



Prepared by TCU CS Development Team

CognitV Therapy

A VR Exposure Therapy Experience

2 May, 2024



Team Members



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Agenda

- Background & Client Info
- Development Plan
- Project Details
- Demo
- Tech Stack
- Problems & Challenges
- Lessons Learned
- Acknowledgements
- Questions



Background



Dr. Niki Fowler
Founder & CEO



Ramona Lacy Fowler
Founder & Executive Advisor



Motivation:

- 19.1% of US adults suffered from anxiety disorder this past year
 - 31.1% of US adults over their lifetime
- Traditional treatment can be inaccessible, time consuming, expensive, and intimidating.

Solution: VR Treatment

- Allows exposure to uncomfortable social situations from a safe and controlled environment.
- No clinician is needed, leading to easier and faster access
- Fills the treatment avoidance gap
- Preferred by younger patients
- Effective method according to National Library of Medicine

Development Plan

Iteration 1 (Oct - Nov):

- Building the foundation of the game
 - Main Menu
 - Main Level

Iteration 2 (Dec - Jan):

- Updating Documentation
- Bug Fixing

Iteration 3 (Jan - Feb):

- NPC (Non-player Character) Implementation
 - Text-To-Speech
 - Animating begins

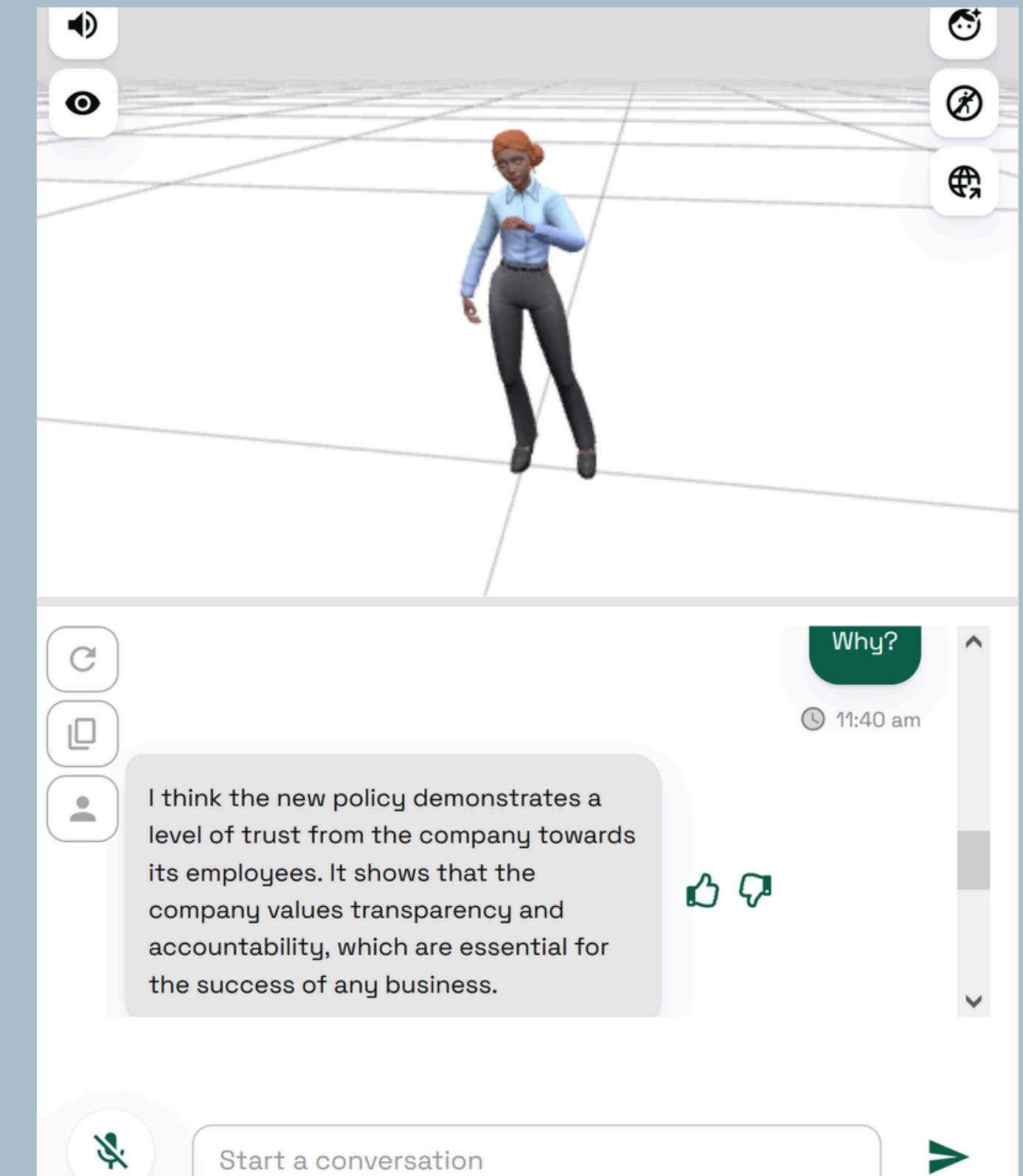
Iteration 4 (Feb - April):

- Implementing the AI
- Continuing NPC Implementation

Project Details

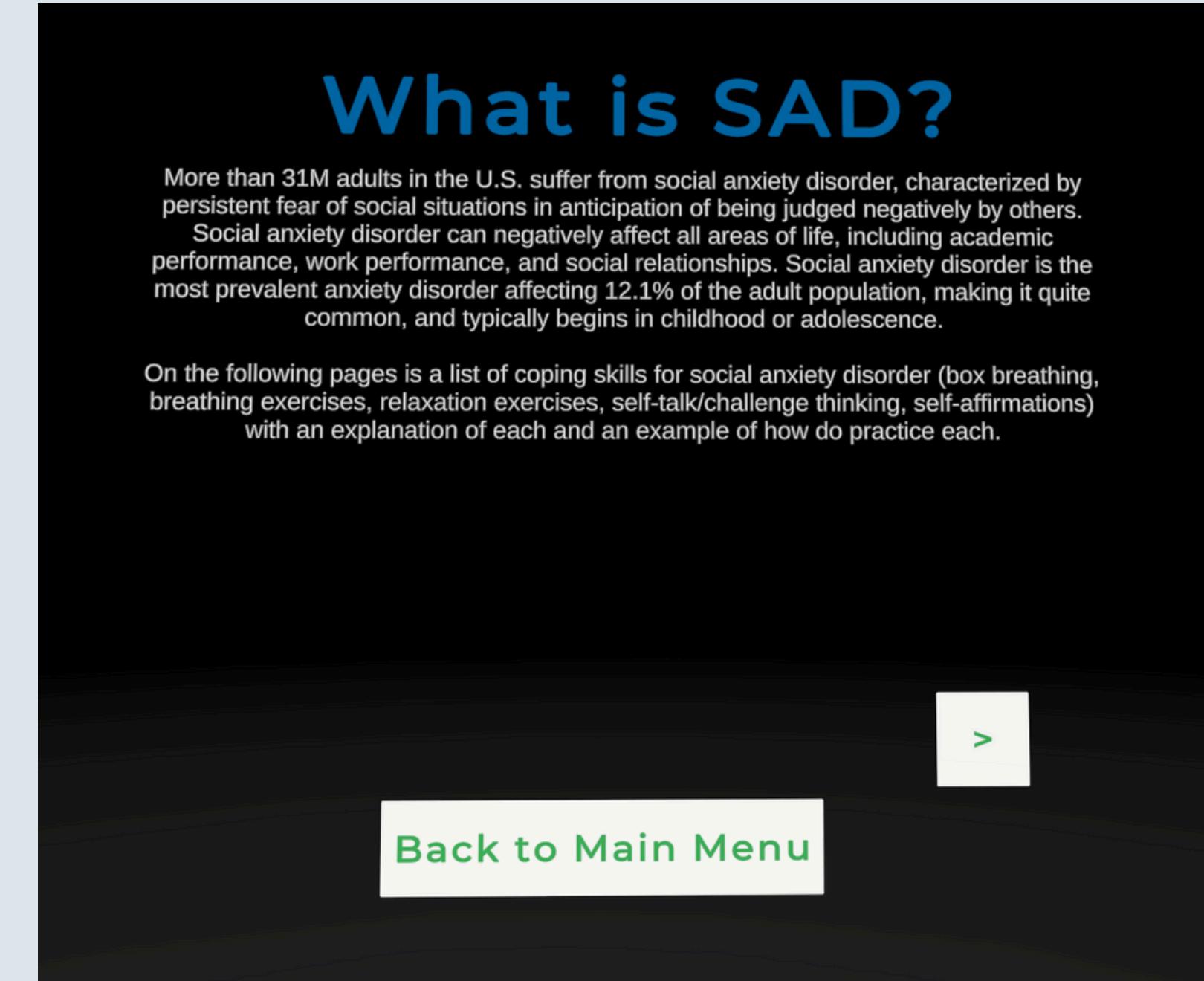
In our game, we have implemented:

- Exposure to introducing oneself, public speaking, and disagreement
- Anxiety management guides during key moments
- Artificial Intelligence integrated to produce dynamic responses



Convai, used to create the AI character

Demo: Menus



Demo: Menus

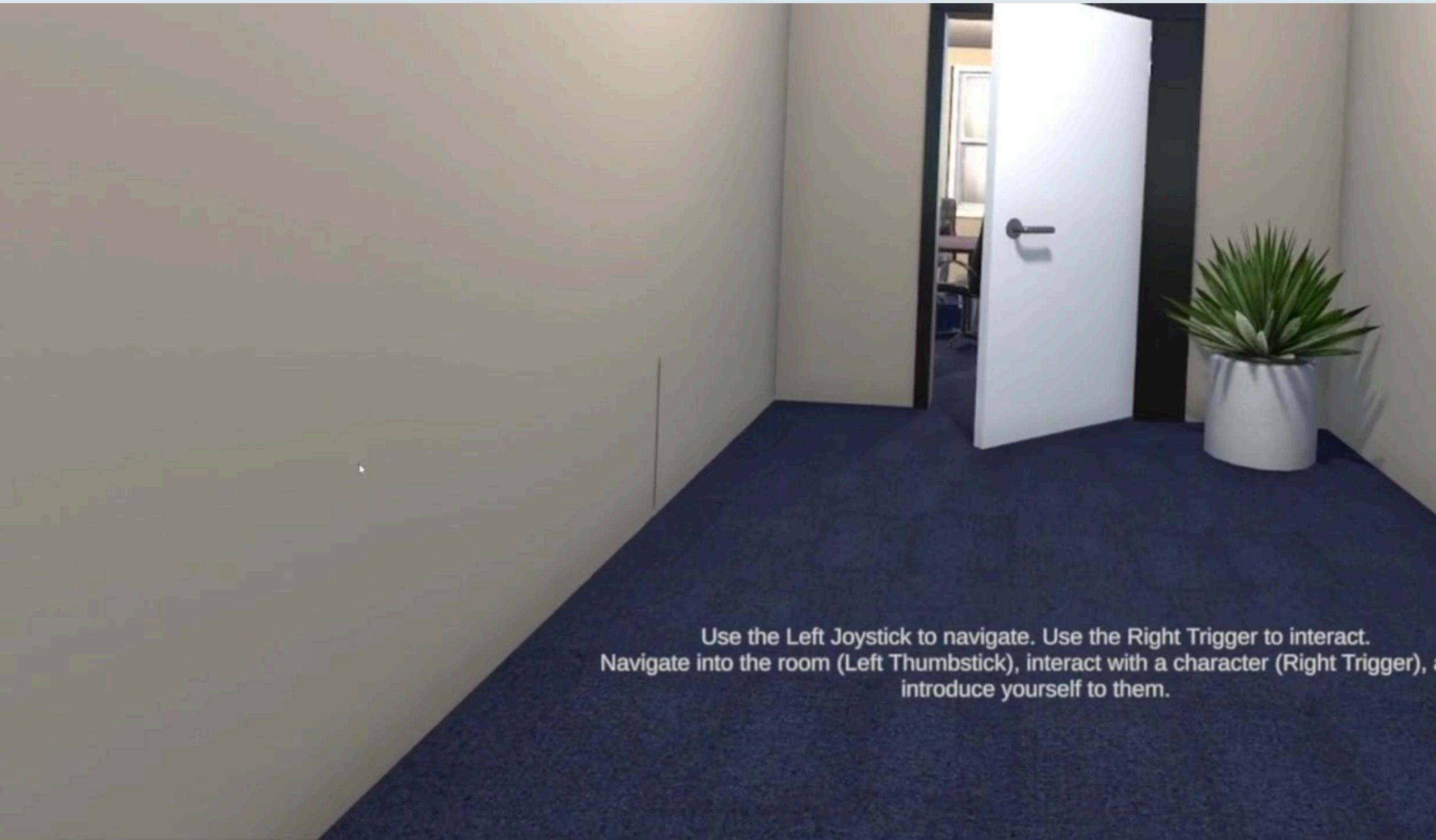


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Demo: NPC Interaction

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Use the Left Joystick to navigate. Use the Right Trigger to interact.
Navigate into the room (Left Thumbstick), interact with a character (Right Trigger), and introduce yourself to them.

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Demo: HR Policy Speech

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Listen to the speech delivered by the presenter. Pay attention to the key points.

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Demo: Player Speech

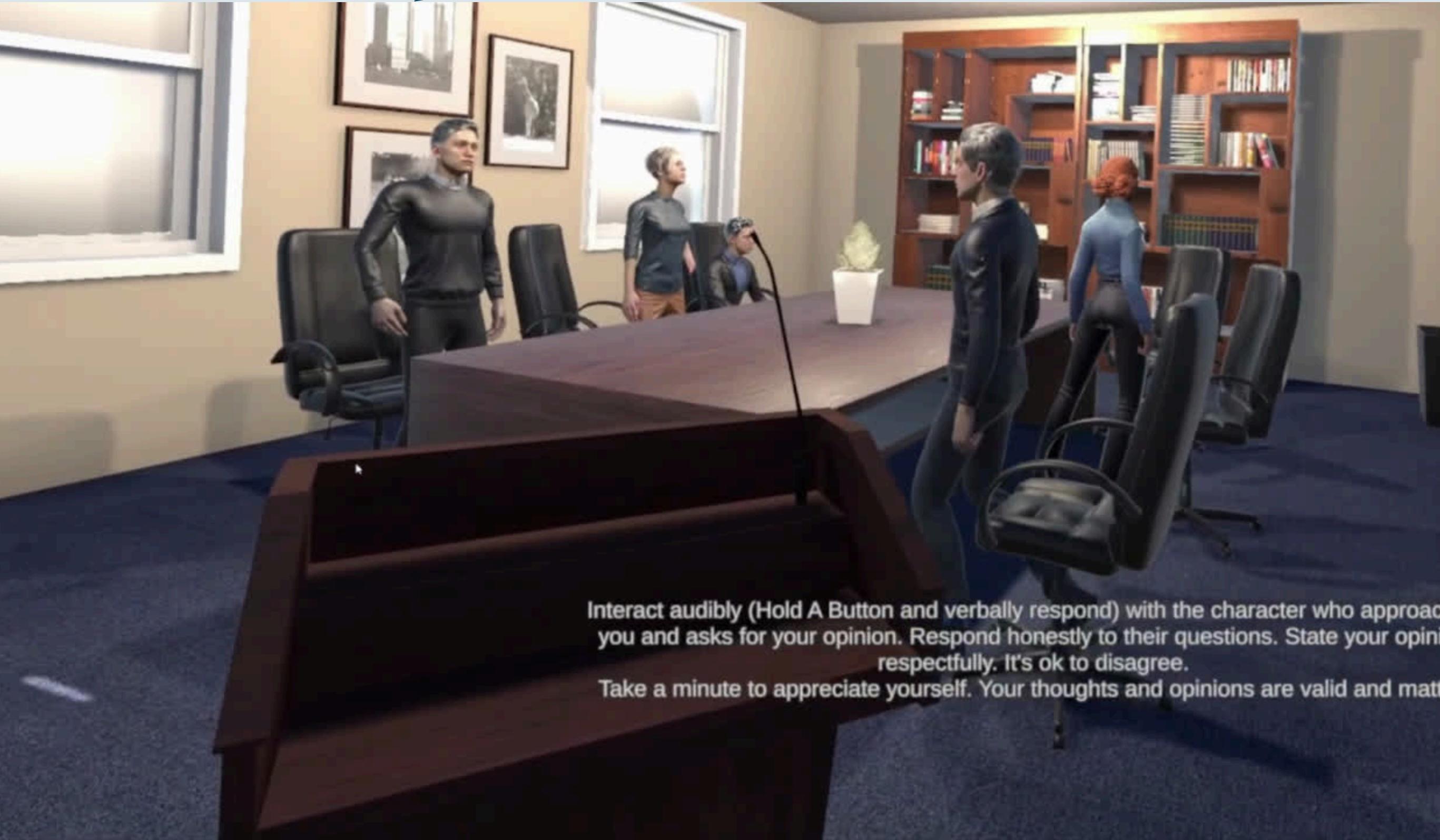
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Demo: Convai Response

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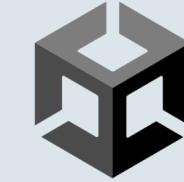


Interact audibly (Hold A Button and verbally respond) with the character who approaches you and asks for your opinion. Respond honestly to their questions. State your opinion respectfully. It's ok to disagree.

Take a minute to appreciate yourself. Your thoughts and opinions are valid and matter.

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Tech Stack



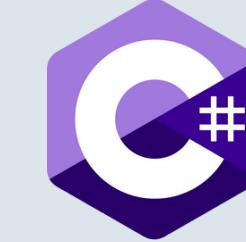
Unity

- The development environment for the project.



ConvAI

- Created artificial intelligence non-player characters to allow for a real-time, dynamic conversation
- Adjusted personality and backstory



C#

- Used to create scripts that interact with the environment that was built in unity



Amazon Poly

- Used to generate speech for NPCs that don't have AI integration from ConvAI



GitHub

- Version control
- Code review

Problems & Challenges

No Formal Game Dev Education

- Having to learn a new tech stack within a year
- Hard to maintain best coding practices

Testing VR Game Without Proper Technology

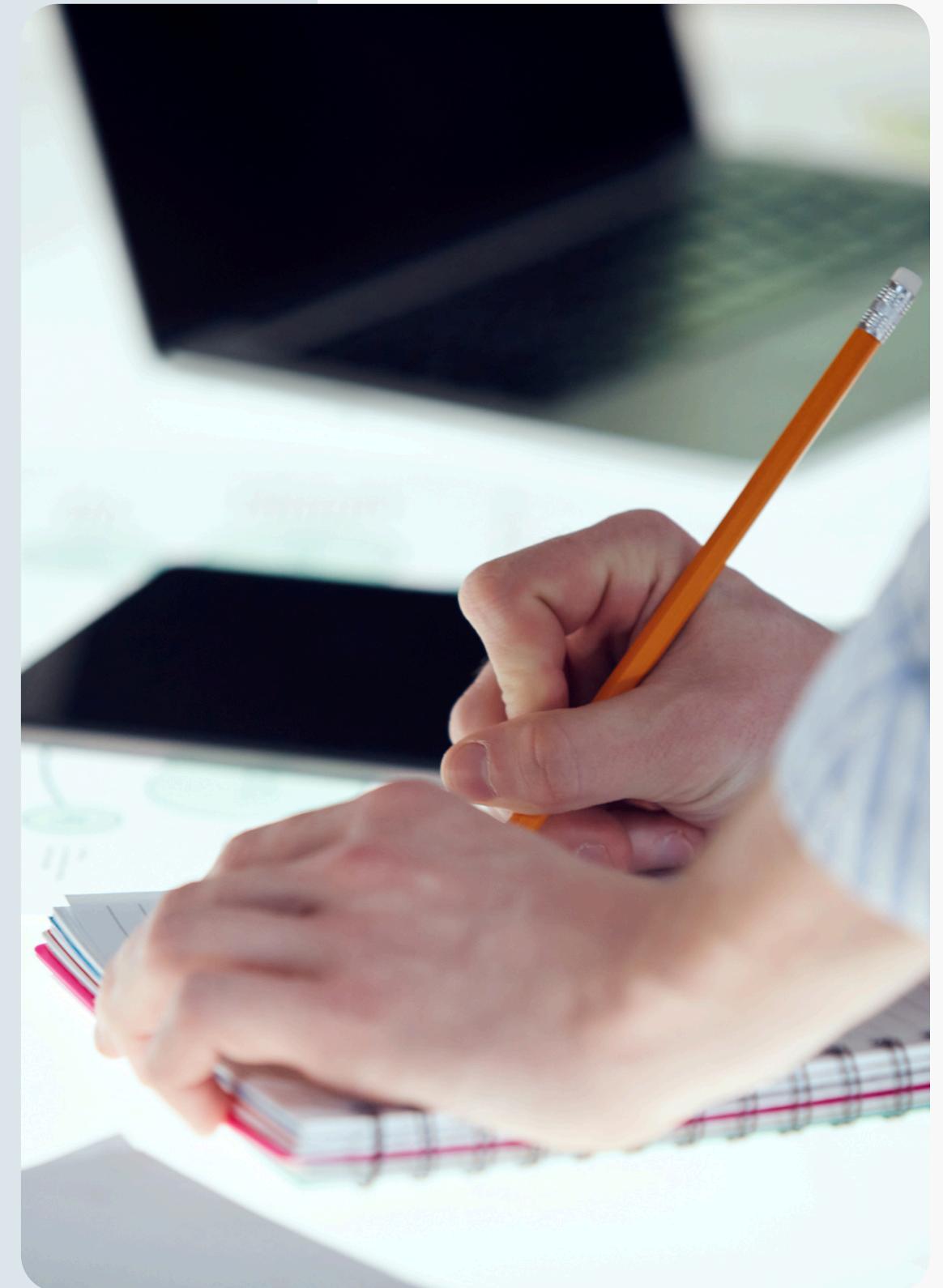
- Had to use alternative methods of testing such as a VR simulator plugin due to not having a working VR headset
- Made it difficult to know if the project worked properly as a VR game

Integrating AI

- Redirection from wrapper repos to Convai
- Independent Convai controllers = independent development

Animation

- Difficult and confusing implementation of animations and transitions such as walking, sitting, and lip syncing



Lessons Learned



Development is Iterative

Implementing AI proved to be a challenging task that came with a lot of redirects.

Task Delegation

We improved task delegation by recognizing redundancies, like assigning separate team members for similar tasks.



Communication

Meeting in person as opposed to Zoom increased the team's efficiency





*Thank you to CognitV
Solutions, Dr. Wei, and
Dr. Fowler!*





Questions?

