# Nightmare Canvas

## Overview:

Nightmare Canvas is a VR horror game designed to provide players with an immersive and terrifying experience by incorporating research findings on fear-inducing elements in horror games. Using Unreal Engine 5, the game features highly realistic and detailed environments, enhanced by heart rate monitoring for an additional layer of immersion. Players must navigate through a series of rooms, solving puzzles, and facing monstrous creatures while trying to manage their fear and ultimately defeat the final monster.

## Game Mechanics:

Card Collection: Throughout Nightmare Canvas, players must find and collect paintings hidden in various rooms. These paintings depict monsters that must be burned in a special device located in the central hall. Burning the paintings will weaken the final monster, making it easier for the player to defeat it in the end.

Heart Rate Detection: As an added layer of immersion, players wear a heart rate belt throughout the game. The game's UI displays the player's heart rate, allowing them to track their fear levels in real-time. This information can be used to adjust the game's difficulty and pacing, ensuring that the experience remains terrifying yet enjoyable for the player. The heart rate data collected during gameplay may also contribute to further research on fear-inducing elements in horror games.

Sudoku Puzzle: In the second room, players will encounter a unique Sudoku puzzle that requires them to place golf balls into a basket based on the puzzle's constraints. Successfully solving the puzzle will reward the player with a painting and additional information about the game's mechanics.

Monster Combat: In the third and final room, players must face the weakened monster, utilizing a gun to defeat it. The battle tests the player's ability to manage their fear and maintain focus under pressure. Victory over the monster leads to the game's conclusion and a message thanking the player for their participation in the research study.

## Game Base Rules:

Exploration: Players must navigate through various rooms, discovering hidden objects and solving puzzles to progress through the game. Each room contains different challenges, and the player must pay close attention to their surroundings to find essential items such as keys, paintings, and weapons.

Limited Resources: Players have access to a flashlight with limited battery life, which they can switch on and off with a trigger. They must use the flashlight strategically to conserve battery life while still being able to navigate the dimly lit environment.

Heart Rate Management: Players should monitor their heart rate and adjust their gameplay accordingly. High heart rates may indicate heightened fear levels, which could impact the player's decision-making and reaction times. Players may need to take a moment to calm down and lower their heart rate before facing more challenging situations.

Painting Collection and Destruction: To weaken the final monster, players must collect paintings and burn them in the device located in the central hall. Each painting represents a specific monster, and the more paintings a player burns, the weaker the final monster becomes.

Puzzle Solving: Players must complete various puzzles throughout the game to unlock new areas, find hidden paintings, and gather crucial information. These puzzles require the player to think critically and use their problem-solving skills to progress through the game.

Monster Encounters: Players will face different monsters throughout the game, culminating in a final battle against the weakened monster in the third room. Players must learn to manage their fear and utilize the weapons provided to survive these encounters.

Time Management: Although there is no strict time limit, players should aim to complete the game as efficiently as possible. Spending too much time in a single area or repeatedly failing at a puzzle may increase the player's fear levels, making the game more challenging.

Completion and Feedback: Upon defeating the final monster and completing the game, players are encouraged to provide feedback about their experience. This information can be used to refine the game design and further research on fear-inducing elements in horror games.

## Design of Game Elements:

Environment: The game environments are designed to evoke fear and tension in the player. Each room features dim lighting, eerie soundscapes, and unsettling visual elements, such as bloodstains or broken furniture. The use of Unreal Engine 5 ensures highly detailed and realistic environments for an immersive experience.

Monsters: The design of the monsters is based on research findings about fear-inducing attributes. The game features larger, humanoid-shaped creatures with fear-evoking colors like blue and red. These monsters are placed strategically throughout the game to maximize their impact on the player's fear levels.

Flashlight: The flashlight serves as a crucial tool for navigating the dark rooms and hallways. Its limited battery life adds tension and requires the player to use it strategically. The flashlight's dynamic lighting also enhances the game's atmosphere, casting shadows that can either reveal or conceal lurking dangers.

Puzzles: Puzzles in Nightmare Canvas are designed to challenge the player's problem-solving skills while also providing opportunities for exploration and discovery. Each puzzle is unique and requires a different approach, keeping the player engaged and interested throughout the game.

Paintings: The paintings hidden throughout the game are designed to be both visually striking and narratively significant. They serve as both collectibles and keys to weakening the final monster, adding depth to the game's mechanics and story.

### Design of Interface:

Heads-Up Display (HUD): The HUD is designed to be minimalistic and non-intrusive, displaying only essential information such as the player's current heart rate and the flashlight's battery life. This minimal design ensures that players can focus on the immersive game environment without being distracted by excessive on-screen elements.

Heart Rate Monitoring: The heart rate monitor is seamlessly integrated into the HUD, providing real-time heart rate data for the player. The monitor uses a simple and clear visual representation, such as a numeric value, to effectively convey the player's current heart rate and fear levels.

### Game Outline:

Players wear a heart rate belt throughout the game to monitor their heart rate, adding an extra level of immersion and fear-inducing elements.

The game consists of three rooms:

Starting room: A dimly lit room where the player starts the game. A flashlight on the table can be switched on and off with a trigger. When the player approaches the coffin in the room, a jump scare occurs, and the door of the room is knocked. A key is found in the cabinet, which opens a large and heavy door. A painting is hidden under the table in the room.

Hall: Three walls with doors leading to different rooms. Each wall has a painting of a monster. The last side has no walls and is similar to a balcony where a huge monster's foot can be seen shaking slightly. In the middle of the hall, there is a device to burn paintings.

Third room: Contains a final painting and a gun. After obtaining the last painting, the player can burn it and use the gun to defeat the monster.

The second room contains a Sudoku puzzle where players must put corresponding golf balls into a basket to complete the puzzle. Upon completing the puzzle, the player receives a painting and learns that burning it will shrink the monster on the balcony.

The game ends with the defeat of the monster, and the scene lights up. A brief message thanks the player for their participation and informs them that their reactions helped validate research findings on fear-inducing elements in horror games.

### Game Controls:

Left joystick: controls player movement, including forward, backward, left, and right.

Right joystick: controls the direction in which the player's head is facing, allowing the player to look around the environment.

X key: used to jump in the game.

Y key: opens the in-game menu, allowing the player to access game settings or pause the game.