fight, and the OCD boss fight, all



rated 4.36. The worst rated levels were the beginning top-down level, the depression platformer, the depression boss fight and the nyctophobia platformer, all rated 3.79.

Favorite levels

The players were asked to share their favorite platformer and boss fight levels respectively. The most favorite platformer level was social anxiety, and the most favorite boss fight was OCD. The results are shown in figure 5.4.

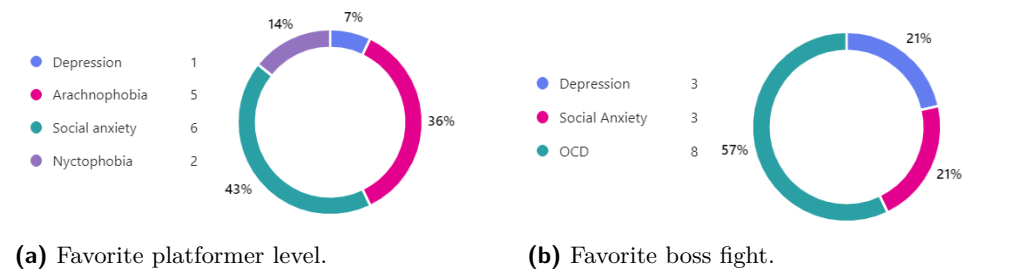


Figure 5.4 Survey results for the favorite levels.

Final ratings

At the end of the survey, the players were asked to rate the game overall. The rated categories were: visuals, music, storytelling, symbolism of the conditions, and overall rating. On average, the visuals were rated 4.21, the music 4.50, the storytelling 4.43, the symbolism of the conditions 4.43, and the overall rating 4.36.

5.3 Conclusion

The testing process was an essential part of the development of the game. It helped me identify and fix many issues, improve the gameplay, and ensure a positive player experience. The feedback from the players was invaluable, and I am grateful for their help in making the game better. It gives me a lot of motivation to continue working on the game, gives me direction and shows me what I should focus on.

# Conclusion

The goal of this thesis was to explore how mental health disorders and phobias can be represented in video games, and using the knowledge to implement a prototype of the game Chrysalis.

For the first part of the research, I explored three mental health disorders: depression, social anxiety and obsessive-compulsive disorder. I focused on the key characteristics of these disorders, how they can affect a person's life and how they can show outwardly. I also briefly explored how some disorders might differ from other conditions to avoid misrepresentation. In the second part of the research, I explored some specific phobias, namely claustrophobia, arachnophobia and nyctophobia. Before researching them specifically, I did research on the general characteristics and symptoms of phobias, because they are very often shared. After that, I focused on the specific phobias and what situations can trigger them. The last part of the research explored treatment methods for these conditions to be able to understand how I could represent recovery from the conditions in games. I focused on cognitive behavioral therapy, exposure therapy and the principles behind them.

In the analysis section, I explored how the conditions can be represented in video games tied to the research. I divided the analysis to two parts: the top-down perspective and the platformer perspective. I explored how each can be used to portray these experiences accordingly. Taking into account the symptoms and characteristics of the conditions I researched, I explored how they can be represented in three aspects: sensory representation, game mechanics and storytelling.

The next step was for me to describe the details of the game Chrysalis in the Game Design Document. I first explained some general information like the goals or target audience. Then I put knowledge from the research and ideas from the analysis together and designed the game based on it. I described the levels, characters, enemies and mechanics that are used in the game. I also explained the art and sound design choices.

In the implementation chapter, I explained the main structures of the game and the most important mechanics. I described which parts form the Game

Design Document were implemented and how.

After the implementation, I described the testing process. I explained how I tested the game, what the testing revealed and how it was used to improve the game. I also included some results from the survey.

The last step was to publish the game on a suitable platform. I chose the site itch.io, which is a popular platform for indie games.

I am satisfied with the results of my work. I was able to create a prototype of a game that represents mental health conditions in a meaningful way, which was the main goal of my bachelor's project. For the future, I would like to continue working on the game, perfecting it and possibly adding more levels and conditions. I structured the story in a way that it can be expanded easily. I would also like to add more mechanics and improve the art and sound design.

..... Appendix A

## Results of the Survey

Responses Overview Active

Responses

14

Average Time

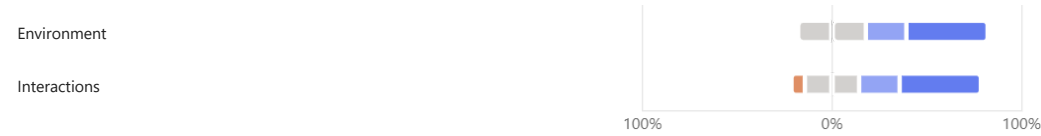
23:06

Duration

2 Days

1. How well was depression represented by...

Not at all   Poorly   Moderately   Well   Very well



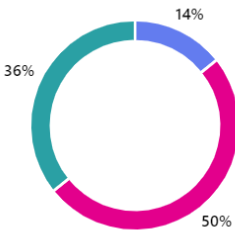
2. Did you realize that you could turn the room's light on?

Yes   7  
No   7



3. Did you struggle to know what to do during the level?

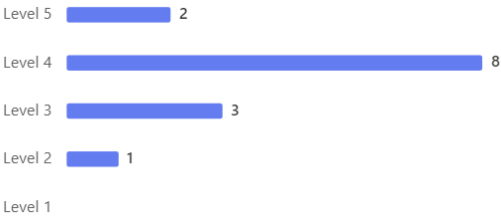
Yes   2  
No   7  
Maybe   5



4. Overall, how would you rate this level?

3.79

Average Rating



5. Is there anything you'd like to add?

9  
Responses

Latest Responses

"First time playing I went first to the wardrobe and it sorta immediately pushed m... "  
"Maybe option if you wanna check the wardrobe, it was the second thing I've don... "  
...

3 respondents (33%) answered level for this question.

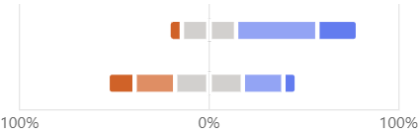


6. How well did the level represent depression?

Not at all Poorly Moderately Well Very well

Environment

Gameplay mechanics



7. What did you find the most difficult? (From most to least)

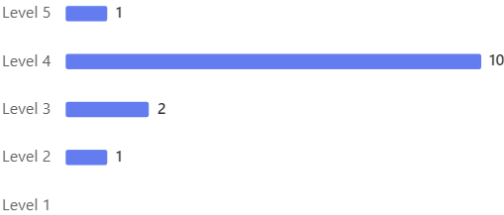
- 1 Jumping on the platforms
- 2 Fighting the skeletons
- 3 Finding the skeletons



8. Overall, how would you rate this level?

3.79

Average Rating



9. Is there anything you'd like to add?

10  
Responses

Latest Responses

"Before discovering that Sprint exists the platforms were really difficult. When figh... "  
"Solid introduction. I am not super sure what this game is meant to represent, but ... "  
...

4 respondents (40%) answered level for this question.

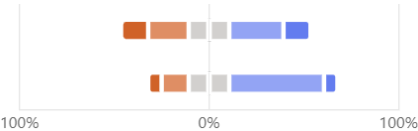


10. How well did the level represent depression?

Not at all Poorly Moderately Well Very well

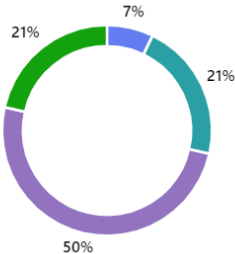
Environment

Gameplay mechanics



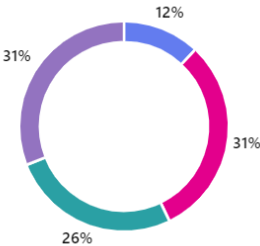
11. How difficult was the boss fight?

Very easy 1  
Easy 0  
Moderate 3  
Hard 7  
Very hard 3

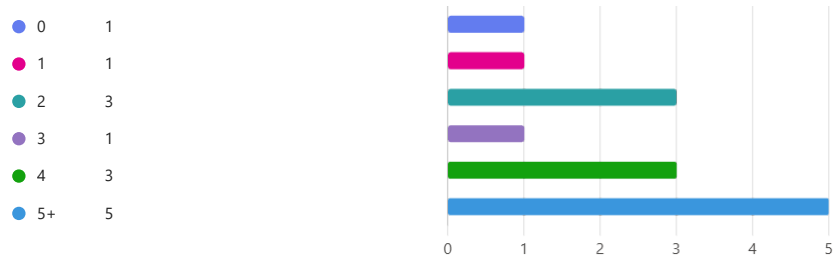


12. What skills did you notice the boss use?

Teleport 5  
Short attack 13  
Summoning skeletons 11  
Chain skill 13



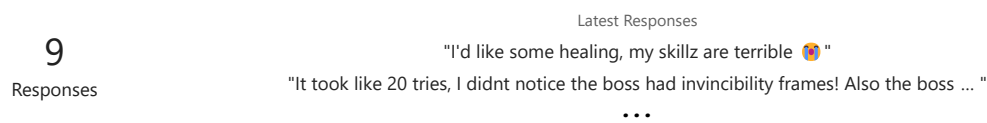
13. How many times did you die?



14. Overall, how would you rate this level?



15. Is there anything you'd like to add?



4 respondents (44%) answered boss for this question.



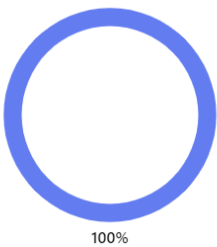
16. How well did the shift in the mood after the depression platformer feel?





17. Did you realize you could tidy things up?

● Yes	14
● No	0

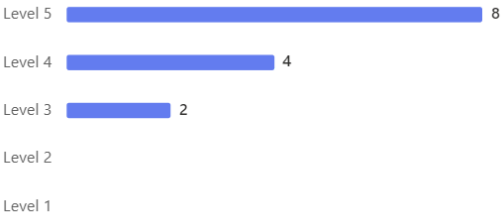
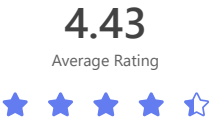


18. Did the tidying feel satisfying?

● Yes	8
● Partly	6
● No	0



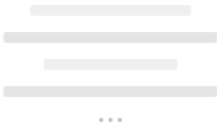
19. Overall, how would you rate the design of this level?



20. Is there anything you'd like to add?

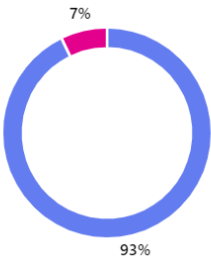
0  
Responses

0 responses submitted



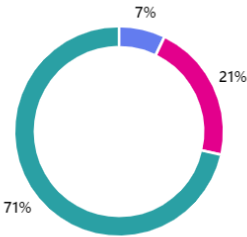
21. Did you realize you could stomp the spiders?

Yes	13
No	1



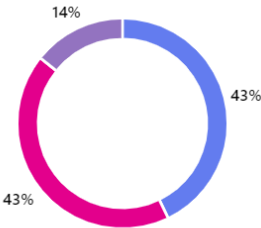
22. Did you realize that killing the spiders would affect something?

Yes	1
Partly	3
No	10

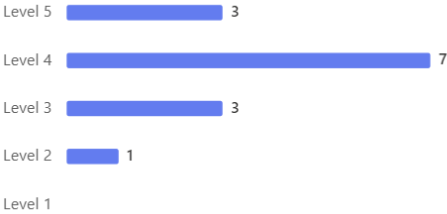
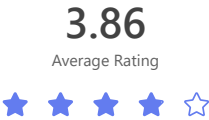


23. Did the poem "Mercy" by Rudy Francisco add meaning or emotional weight to the level?

Very much	6
Slightly	6
Not at all	0
I'm not sure	2



24. Overall, how would you rate this level?



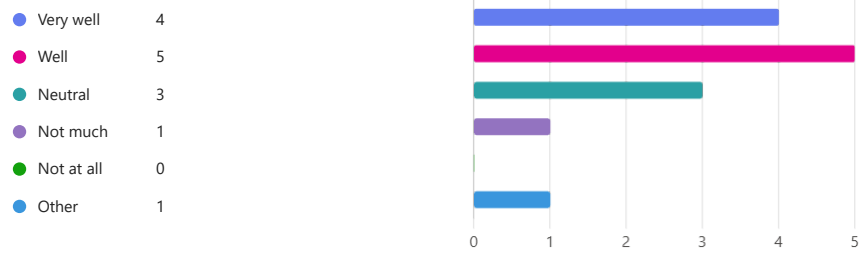
25. Is there anything you'd like to add?



Latest Responses

...

26. How well did the conversation represent social anxiety?



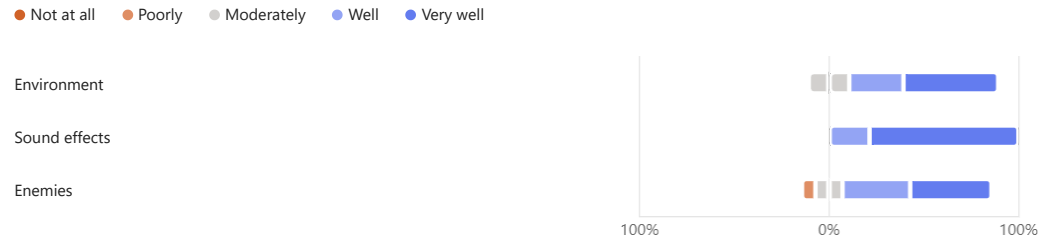
27. Did Patrick's font size make him seem shy, timid or uncomfortable?



28. Is there anything you'd like to add?



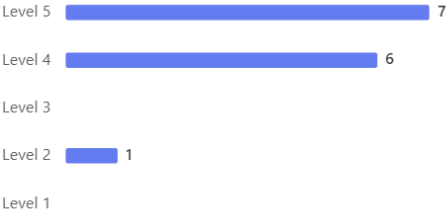
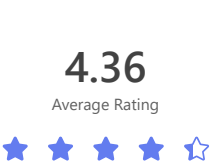
29. How well did this level represent social anxiety?



30. How difficult did you find this level?



31. Overall, how would you rate this level?



32. Is there anything you'd like to add?



Latest Responses

"I really liked the voices"

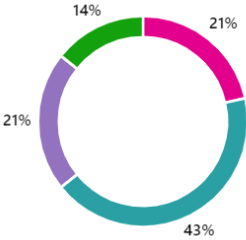
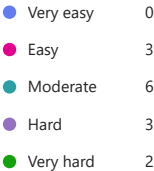
"It did felt like a struggle to finish this one. Probably intended?"

...

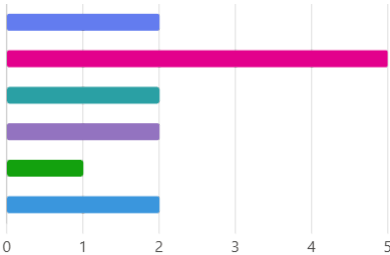
3 respondents (43%) answered hit for this question.



33. How difficult was the boss fight?



34. How many times did you die?



35. How would you rate the ending of the level (the reveal and the conversation with a stranger)?



36. Did the ending have an impact on you?



●

Maybe

50%

36%

14%

37. Overall, how would you rate this level?



38. Is there anything you'd like to add?

5

Responses

Latest Responses

"Really fun boss fight, I particularly liked the dual combo of abilities."

...

2 respondents (40%) answered boss fight for this question.

closely spaced

dual combo

boss fight

environment change

great game

okay game

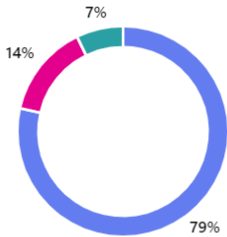
39. Did you notice Patrick's font size change?

Yes	8
No	6



40. Did the switch to the new character (Sarah) feel natural?

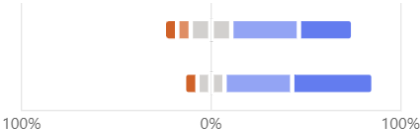
Yes	11
Maybe	2
No	1
Other	0



41. How well did this level represent OCD?

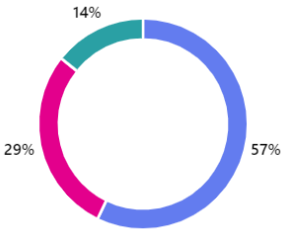
Not at all   Poorly   Moderately   Well   Very well

Environment  
Interactions

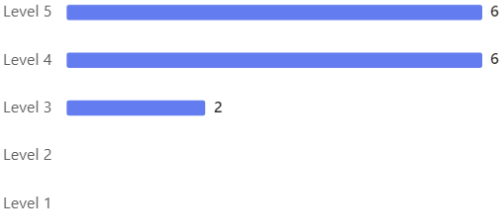


42. Did you notice the hints about her fear of the dark?

Yes	8
No	4
Maybe	2



43. Overall, how would you rate this level?



44. Is there anything you'd like to add?

2  
Responses

Latest Responses  
...

45. How well did this level represent OCD?

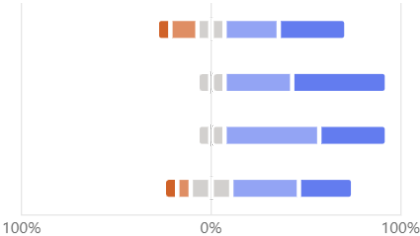
Not at all   Poorly   Moderately   Well   Very well

Environment

Gameplay mechanics

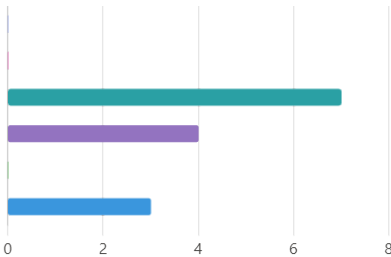
Interactions

Sound Effects/Music



46. How long did it take you to figure out how to beat the boss?

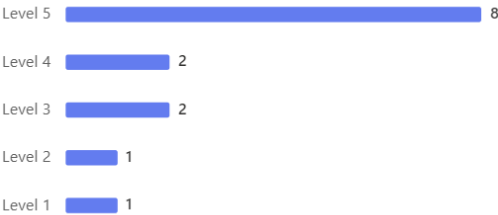
Immediately   0  
A minute   0  
A few minutes   7  
Way too long   4  
I gave up   0  
I found out unintentionally   3



47. How would you rate the win mechanic?

4.07  
Average Rating

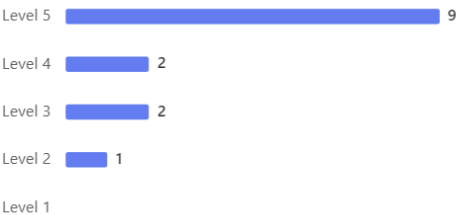
★★★★☆



48. Overall, how would you rate this level?

4.36  
Average Rating

★★★★☆



49. Is there anything you'd like to add?

9  
Responses

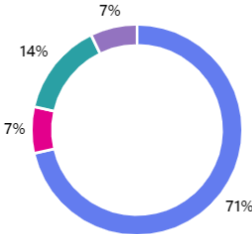
Latest Responses  
"Absolute Cinema"  
"Nejlepsi vec co sem kdy videl, slysel, cetl, hral, a tak. Highlight hry, navysilo presti... "  
...

2 respondents (22%) answered level for this question.



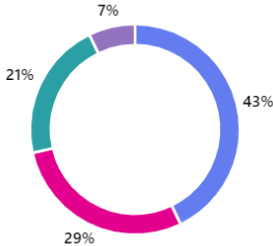
50. Did Sarah's change after the OCD boss fight feel natural?

Yes	10
No	1
Maybe	2
Other	1



51. Was Sarah's fear of the dark introduced clearly and effectively beforehand?

Yes	6
No	4
Maybe	3
Other	1



52. Is there anything you'd like to add?

1  
Responses

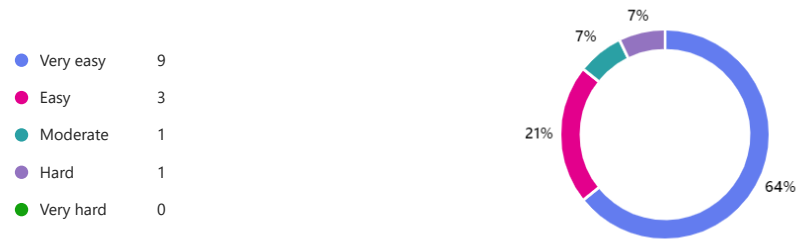
Latest Responses  
...



53. How well did this level represent nyctophobia?



54. How difficult was the level?

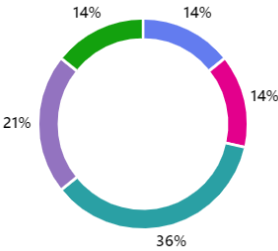


55. Overall, how would you rate this level?

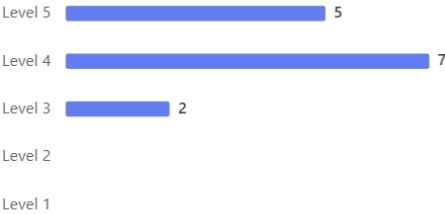


57. Did the final scene make an impact on you?

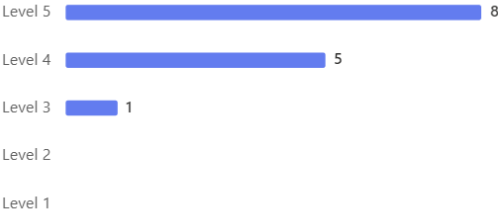
Not at all	2
Slightly	2
Moderately	5
Very	3
Extremely	2



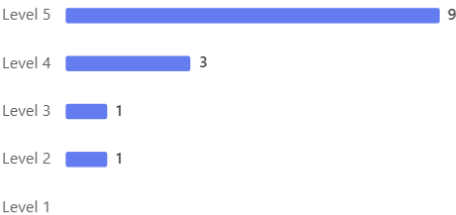
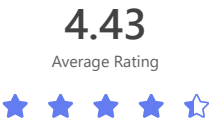
58. How would you rate the visuals?



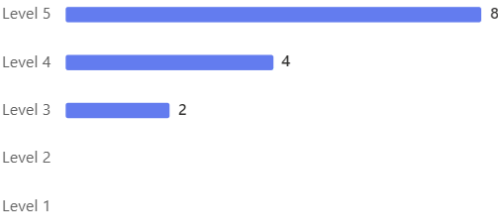
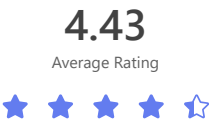
59. How would you rate the music?



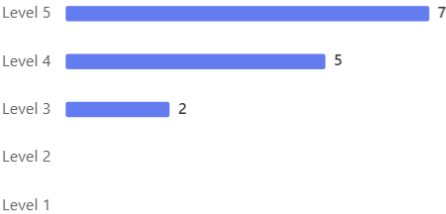
60. How would you rate the storytelling?



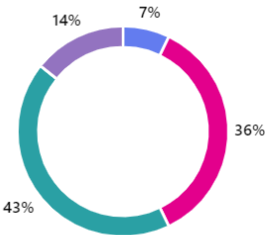
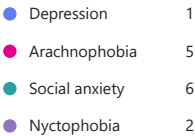
61. How would you rate the symbolism of the mental health conditions in the game?



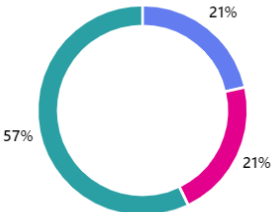
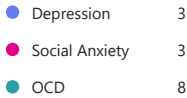
62. How would you rate the game overall?



63. What was your favorite platformer level?



64. What was your favorite bossfight?



65. Is there anything you'd like to add? (Bugs, opinions,...)

11

Responses

Latest Responses

"Just addition to 64. The OCD boss was the funniest and the greatest and the abso..."

"pan bramburek mi zmenil zivot"

"The story felt really rushed to the point it seemed almost as if the game was targ..."

...

5 respondents (45%) answered game for this question.



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## Contents of the attachment

```
/
├── readme.txt ..... a brief description of the media contents
├── data ..... directory containing test results and credits
├── exe ..... directory containing the executable implementation
├── src
│   ├── impl ..... source code of the implementation
│   └── thesis ..... source files of the thesis in  $\text{\LaTeX}$  format
├── text ..... text of the thesis
└── thesis.pdf ..... text of the thesis in PDF format
```