



Cybersecurity Exploration Game

Team Name: CyberExplorers

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3/28/2023

<https://github.com/thejduman/UrbanHitchcock-CapstoneDungeon/tree/main>



The Project

- A 2D exploration game that teaches players about cybersecurity
- Developed in Unity/C#
- Multiple areas to explore
- Collect journal entries containing information about cybersecurity
- Players are quizzed on this information in question trials
- The player must get a passing grade to proceed to the next area
- Each area has harder questions than the previous area
- Game ends once the player has cleared all areas



System Features

- Movement
- Interact command
- Saving progress
- Map
- Journal pages
- Menu
- Question trials



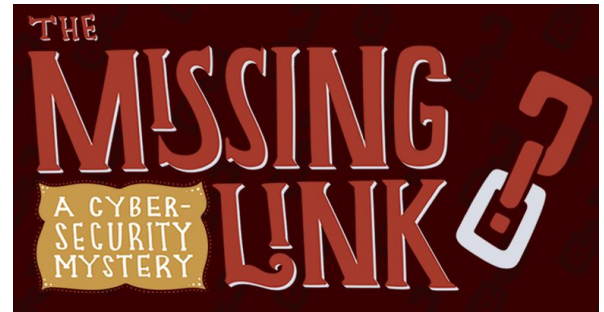
Background

- Similar to capture-the-flag games
- Example - National Cyber League
 - Questions are split into categories
 - Points for answering questions correctly
 - Questions require technical skill and use of external software tools
 - Competitive - which team/individual can get the most points
- Different from our project
 - More focused on education
 - Multiple-choice questions only
 - More than just a quiz game - features environments the user can explore



Background - another example

- The Missing Link from Texas A&M
- Player analyzes emails to determine if they are phishing
- Objective is to determine what led to the disappearance of a social media influencer
- Different from our game
 - Covers more aspects of cybersecurity
 - Has environments for players to explore
 - Questions aimed towards people with a computer science background



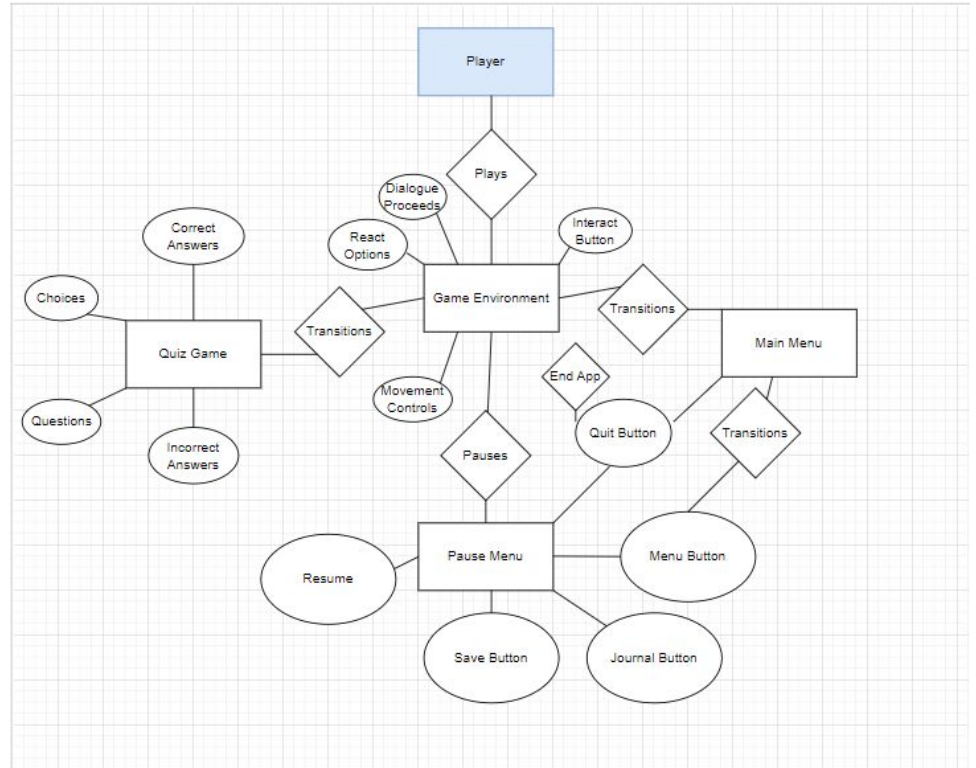
Project Plan

- Original plan
- Deviated from this plan slightly
- Focused more on functionality instead of visual polish

| Task | Length | Dependent On | Status |
|---|--------------------------|--------------------------|---------------|
| Establishing Bases | Expected Time ... | What needs to ... | Y or N |
| A. Character Creation | 1 week | B | N |
| B. Establishing Top-Down System | 1 week | A | N |
| C. Creating a Database | 1 week | | N |
| D. Conceptualize Questions | 3 weeks | | N |
| Game Specific Details | | | |
| E. Creating World Design | 2 weeks | B | N |
| F. Creating the Dungeons | 2 weeks | E | N |
| G. Creating the Controls for the Character | 1 week | A | N |
| H. Creation of the Title Screen | 1 week | T | N |
| I. Creation of the Menu | 1 week | T | N |
| J. Creation of Puzzles | 2 weeks | E | N |
| K. Creation of Interactable Objects | 2 weeks | A | N |
| L. Creation of in game Text boxes | 2 weeks | T | N |
| Storage Tasks and Management | | | |
| M. Connect the Game and Database | 1 week | | N |
| N. Find a way to store save data | 1 week | M | N |
| O. Find a way to load save data | 2 weeks | M and N | N |
| P. Find a way to store journal notes | 2 weeks | M | N |
| Q. Find a way to store questions and answers | 2 weeks | M | N |
| R. Establish difficulty levels for questions within the database | 2 weeks | M and Q | N |
| S. Find a way to influence interaction between answers to questions | 2 weeks | M, Q and K | N |
| User Controls Tasks | | | |
| T. Development of UI Interface | 4 weeks | | N |
| U. Tutorial for player Character | 2 weeks | A and T | N |
| Playtesting | | Do during Dev | |
| V. Debugging Sequence | 7 weeks | | N |
| W. Test run of overworld systems | 3 weeks | | N |
| X. Test run of puzzles and dungeons | 2 weeks | | N |
| Playtesting | | Do during Dev | |
| V. Debugging Sequence | 7 weeks | | N |
| W. Test run of overworld systems | 3 weeks | | N |
| X. Test run of puzzles and dungeons | 2 weeks | | N |
| Y. Test run of question trials | 3 weeks | | N |

Technical Description

- Current Proceeds
- Future Journal Procedures
- Establishment of more objects





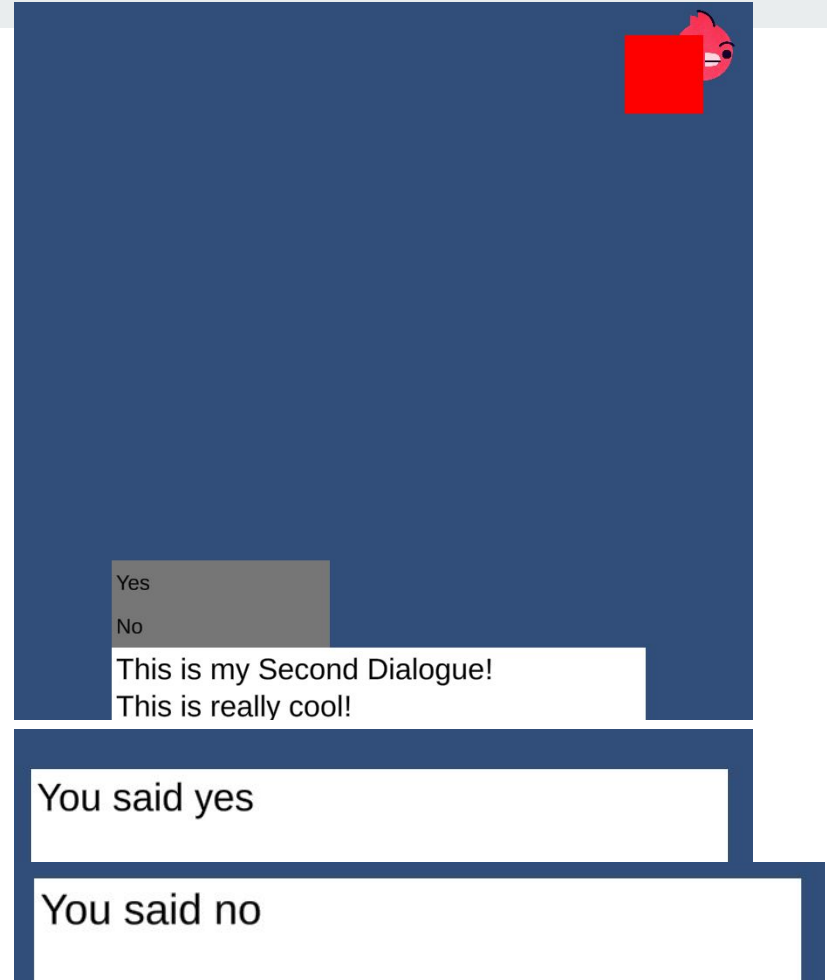
Accomplished Work

- A player character with basic movement
- Dialogue box with responses
- Object interaction
 - Interaction triggers an action in the game
- Quiz game
- Pause menu
- Main menu



Dialogue Boxes

- Creation of Dialogue Objects
- Player able to proceed through dialogue
- Player able to choose a response
- Game reacts to chosen option





Quiz Game

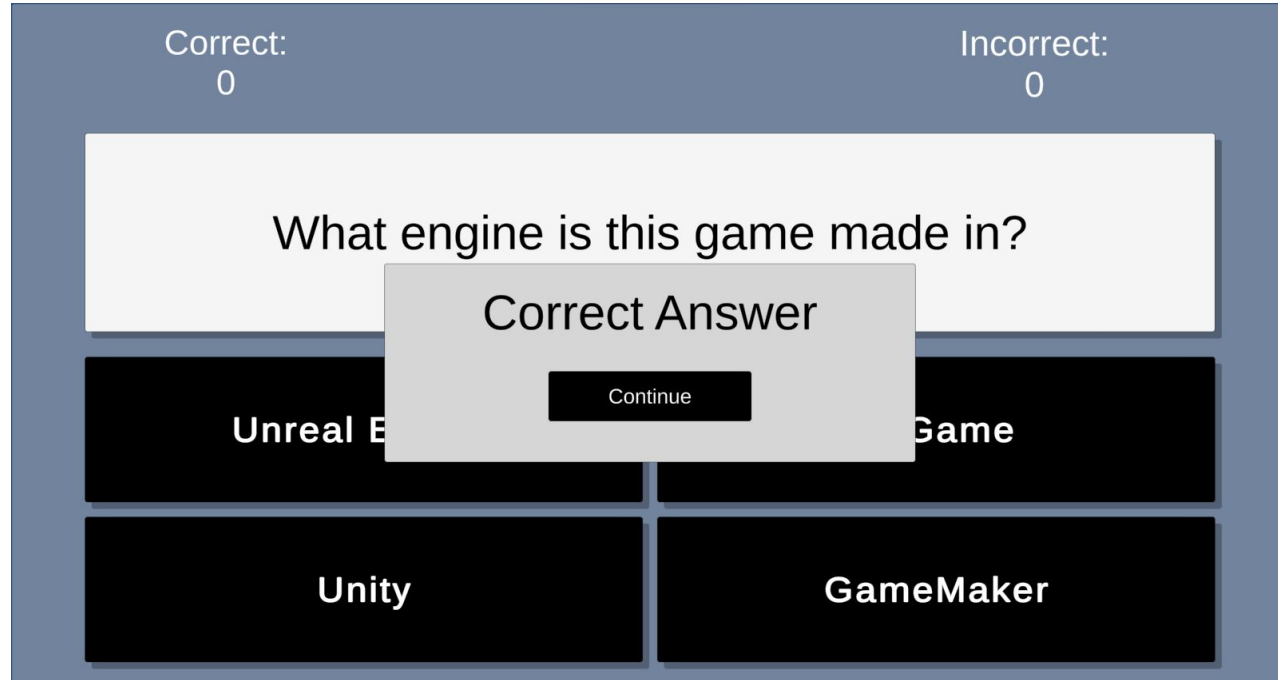
- Loading of questions from an array
- Random selection of questions
- Player selects an answer
- Game checks if answer is correct
- Tracking number of correct and incorrect answers

| | |
|-----------------------------------|-----------------|
| Correct: 0 | Incorrect: 0 |
| What engine is this game made in? | |
| Unreal Engine | PyGame |
| Unity | GameMaker |



Status

- Quiz Game
- Menus
- Objects/Interactions





Effort

- Agile Development
- Clockify, Trello

| Brian's Contributions | Julian's Contributions |
|--------------------------------------|------------------------|
| General Planner/Delegator of Tasks | Team Liason |
| Developed Menus and Dialogue Systems | Developed Quiz Game |



Lessons Learned

- Editor/Build graphics comparison
- Merging of Works
- Where to direct Focus
- How much one should contribute



Expected Forthcoming Activities

- Insertion of Graphic Assets
- Insertion of more objects (NPCs, Journals, Structures)
- Development of more scenes/locations
- Refinement of Player Controls
- Development of Questions for the Quiz Game
- Development of Database to store information and data



Expected Forthcoming Activities

| | | |
|-----------------------------------|---|----------------------|
| Insertion of Graphic Assets | Intend via Unity Asset Store | To be done by Both |
| Objects/Scenes/Locations/Controls | Code in C#, Modifications in Unity Editor | To be done by Brian |
| Question Conceptualization | External Research | To be done by Julian |
| Storing of Data/Information | SQLite, Code in C#, Tie Ins with Unity Editor | To be done by Both |