Vertically Integrated Projects

GitHub

FIU School of Computing & Information Sciences

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VR-Gaming to Broad Participation in CS 1.0

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Problem

Data has shown that Computer Science(CS) professionals are on high demand. Unfortunately, data also shows that there is a low graduation rate, and low levels of interest from women and minorities like Black/African American and Hispanics. Attempts have been made to improve this imbalance, but they haven't been effective.

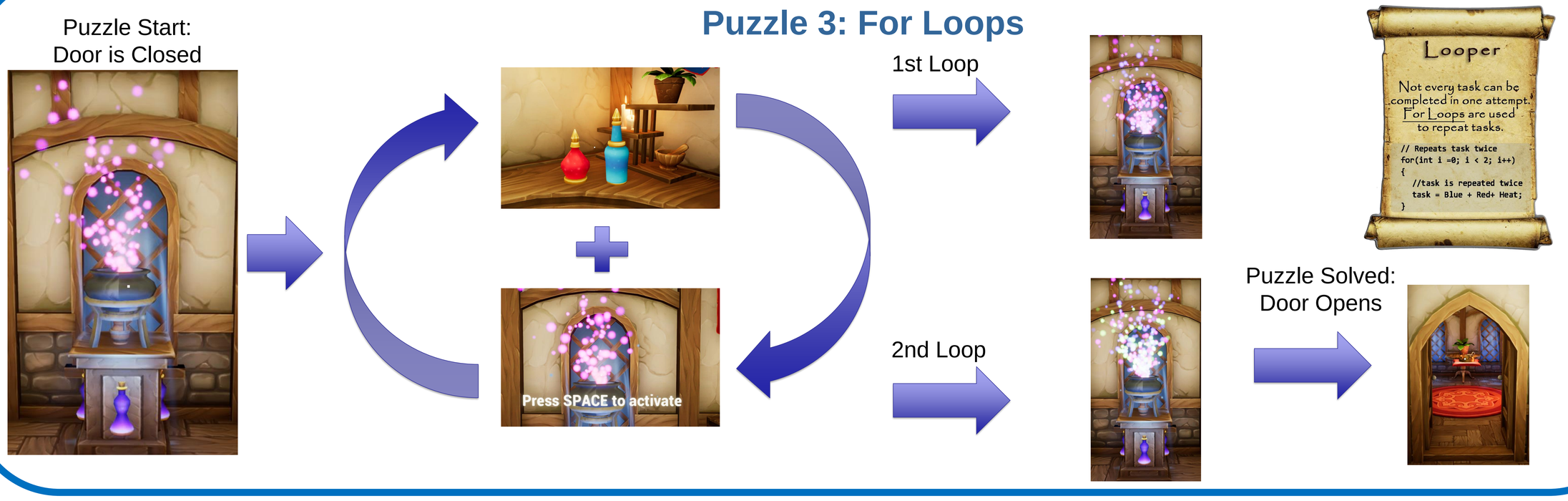
Solution

The proposed solution to this issue is **Alchemist Escape**, a video game designed to increase awareness and interest in CS. The core concept of this game is to teach the player about CS concepts at a subconscious level through play. Research will be done on the player's performance to improve future iterations of the game.

Current System

Current software and games that focus on either simulations or instructions are aimed to educate the player. Games with an educational purpose do not generate as much interest as games that focus on entertainment.

Puzzle 3: For Loops

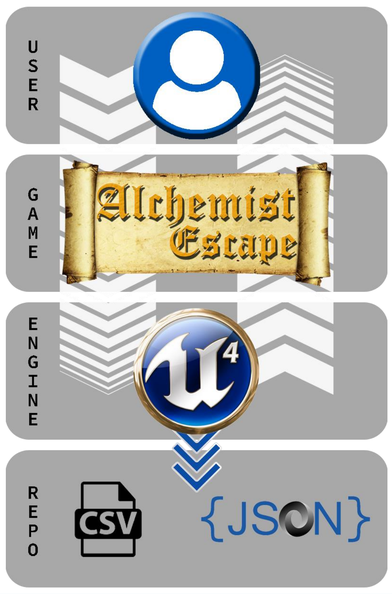


Requirements

Individual contributions:

- Puzzle 3: Environment Creation
- Puzzle 3: Object Collision Maps
- Puzzle 3: Pressure Plates
- Puzzle 3: Logic for Pressure Plates
- Heads-up Display (HUD)
- Main Menu
- In-Game Menus

System Design



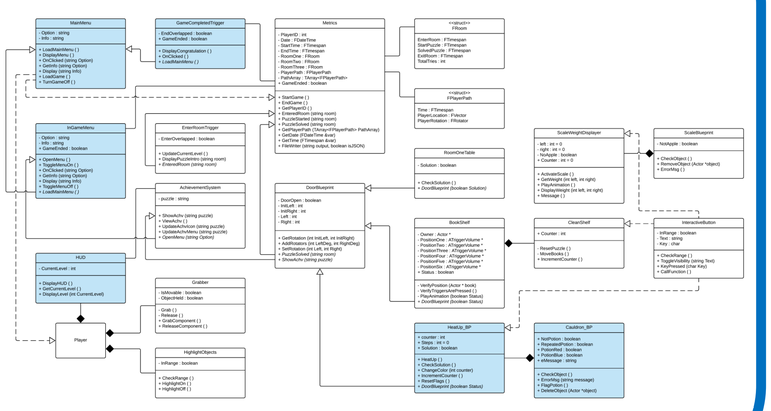
Implementation

- Unreal Engine 4: The game is developed and executed on Unreal.
- Blender & Photoshop: Used to alter objects or textures for the game.
- C++ & Blueprints: The code used to implement the actions in the Unreal Engine.
- JSON & Text Files: The data that the metrics collects from the user is stored in these file types.

Future Work

- Add more puzzles to teach more concepts.
- Expand VR functionality.
- Port game to Mobile Devices.
- Improve current game based on gathered metrics.
- Use adaptive learning to better cater the puzzles to the player in real time.

Object Design



Summary

- Created interactive experience that increases player interest in CS.
- Designed for all skill levels.
- Use game metrics to improve the game in later iterations.

Acknowledgement

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