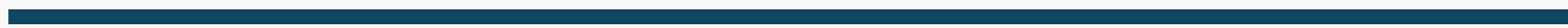Prepared by TCU CS Development Team

CognitV Therapy

A VR Exposure Therapy Experience

2 May, 2024

Team Members

Eric Guyette
Team Leader

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Lead Developer

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Developer

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Developer

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Developer

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:

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

Iteration 2 (Winter Break):

- Updating Documentation
- Bug Fixing

Iteration 3:

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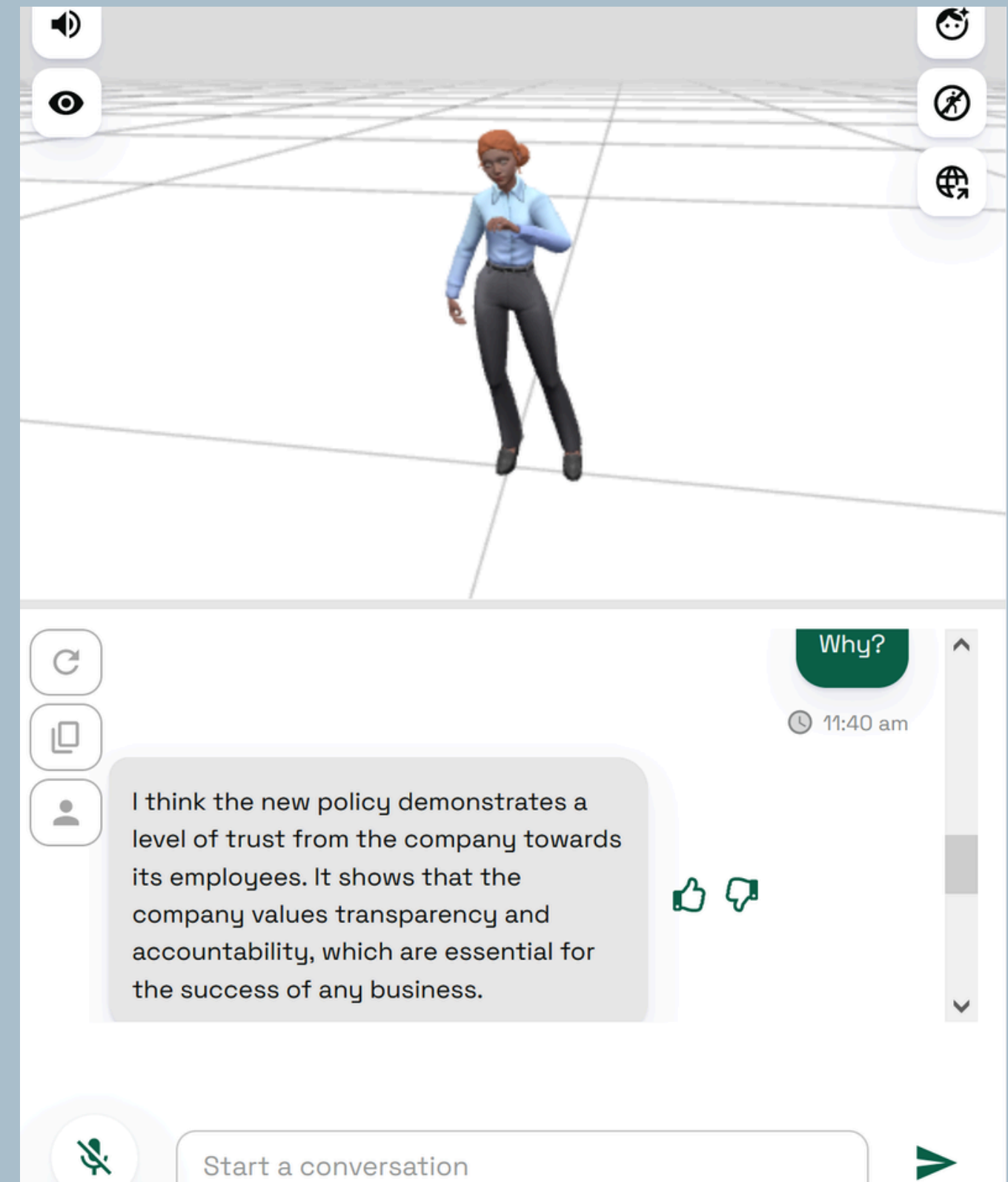 - Text-To-Speech
  - Animation begins

Iteration 4:

- Implementing the AI
- Continuing NPC Implementation

Project Details

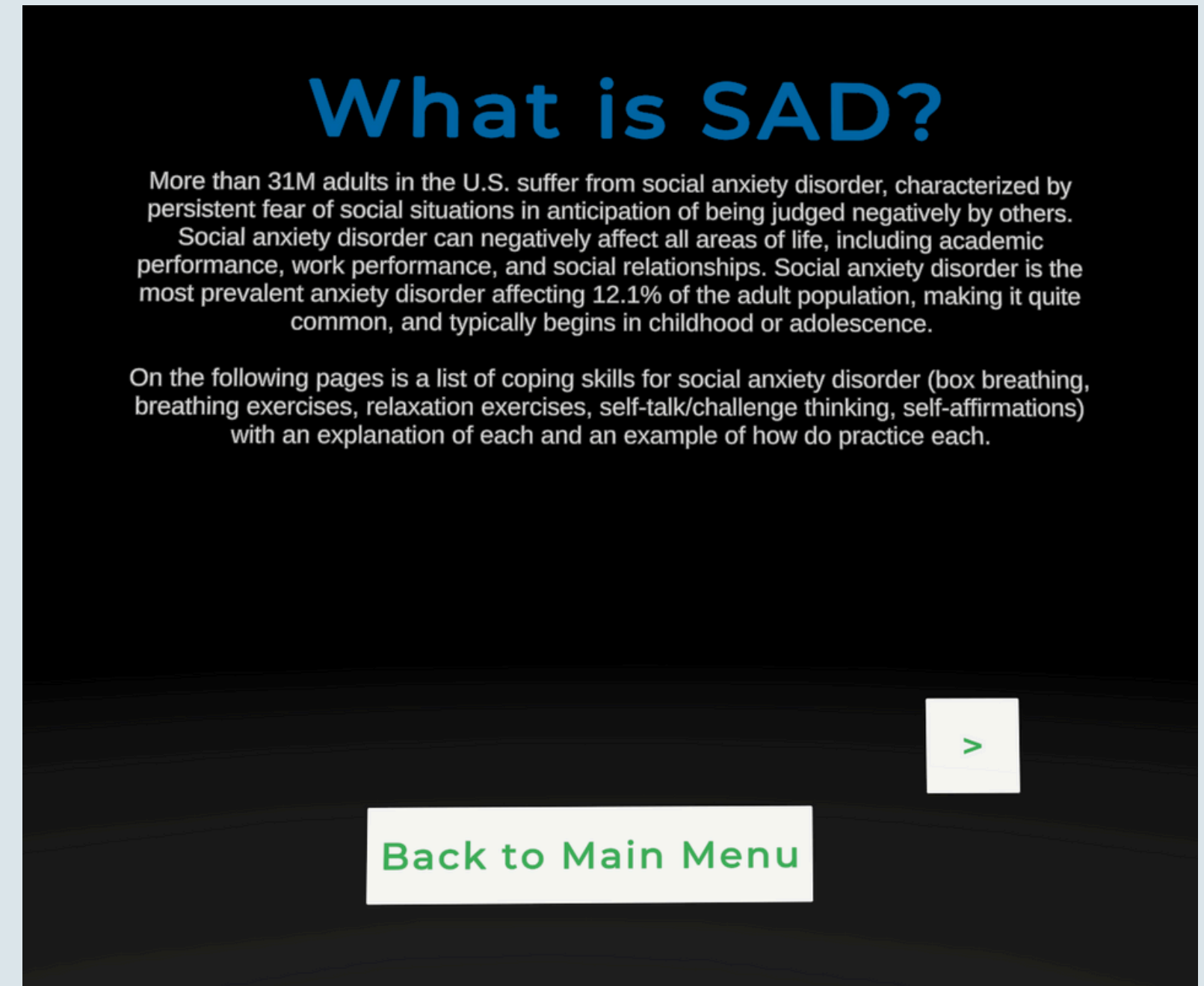## In our game, we have implemented:

- In-game prompts to guide the user on how to progress
- Anxiety management guides during key moments
- Public Speech Exposure
- Artificial Intelligence integrated to produce dynamic responses

Convai, used to create the AI character

Demo: Menus

Resume

Exit

Thank You!

Main Menu

Quit

Demo: NPC Interaction

Demo: HR Policy Speech

Listen to the speech delivered by the presenter. Pay attention to the key points.
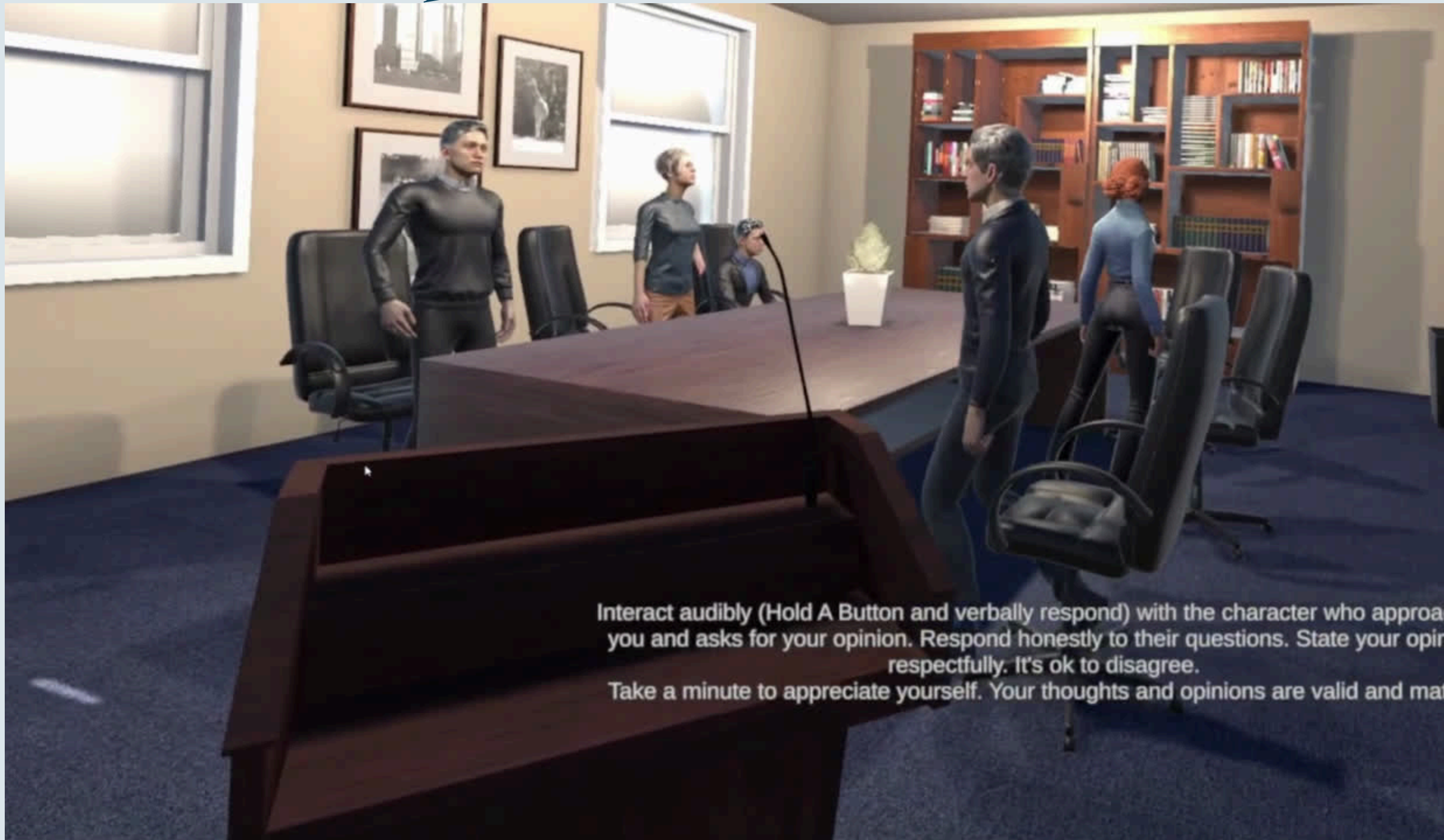
Demo: Player Speech

Approach the podium to introduce yourself. Interact with the podium (Right Trigger) start and stop your speech timer.

Demo: Convai Response

Interact audibly (Hold A Button and verbally respond) with the character who approac
you and asks for your opinion. Respond honestly to their questions. State your opini
respectfully. It's ok to disagree.
Take a minute to appreciate yourself. Your thoughts and opinions are valid and matt

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 practicies

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
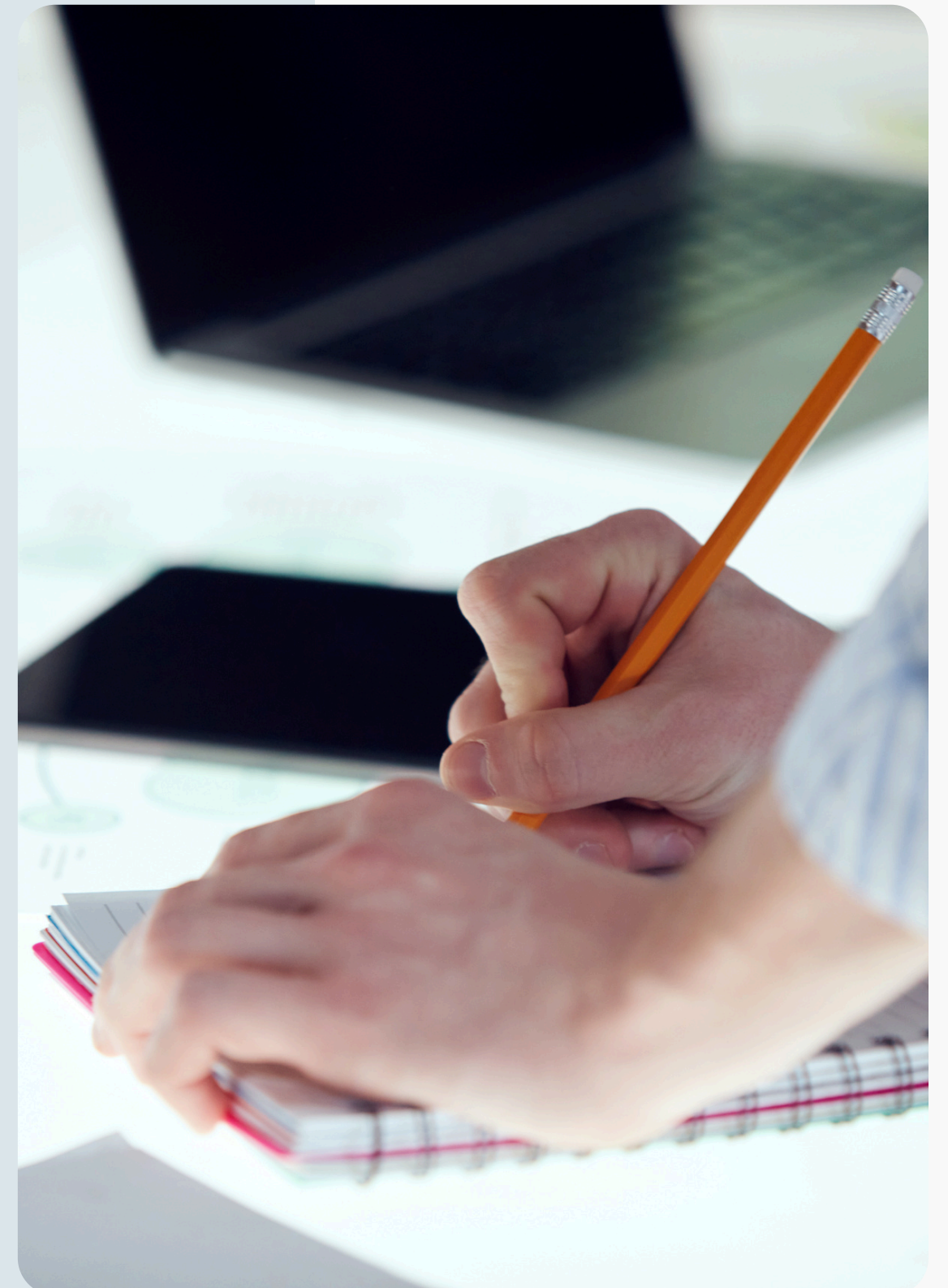
Lessons Learned

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

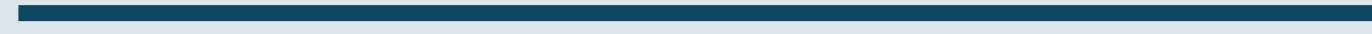Meeting in person as opposed to Zoom increased the team's efficiency

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

Questions?