



# Talk: Project Design

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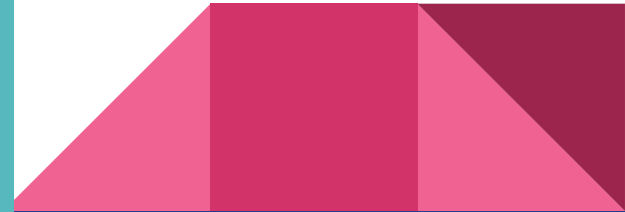
# Project Overview

- Gamified Security Awareness for Developers Training Platform
- Client: AllState Insurance Group | Advisor: Dr. Thomas Daniels

**Brief Description:** There are many ways to learn about cybersecurity and secure coding practices. Our client is aware of these various ways to learn but find them **non-retentive**. If only there was a fun video game which could make this learning process more manageable 🎮🧩🎮

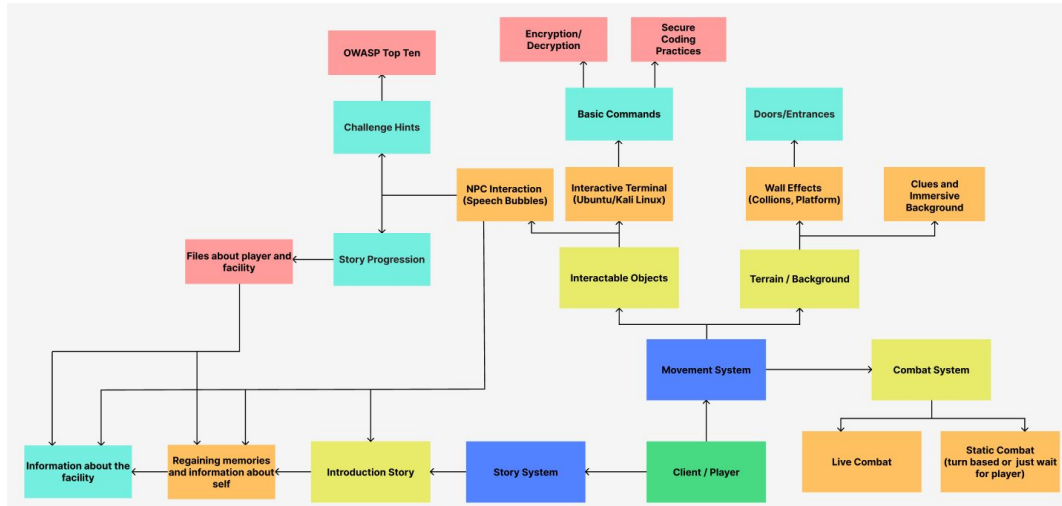
# Problem Statement

- Critical gap in accessible, engaging cybersecurity education
- Traditional methods often fail to engage or educate on cybersecurity effectively
- Our game "CyEscape" uses narrative gameplay to make security concepts engaging
- Aims to boost cybersecurity literacy and promote a secure digital landscape



# Detailed Design & Visuals

## Systems and Subsystems of CyEscape



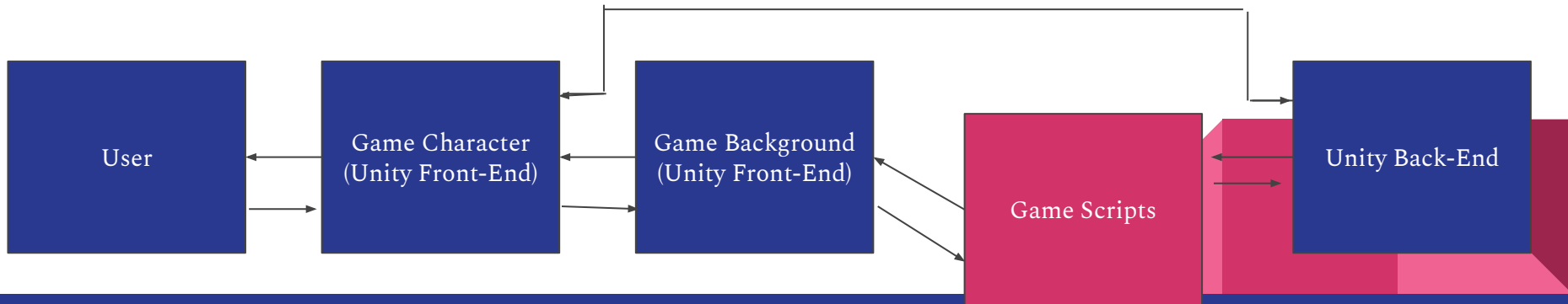
- Two Main Systems
- Movement System
  - Interactable Objects
  - Terrain/Background
  - Combat System
- Story System



- Unity is our Game engine of choice
- Has great integrated tools for game design
- Has a lot of free assets for use

# Functionality

- Users progress through levels with escalating challenges, starting with basic terminal commands and advancing to complex security tasks.
- Leveraging Unity for both front-end experiences and back-end processing, the game integrates actions such as terminal commands and simulated cybersecurity attacks seamlessly into the gameplay.



# Technology Considerations: Game Engines

Options	Pros	Cons	Rating (X/10)
<b>Unity Game Engine</b>	<ul style="list-style-type: none"><li>-Many publicly available assets</li><li>-Top-of-the-line game physics</li><li>-Supports 2D development</li><li>-User-friendly with tutorials</li></ul>	<ul style="list-style-type: none"><li>-Does not support more than one person working on the same project</li></ul>	<b>8</b>
<b>UnReal Game Engine</b>	<ul style="list-style-type: none"><li>-Many top-hit games have been made on Unreal Game Engine</li><li>- Very little limitations on game assets</li></ul>	<ul style="list-style-type: none"><li>-Heavily favors 3D design</li><li>-Steep learning curve</li></ul>	<b>6.5</b>
<b>Gamemaker Studio</b>	<ul style="list-style-type: none"><li>-Simple to pick-up</li><li>-Drag and drop functionality</li><li>-Great for 2D games</li></ul>	<ul style="list-style-type: none"><li>-Ease of use limits capabilities</li><li>-Unfamiliar to clients</li></ul>	<b>7</b>
<b>MonoGame</b>	<ul style="list-style-type: none"><li>-Open-source(free)</li><li>-Used for 2D games</li><li>-Games are compatible with many operating systems</li></ul>	<ul style="list-style-type: none"><li>-Uses Microsoft's XNA framework which no one in the group is familiar with</li></ul>	<b>6</b>
<b>PICO-8</b>	<ul style="list-style-type: none"><li>-Simple and compact engine</li><li>-Creates retro style 2D games</li></ul>	<ul style="list-style-type: none"><li>- Simplicity limits functionality</li><li>- Great learning platform, but we are more interested in a quality product than a quality learning experience.</li></ul>	<b>6.5</b>

# Areas Of Concern & Development

## Development:

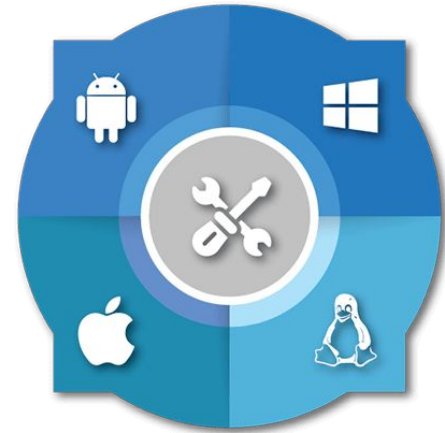
- Interactive real-world cyber security challenges
- Easily accessible by multiple OS platforms
- Engaging game narrative - *“Break Out Of Facility”*

## Concerns:

- Unity does not allow us to multi-platform collaboration
- It is difficult to save game progress on Unity

## Solutions:

- Split game into various levels so everyone can work together
- 2 pairs construct game levels, the last pair work on scripting



## Level 1: “The Awakening”

- The protagonist awakens in a dimly lit room, disoriented. Surrounded by cold, metallic walls with an emblem.
- The only exit is a door secured by a keypad demanding a password.
- Basic terminal commands link to a piece of scattered information.
  - Conditionally setting up the level so the player can interact upon or tampered with.
- **Goal: Introduction To The Terminal & Game**

## Level 2: “Hallway Encounter”

- Venturing through the halls, the protagonist eavesdrops on a conversation between two guards.

# Conclusions

- **Refreshing Cybersecurity Training:** CyEscape transforms monotonous learning into an engaging, game-based experience.
- **Gamified Learning with Unity:** Utilizing Unity, CyEscape surpasses traditional engines, enhancing learning through interactive gameplay.
- **Creative Solutions to Challenges:** Despite limitations, our team's innovative approaches ensure CyEscape delivers top-notch cybersecurity education.







Q & A