Unlocking feelings
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Workshop: Game development with Unity

Project Description

"**Unlocking feelings**" is an immersive virtual reality (VR) experience designed to help players explore and interact with emotions in a gamified and engaging way. The game is set in a 3D "escape room" where each section represents a different emotion - joy, anger, fear, and sadness. The player navigates through the different rooms, solving challenges and overcoming obstacles that reflect the characteristics of each emotion.

The project combines innovative gameplay mechanics with educational and therapeutic value, making it a unique and meaningful gaming experience.

The Problem and Added Value

Modern games often focus on entertainment but lack elements that encourage emotional growth or awareness. The different rooms addresses this gap by providing a platform where players can:

1. Learn to recognize and manage emotions.

2. Experience a unique and personalized gaming journey that evolves based on their actions and decisions.

3. Enjoy a fun and visually engaging VR environment.

This project is unique because it combines VR with emotional intelligence, offering both entertainment and self-discovery. The gameplay mechanics are designed to reflect real-life emotional challenges, making it engage, relatable, and thought-provoking.

Existing Approaches

While there are VR escape room games available, most of them focus primarily on puzzles and problem-solving with little to no emphasis on emotional engagement. "Unlocking feelings" stands out by integrating a unique emotional dimension into its core gameplay, where players navigate through rooms representing different feelings. This approach combines the thrill of an escape room with a deep exploration of emotions, creating a one-of-a-kind experience that is both captivating and meaningful.

Main Features of the Project:

1. **Physical Object Integration by sensors:**
   The game leverages physical objects that players interact with in the real world, integrated with sensors to detect and translate their actions into the virtual environment. These seemingly ordinary objects in the real world transform into meaningful tools or elements within the virtual world, creating a unique and immersive connection between reality and VR. This interplay enhances the player's sense of presence and engagement, as everyday items are reimagined with purpose and significance in the game.

2. **Emotion-Themed Rooms:**
   Each room in the game is designed to represent a specific emotion (e.g., joy, anger, sadness, fear). These rooms combine immersive visuals, sounds, and interactive challenges that evoke and explore the characteristics of each emotion.

3. **Innovative Use of VR Technology:**
   The game incorporates cutting-edge VR mechanics, including physical book interactions, haptic feedback, and real-time environmental changes based on player actions.

4. **Audio-Visual Design:**
   Each room is meticulously crafted with high-quality visuals and soundscapes that match the mood of the emotions, providing a deeply engaging experience.

5. **Reflection and Feedback:**
   At the end of the game, players receive a personalized summary of their performance. This feedback highlights their strengths, areas for growth, and insights into their emotional awareness.

What makes the game stand out is its seamless integration of real-world physical objects into the virtual environment through advanced sensors, transforming ordinary items into meaningful tools within the game. This innovative approach bridges the gap between reality and VR, offering players a unique, immersive experience. By combining emotional exploration with engaging challenges and leveraging cutting-edge technology, the game provides both entertainment and personal growth, making it a valuable and memorable experience.

Architecture

System Components

- Unity: Game engine for VR environment development.

- Sensors: For detecting and translating physical object interactions.

- C#: For scripting the game logic.

- Shader Graph (Unity): For dynamic visuals and effects.
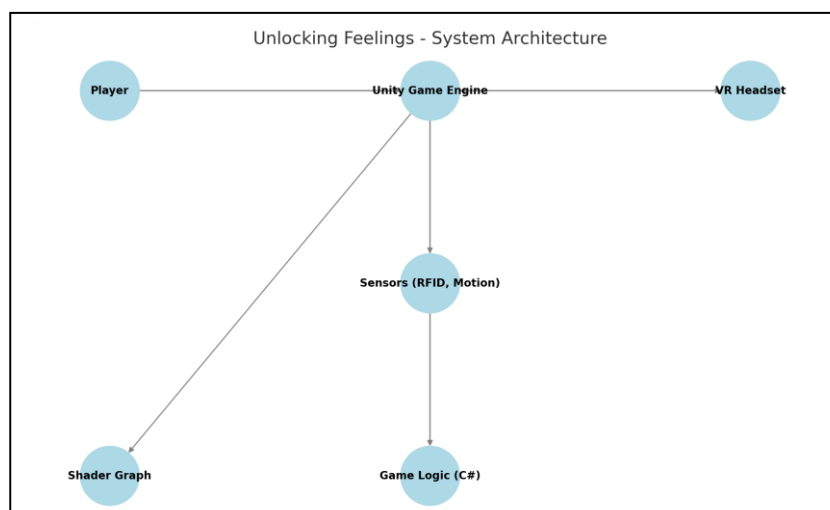
<u>User Flow</u>

1. **Main Menu:**
   The player selects a new game or resumes a saved session.

2. **Introduction:**
   Players are introduced to the concept of the game: they will enter rooms representing different emotions, with the goal of identifying and managing the emotion in each room to progress.

3. **Entering a Room:**
   The player enters a room designed to evoke a specific emotion (e.g., joy, sadness, fear) through immersive visuals, sounds, and interactive elements.

4. **Emotion Discovery:**

   o The player must analyze their surroundings, interact with objects, and observe subtle cues to deduce which emotion the room represents.

   o The game may offer clues or feedback if the player struggles to identify the emotion.

5. **Emotion Challenge:**
   After identifying the emotion, the player faces a unique challenge or puzzle related to managing or engaging with that emotion.

6. **Transition to the Next Room:**
   Once the challenge is completed, the player unlocks the door to the next room.

7. **Progression Through Rooms:**
   The player continues through the sequence of rooms, each representing a different emotion, gradually building emotional awareness and problem-solving skills.

8. **Victory/Losing:**

   o Upon completion, they "win" by mastering the emotional journey and gaining insights into their ability to navigate feelings.

   o If the timer runs out before the player identifies the emotion or completes the task, they lose the room.
   the player returns to main menu.

9. **Reflection and Feedback:**
   At the end of the game, players receive a summary of their journey, highlighting their strengths, areas for improvement, and tips for applying emotional awareness in real life.

Screens Sketches

main menu:
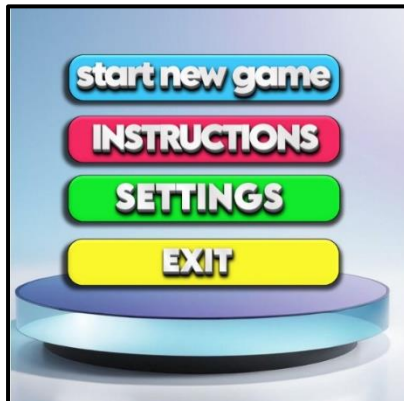
Elements in the Main Menu:

1. Game Title:

- o A large, visually striking display of the game's title, "Unlocking feelings".

- o Animated effects (e.g., pulsating text, shifting colors) to evoke curiosity.

2. Options:

- o Start New Game: Begin a new journey through the emotional rooms.

- o Settings.

- o Instructions/How to Play: A quick overview of the game's rules and controls

- o Exit Game: Quit the game or return to the VR menu.

3. Music:
A calming, ambient soundtrack that transitions between different emotional tones.

Introduction:

Overview of the Game:
A short, interactive video or text-based animation introducing the player to the concept.

4 rooms:
Joy room:

The player enters a radiant meadow filled with colorful, glowing flowers. Soft, cheerful music plays in the background, and the atmosphere is warm and inviting.
At the entrance, there is a jar of butterflies, each glowing in different vibrant colors, and a stand for a **physical book**.
The player must match each butterfly to the flower that corresponds to its color, using the physical book as a guide.
Once all butterflies are correctly matched to their flowers, the meadow transforms:
A golden light bathes the room. A hidden door covered by vines gently appears, and a shelf near to it. The player needs to put the book in the right spot on the shelf to open the door.

Anger room:

The player enters a room with a massive wall blocking their path. The player needs to realize in which **physical object (hammer/stick)** he needs to use to smash the virtual wall.
When the wall finally collapses, it reveals a hidden room beyond.
Inside the hidden room, several punching bags hang from the ceiling. Some glow red while others glow blue.
Players must hit only the red punching bags. Each successful hit on a red bag makes the exit door open slightly wider. However, hitting a blue bag causes the timer to decrease, adding urgency to the challenge.

Fear room:

Face and overcome fears to progress.
The room is dimly lit with scary sounds and unsettling visuals.
Player will need to walk across a virtual narrow bridge while maintaining balance.
At the end of the bridge he will find a door and will enter a dark room, there, he will need to understand the use of a **physical flashlight** to find puzzle pieces. After solving the puzzle, the lights will turn on and the door will open to the next room.

Sadness room:
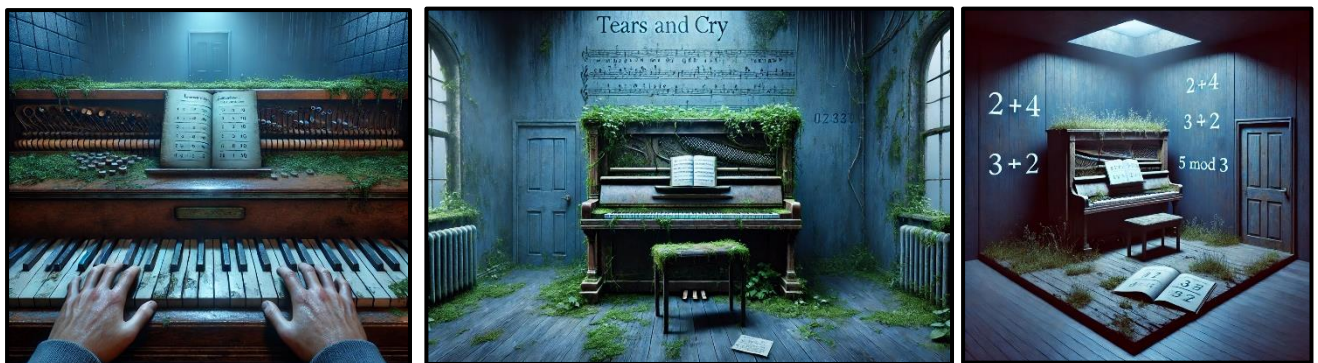
The player enters a dimly lit, melancholic room dominated by a vintage grand piano. The atmosphere feels heavy, with soft, sorrowful music faintly playing in the background.
At the center of the room, the piano sits locked. The player must realize that their **physical book** holds the key to unlocking the piano.
Once the player places the physical book on the piano stand, the piano opens. The player then needs to open the physical book and solve the simple mathematical problems revealed inside. Each solution corresponds to a number engraved on the piano keys, linking the problem to a specific musical note.
The player must play the corresponding notes on the piano. When a correct note is played, the piano emits a warm sound, and the room begins to brighten subtly. Incorrect notes produce discordant tones and reduce the remaining solving time.
Once all the mathematical problems are solved and the notes are played correctly, the room becomes fully illuminated with cheerful light. A hidden door then slowly swings open, inviting the player to continue their journey.

Reflection and Feedback:
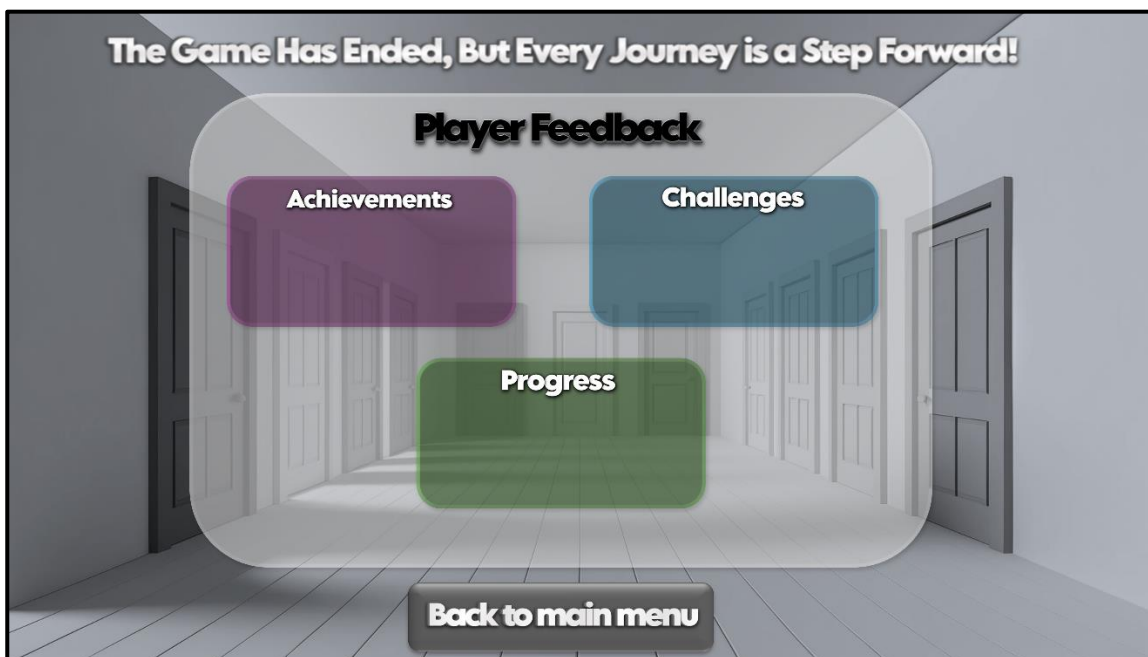
This screen appears after the player completes the game. It provides a personalized summary of their emotional journey, highlighting their achievements, challenges, and progress. The design is clean, immersive, and visually tied to the themes of the game.

To evaluate the feasibility of our concept so far, we developed proof-of-concept (POC) rooms with scripts. We created a room with a main menu, another room featuring different challenges, and explored Unity to familiarize ourselves with its capabilities. Through this process, we confirmed that we could achieve the desired visual aesthetics using sprites. Additionally, we tested the theory of which sensors should be used to achieve the desired results and learned how to effectively utilize them.

Issues and Future Work

The problems we have faced so far:

- Integration of Sensors: One of the main challenges was integrating physical sensors (e.g., RFID, motion sensors) into the Unity environment. This required significant research and experimentation to ensure smooth interaction between real-world objects and the VR system.

- Learning Curve with Unity: For many team members, Unity was a new platform, so there was an initial learning curve to understand its features and how to use it effectively for VR development.

- Performance Optimization: Ensuring smooth performance in the VR environment was challenging, especially when rendering complex visual effects and animations in real-time.

Where can the project be extended to?

- Additional Emotion Rooms: Expand the game to include a wider variety of emotions, such as surprise or disgust, with their own unique challenges and visuals.

- Multiplayer Mode: Introduce a collaborative mode where multiple players can explore and solve emotional challenges together, fostering teamwork and shared learning.

- AI-Driven Personalization: Implement AI to analyze player behavior and personalize the challenges and feedback based on their emotional responses.

- Educational Modules: Develop additional modes tailored for educators and therapists, focusing on emotional intelligence training for specific groups, such as children or professionals.