



Uncrypt - GDD



Team Route 35

- Aless (Developer and VFXs)
- Scstefan (Main Artist)
- Bluwolf (Models, Textures and SFXs)
- —



Overview

The game is built around a core concept: understanding how a computer system can be compromised helps players learn the best practices for protecting their data and privacy. By directly experiencing a cyberattack, players gain a practical and dynamic understanding of protection techniques.

Game Genre

The game belongs to the **puzzle/action** genre, with elements of **adventure** and **hacking simulation**. Players take on the role of a computer virus tasked with infiltrating various systems and solving puzzles to complete missions. The gameplay combines **exploration**, **hacking strategies**, and **combat**.

Target Audience

The game is aimed at **casual gamers** and those **interested in cybersecurity**. The target age range is between **15 and 60 years**, with an interest in technology and learning the basics of cybersecurity. The educational approach is engaging but not intrusive, making it suitable for those with no prior experience in the field.

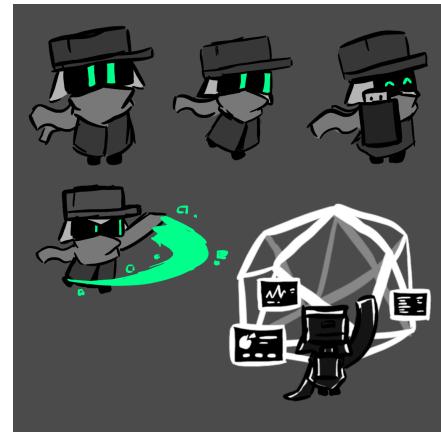
Controls and Hardware Specifications

The game can run on any PC with Windows 10 or Windows 11.

Players can use a mouse and keyboard to play, and a controller is supported for most of the game, except for certain elements (like the terminal), which require a keyboard for typing.

Game Objective

The game provides an educational experience, allowing players to explore the concept of hacking from an unconventional perspective. Understanding how an attack can compromise a system is the first step in learning how to protect oneself. The player must infiltrate various computer systems (Firewall, File System) to retrieve and decrypt important files, navigating through defensive systems and solving puzzles. Each mission presents escalating challenges until the entire campaign is completed.



Key Features and Mechanics

- **Hacking Mechanics:** The player interacts with a simulated terminal to solve puzzles and overcome obstacles, using commands such as *nmap*, *ls*, *cd*.
- **Exploring the Firewall and File System:** Two main environments where the player will face enemies, challenges, and puzzles to progress.
- **Combat Style:** Utilizing slash and dash attacks against thematic enemies, like antivirus programs and defensive software.
- **Computer Helper:** A friendly guide that introduces mechanics and assists the player when in trouble.
- **2.5D Artistic Style with Top-Down Camera:** Providing an immersive yet clear visual experience.
- **Save System and Custom Dialogues:** Ensuring a dynamic and interactive experience.

General Technical Specifications

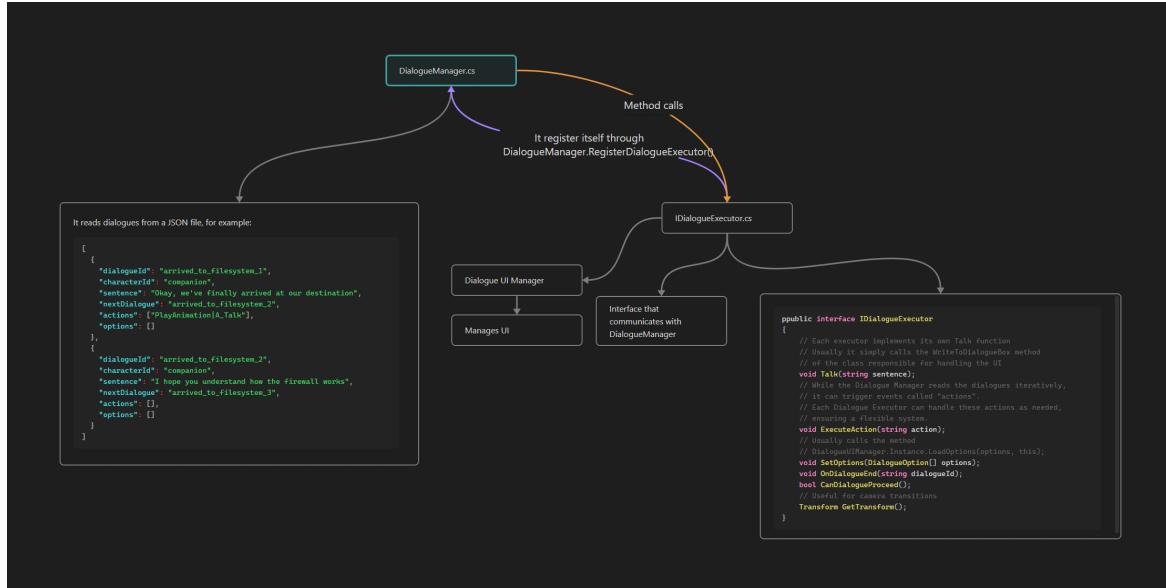
The game is developed using **Unity** and follows the [Unity Style Guide](#) (<https://github.com/justinwasilenko/Unity-Style-Guide>) to ensure well-organized and easily maintainable code. The main technical features include:

- **Behaviour Tree** for enemy AI, allowing for complex and responsive behaviors throughout the game.

```
// Example
BehaviourTree = new BehaviourTreeBuilder("Check Player Status")
    .StartSequence("Check Player Status")
        .If("Can View Player", () => CanViewPlayer)
            .If("Can Attack Player", () => IsNearPlayer)
                .Then(attack)
            .Else(patrolSequence)
        .Else("Idle", () => animator.SetBool(IsPatrolling, false))
    .Build();
```

- **State Machine** for managing the player's move set.
- **Singleton System** for passing references between GameObjects:

- Persistent Singletons `PersistentSingleton<T>` : These are created at the start of the game and persist across scenes.
- Scene-specific Singletons `SceneSingleton<T>` : These are temporary and are destroyed when the scene changes.
- **VFX** to simulate dramatic visual effects such as explosions, fire, and lightning.
- **Cinemachine Cameras** to control camera transitions and create a dynamic, immersive visual experience.
- **Save System** to allow players to pick up where they left off.
- **Dialogue System** to enable complex dialogues with interactive events and reactions.



- Custom **Editor Tools** for placing decorations, organizing enemies, and more.

Additionally, **GitHub** is used for collaboration, **Procreate** for drawing, and **Blender** for 3D modeling.

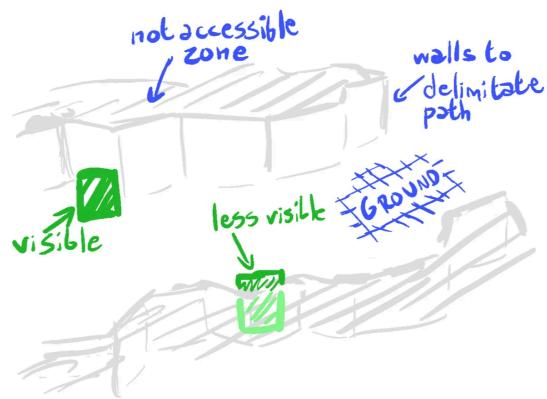
General Visual/Artistic/Graphics Specifications

The game features a 2.5D style, which combines two-dimensional components in a three-dimensional space.

In general, two-dimensional elements are used for characters (player, enemies, and NPCs), while three-dimensional elements are used for interactable objects, decorations, and the environment.

The sprites and animations for the characters are simple and of moderate quality, in order to prioritize game performance and avoid excessive impact on development time.

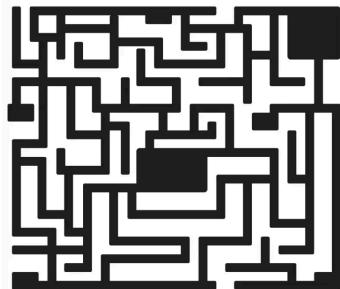
Since the game is top-down with an overhead view, we decided to develop it so that the player always remains at the same height, but only on the horizontal plane. For this reason, we also chose to keep visual elements such as moderately tall walls, to prevent situations where the player might be invisible or difficult to track.



Level design

The main areas of the game, where the player will explore and engage in combat, are designed to provide an open space filled with characters, enemies, and other elements.

To achieve this, the maps have been created to offer large areas for battles, along with multiple, winding paths that form a kind of maze.

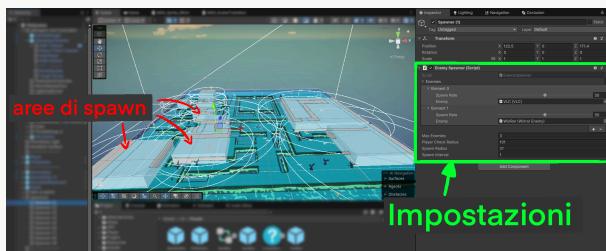


Enemies

In each area, there are general enemies that represent antivirus programs, as well as enemies specific to the theme of the surrounding environment.

These enemies can damage the player by charging at them or shooting projectiles.

Enemies are placed on the map using a generation system based on the player's position. Enemies are instantiated only if the player is within the area between the circle and the square.



Early Enemy Concepts

General Enemy Animations

Although the enemies vary, they all follow a standard animation system. Each enemy can (visually) be in one of the following states:

- Idle (The enemy is stationary and not doing anything)
- Walk (The enemy is walking, either randomly or towards the player)
- Alert (The enemy notices the player's presence and prepares to attack. This animation is designed to give the player a clear indication of when an enemy is about to attack)
- Attack (The enemy performs its attack)

4 states representation:



Idle



Walk



Alert



Attack

Player Animations and Moveset

The player has a fairly basic yet rich "moveset."

Most of the animations change based on the player's direction, specifically:

- Up - Right
- Down - Right
- Up - Left
- Down - Left

Note: For the left directions, it was decided not to create additional sprites, but instead to "mirror" the sprites directed to the right.

The player has animations for the main actions they can perform, including:

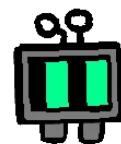
- Idle (when the player is stationary and not doing anything)
- Walk (the player walks)
- Attack (the player performs an attack, using their scarf as a blade)
- Dash (the player performs a quick dash forward to dodge an attack or simply move faster)

Other useful animations include:

- Death (when the player dies)
- Teleport (when the player changes position drastically)

The Assistant

Since the player (who is also a piece of malware) is a silent character, there are no animations for when they interact with NPCs in the surrounding world. However, the assistant serves as a sort of "voice" for the player, providing most of the story and interaction in the game. For this reason, the assistant has various animations for their reactions, characterized by specific facial expressions or movements.



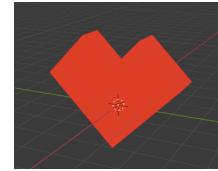
For the assistant, animations are planned for the following:

- Idle/Walk (the assistant does nothing in particular and has no specific expressions)
- Joy (the assistant is happy after a task is successfully completed)
- Sadness (the player is hurt, or the assistant reacts to a sad dialogue)
- Boredom/Annoyance (the assistant is bored or irritated by a circumstance, such as a bad joke in a dialogue)

- Critical (the assistant is agitated due to the player's death or other circumstances)

Healing Methods

To encourage the player to engage in combat, we made it so that defeated enemies have a 30% chance of dropping a healing item.



Notes and Informational Details

During exploration and interaction with the terminal, the player will have access to **informative notes** explaining fundamental cybersecurity concepts, such as how vulnerable ports work, monitoring cyber attacks, and the importance of encryption keys. These notes are designed to educate the player about the real-world concepts behind the game's missions.



UI and Visuals

The UI (User Interface) is designed to provide the player with an enjoyable experience, helping them better understand the world they're exploring and its various components. Below are the main UI elements, their style, and their role.

Health Bar

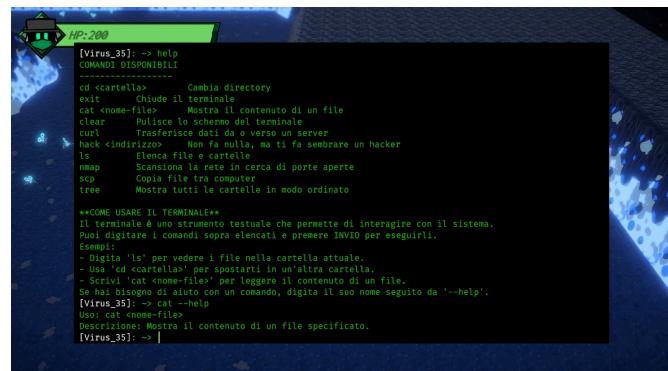
Located in the top-left corner, the health bar indicates the player's HP (Health Points). When the player takes damage, the HP value decreases, and if it reaches 0, the player loses.

Terminal

The terminal is inspired by the Linux command prompt. It has a very simple style to help the player focus on its content.

The commands and content in the terminal adhere closely to the Linux terminal, using similar syntax and commands.

The terminal doesn't only feature basic commands but also more advanced ones for those curious to learn. It's possible to access an explanation of each command using the **help** option.



```
[virus_35]: ~> cd --help
Usa: cd <cartella>
Descrizione: Cambia la directory corrente alla cartella specificata.
[virus_35]: ~> |
```

Note

The notes have an interface similar to the terminal, but they are read-only, with no interactive elements. Notes are one of the main ways for the player to learn new information about the computer world.

Dialogues

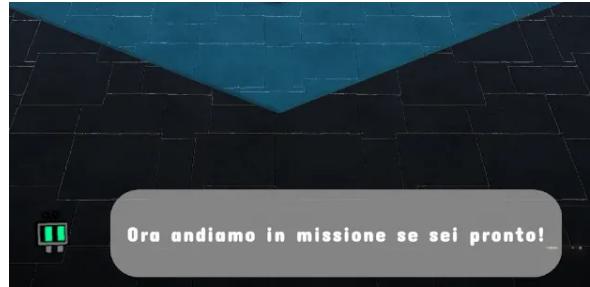
Dialogues are the primary form of interaction between the player and the characters in the surrounding world. They make the game experience more engaging and allow the player to learn new information. The dialogues are designed to highlight the character being interacted with by zooming in on the speaker. Additionally, through the dialogues, the player can make choices, further immersing them in the game. If choices are present, they appear on the right side, while the dialogue itself is shown in a box below.



Quick Dialogues

Quick dialogues are also used by the assistant to explain the terminal's functions since it's not possible to have a regular conversation and interact with the terminal simultaneously.

Quick dialogues are small pieces of information or comments typically provided by the assistant. They are designed to offer brief tips or advice to the player without interrupting their gameplay. As they are considered less important than regular dialogues, they take up much less space on the screen.



Menù di pausa

The pause menu appears when the player decides to take a break by pressing a designated key. The pause menu contains several options and functions, such as:

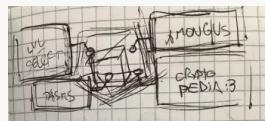
- Adjusting the overall volume
- Adjusting the music volume
- Adjusting the sound effects (SFX) volume
- Closing the pause menu
- Exiting the game



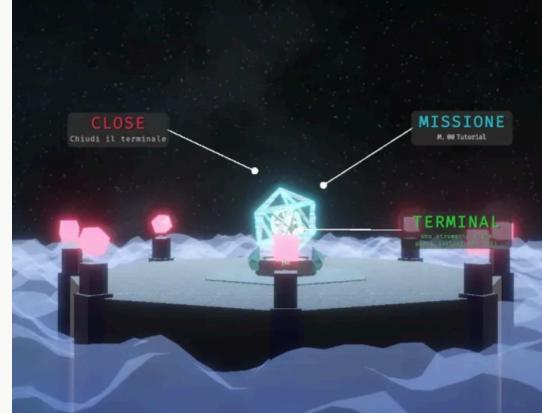
HUB UI

In the HUB, there is an interface that allows the player to perform one of the following actions:

- Start a mission
- Use the terminal
- Exit the game



Initial concepts of the HUB interface



Example of UI presence during gameplay



Area del gioco

The game is primarily characterized by the following areas:

- HUB
- Firewall
- Internet
- File System

Each area has its own specific themes and features, both in terms of gameplay and visuals, which will be analyzed in detail below.

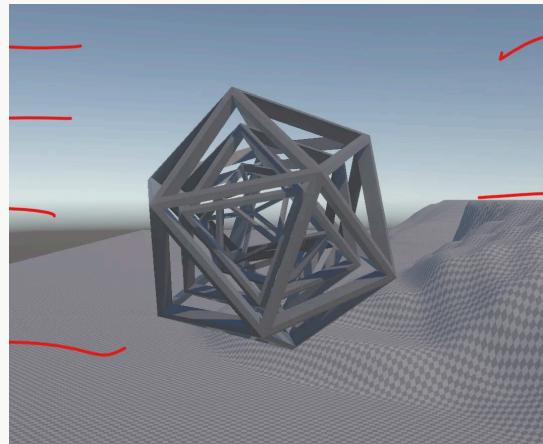
HUB

Concept

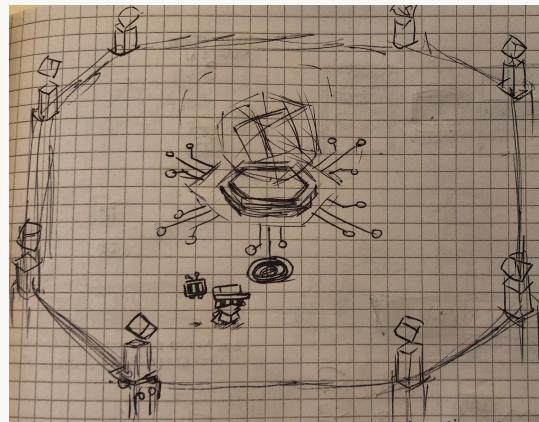
This is the starting area of the game, acting as the "base" or "home." Here, the player is welcomed by the assistant, who introduces them to the initial mechanics and concepts, outlining the player's role and mission. In the HUB, the player can choose to "go on a mission" (begin their adventure in the digital world) or experiment and practice using the terminal (a tool inspired by the classic Windows command prompt).

Appearance

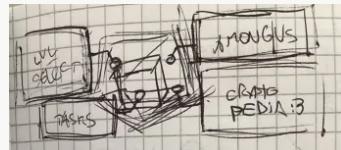
The HUB is a small island floating in the void, characterized by a pedestal around which rotates a hologram of a unique geometric shape, symbolizing the structure and complexity of the digital world. Surrounding the island are smaller pedestals with rotating cubes on top, marking the perimeter of the HUB island.



First model of the HUB's geometric shape



Concept art of the HUB area



Concept art of the HUB interface

Themes

In the HUB, the concept of Malware is introduced, and the player learns how understanding the process of a malware infiltrating a user's computer can be useful for understanding the mechanisms and technologies needed to defend a PC.

Firewall

Concept

This is the first area the player will explore, facing a vast array of enemies, finding and analyzing various notes scattered around, using a terminal, and ultimately locating an exit gate to move on to the "File System." The firewall is considered the first line of defense against malicious entities in a network, and its purpose is to filter data traffic, blocking unwanted entities (like the player).

Appearance

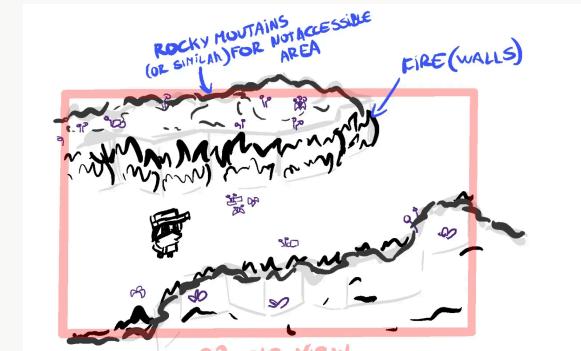
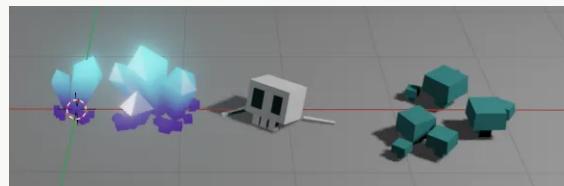
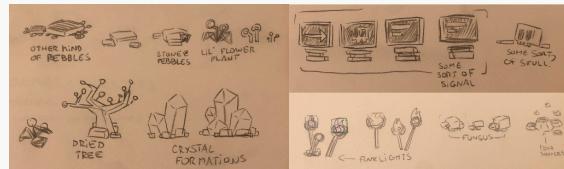
Drawing inspiration from the literal translation of "Firewall" (fire wall), we've decided to depict the firewall as an arid,

volcanic, and inhospitable place, characterized by cold tones like blue and azure. The Firewall is a complex maze of rocky walls surrounded by towering flames. The ground is scattered with fungi, crystals, stones, small volcanoes, disintegrated malware bones, flaming sticks, and cameras representing the constant surveillance of data traffic.



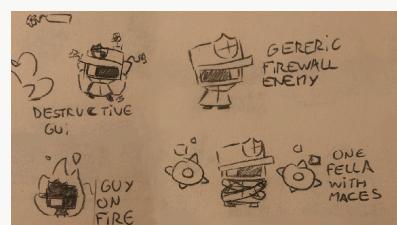
Early concept of the firewall's appearance

Concept of some of the firewall assets and the initial structure



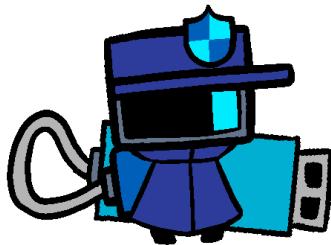
Enemies

The firewall is filled with enemies that will do everything they can to eliminate the unwanted player. All of the enemies in this area generally represent the antivirus and the "filter" of the firewall, depicted as specialized agents wearing blue outfits with a blue-azure shield symbol, representing cybersecurity.



Early concept of the enemies

Below are the details of the enemies and their characteristics:

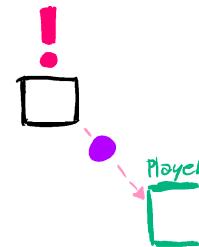


Fire Sniper:

Firewall defense component.

Mechics:

As soon as it spots the player, it locks on and shoots a dangerous energy sphere in their direction.



Il nemico tiene traccia della posizione del player, verso cui lancerà un singolo, ma potente proiettile

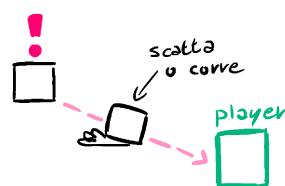


Samurai:

Firewall defense component.

Mechics:

Upon noticing the player, it stops for a moment and then charges toward them at high speed.



Il nemico, una volta notato il player, gli corre addosso velocemente, percorrendo una distanza limitata

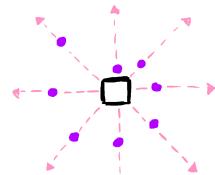


Fire Thrower:

Firewall defense component.

Mechics:

It approaches the player, then pauses for a moment to create a dangerous spiral of projectiles around itself.



Genera in sequenza una serie di proiettili che formano una specie di spirale al cui centro c'è il nemico



Fire Wizard:

Firewall defense component.

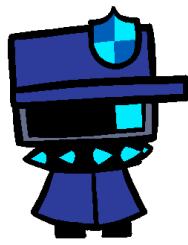
Mechics:

Dangerous projectiles spin around it. Once the player is noticed, it launches some of these projectiles toward them.

The projectiles deplete when launched, but after a while, they regenerate.



Il nemico ha una serie di proiettili che gli volteggiano attorno
Il nemico tira alcuni dei proiettili in direzione del player, lasciandolo con meno proiettili, e quindi più vulnerabile.
I proiettili attorno al nemico riappaiono nel tempo

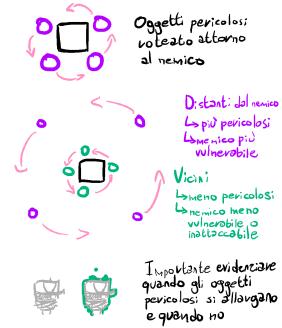


Macer:

Firewall defense component.

Mechanics:

It is protected by spiked spheres that rotate around it. It approaches the player, then pauses for a moment, increasing the rotation radius of the clubs, leaving itself vulnerable for a brief period.

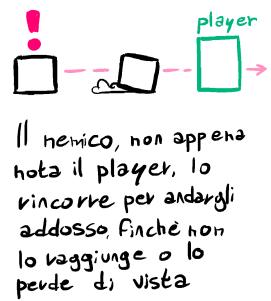


Carbon guy:

Firewall defense component.

Mechanics:

It is particularly fast. Once it notices the player, it chases after them until it leaps onto them.



Themes

In the firewall, the assistant explains the role of a firewall and how it filters traffic. The concept of "ports" is also introduced, which allow files to pass from the network to the file system of a particular PC. Ports are typically closed to unwanted files and are only opened when a specific data transmission is required. A malware (like the player) can exploit an open port to infiltrate a PC unnoticed.

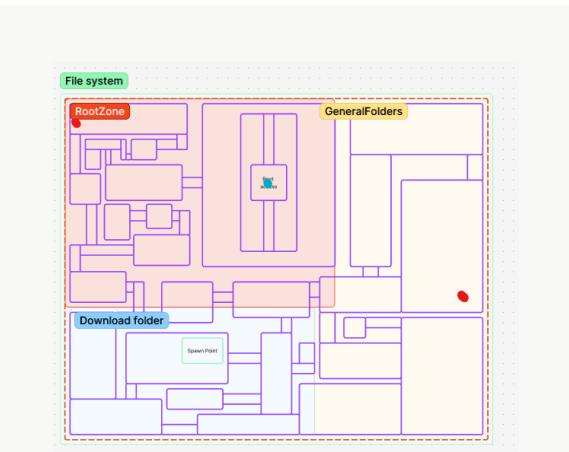
Using the terminal, the player executes commands similar to real-world ones to identify the open port and its location.

File System

Concept

The file system represents the collection of folders and data stored on a computer. In this stage of the game (set within a user's PC), the player must explore a new environment to uncover important and useful information—most notably, two keys needed to decrypt a password. This password will later be required to access a restricted area within the file system and reach the game's final stage.

The level layout is inspired by how folders are typically structured and organized in a real computer's file system.

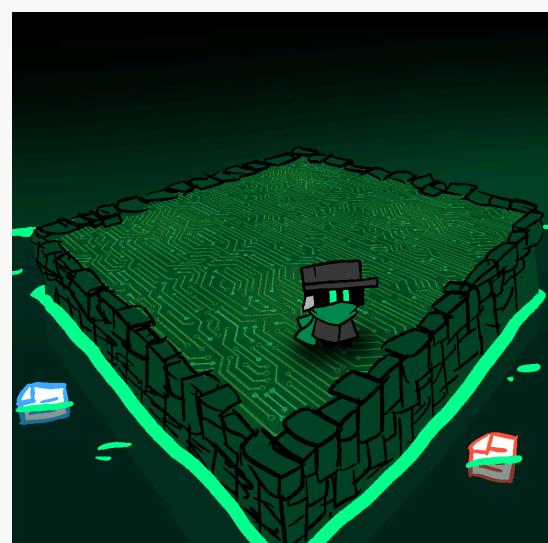


Concept map of the file system

Visual Style

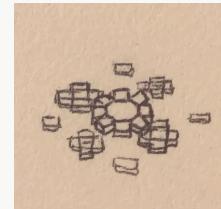
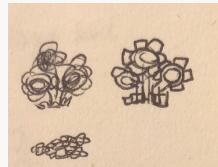
The file system is designed as a peaceful yet intricate maze. The landscape features grass-like green pathways bordered by soft green stones, separating the walkable routes from the surrounding sea. Floating in the water are visual elements representing typical file system components, such as folders, compressed files, and various types of data.

The environment is also rich in stylized vegetation, filled with life. You'll find polygonal trees, mushrooms, and flowers shaped with unique geometric designs, giving the world a vibrant and whimsical feel.



Early concept of the file system's look and feel

Examples of decorative assets found in the file system



Enemies

The File System isn't entirely safe—this area introduces new threats that represent common elements found in real-world file systems. Below is a list of all the enemies in this zone, along with their behaviors:

Winrar:



This little guy is inspired by the well-known software *WinRAR*, typically used to manage compressed folders.



Il Nemico tira un proiettile che vola in direzione del player.
All'impatto con il pavimento, il proiettile crea una esplosione, che reca danni nel raggio circostante

Behavior:

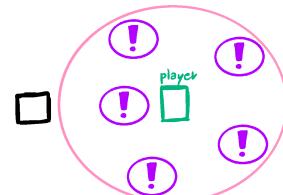
As soon as it spots the player, it hurls a compressed folder their way. On impact, the folder explodes and deals damage.



Installation wizard:



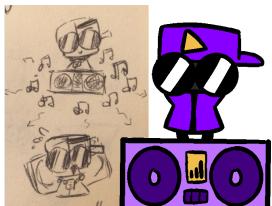
Inspired by classic installation "wizards" that guide users through software setup.



Il Nemico genera, in un'area attorno al player, una serie di indicatori che, dopo un breve tempo, causeranno danno e poi spariranno.

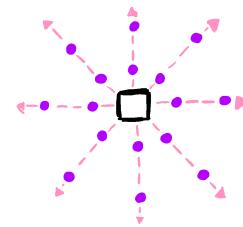
Behavior:

Once it notices the player, it marks several areas on the ground with glowing circles, then calls down powerful lightning strikes on those spots.



MP3:

A stylish and energetic character inspired by audio files commonly used for music and sound.



Behavior:

When it sees the player, it jumps onto its speaker and unleashes waves of musical notes in all directions. Touching these notes causes damage.

Genera in sequenza una serie di proiettili che formano delle specie di anelli al cui centro c'è il nemico



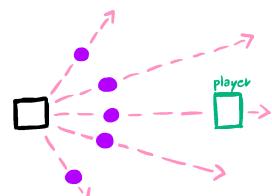
Media Player:

A clumsy but endearing figure inspired by the open-source media player "VLC."



Behavior:

Upon spotting the player, it panics and yells into its megaphone, sending out a wave of projectiles in the player's direction.



Il Nemico tira una serie di proiettili in direzione del player

NPCs

The File System area is populated with numerous NPCs, each representing directories or folders within a real file system.

By interacting with them, the player can learn more about how file systems work and gather clues to locate the two keys needed to decrypt the password.



A few examples of File System NPCs

Themes

In this area, the player learns how file systems are structured by exploring different files and types of data.

It also introduces fundamental cybersecurity concepts like **keys** and **decryption**. Just like in the real world, the password the player must recover is encrypted: unreadable unless the correct keys are used to decode it. Once both keys are found, the player can decrypt the password and reveal its original, usable form.

Internet [Cancelled Area]

Concept

The Internet was planned as an open world for the player to explore while searching for a target PC to infect. Along the way, the player would need to navigate a variety of online threats, such as spam emails, worms, trojans, and other types of malware. On top of that, they'd have to steer clear of classic internet scams.

Visual Style

The Internet would've been represented with a red color palette, depicted as a bustling city built from brick buildings, busy streets, and filled with a diverse cast of characters: some friendly, some shady.

Enemies

The enemies were intended to reflect real online dangers: spam emails, spyware, trojans, IP grabbers, ransomware, and other malicious software.

NPCs

NPCs would have played a key role in educating the player about the threats lurking online. They would've helped in tracking down the target PC, while also fleshing out the Internet world with stories and context.

Themes

This area aimed to teach players about the risks of the internet: highlighting common scams and types of malware used to compromise users. It also would have introduced players to how the internet is structured, showcasing the complexity of modern networks.

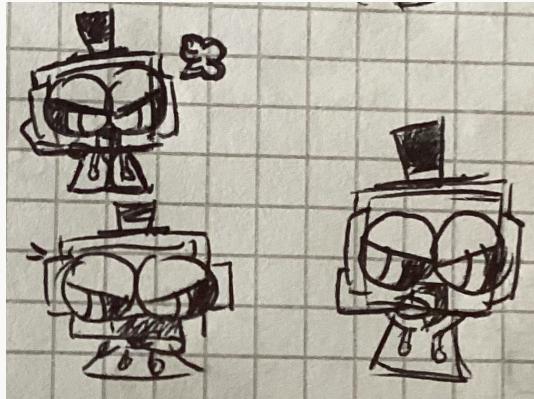
Dark Web [Cancelled – Originally Part of “Internet” Area]

Concept

The Dark Web was designed as a shady, hidden zone—hard to access and full of mystery. Here, the player could trade their own information in exchange for valuable intel to help progress through the game.

Ending

The game is set to wrap up with a light-hearted and humorous finale, bringing the player's journey to a joyful close. Once the player has achieved their main objectives, they'll be teleported to a special room where they'll come face to face with the "owner of the file system."



Early concept of the file system's owner