Arcade Escape Room

Blake Collins' Senior Project

Motivation

- Games that were made to be quick, off and on things that someone could pick up and play are usually mobile games that are ineffectual, and only dulls the senses so that they can get you to get you to fork over money.
- I wanted to make a game to stimulate the mind and keep it warm and ready to make decisions, to replicate the feeling of a choose your own adventure book, stirring the imagination and ability to visualize the scenario that has been given to them.
- The game requires some problem-solving ability as well as reading comprehension, and perhaps in later iterations may be used as a teaching aid for those learning these skills or the English language in general.

The Idea

- This is a timed escape room game. Its purpose is to entertain and keep alert the people that play it.
- This programs modular design allows for it to be expanded wide or tall from the base framework I am putting forward. This modular design can allow for multiple different scenarios, different “rooms” and a variety of endings.
- The multiple, randomly selected rooms gives the user a variety of different experiences with every playthrough.
- The timer adds extra variability and challenge, potentially interacting with it as a negative consequence to certain actions, time attack modes or different endings depending on the scenario.

Requirements

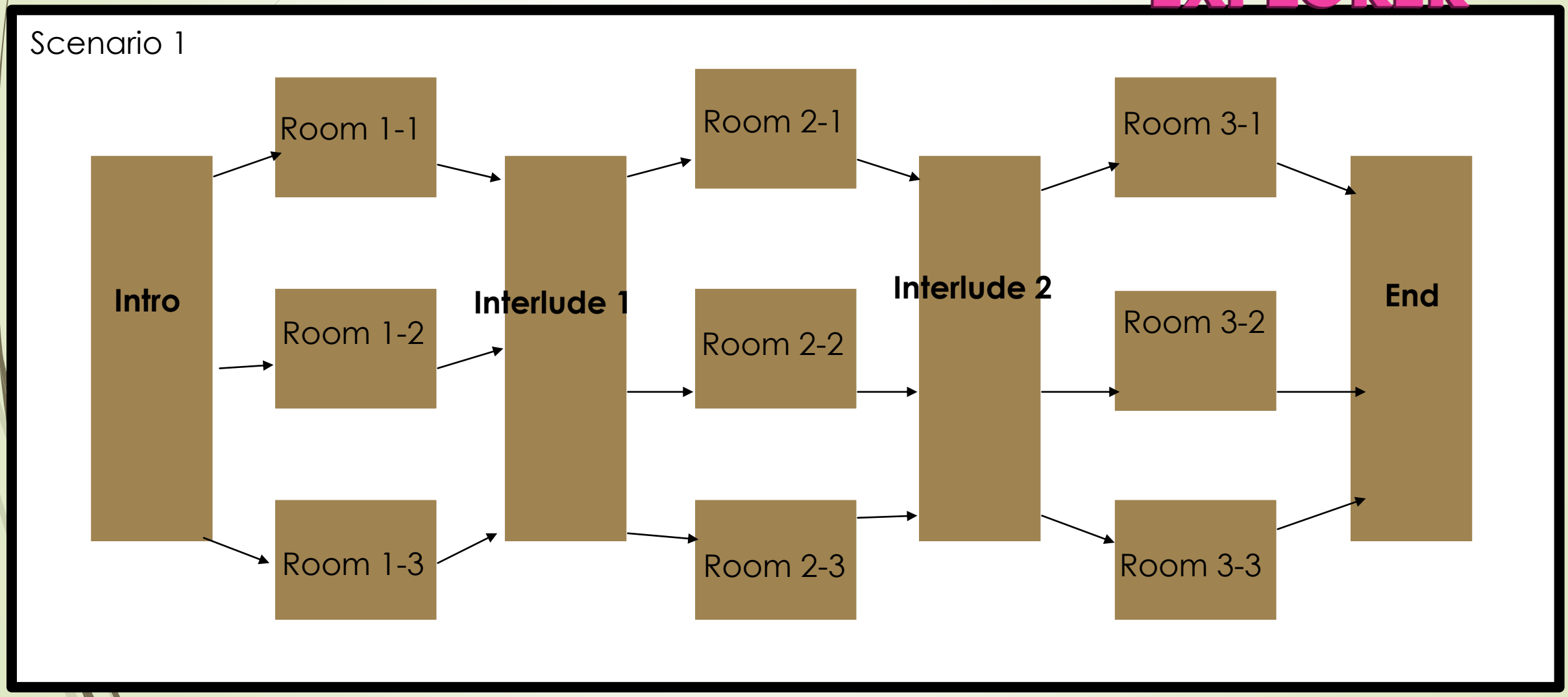
Hardware: A computer, a monitor, a keyboard. There is nothing technical about the hardware requirements as long as you had a computer made in the last 10 years or sooner.

Software: nCurses library, access to the command line, preferably have the Linux OS or access to a virtual machine that can run the Linux OS.

Design

- I created this program with a modular and easy to program design intention, each room easy to program to allow for greater complexity of the puzzles that are held within.
- Each room is a very basic series of if-else clauses and do while loops that hold the user in a room until they figure out the puzzle.
- Each room and action must be described to properly allow the user to understand what is going on.
- A rand sequence determines which room of a given level is chosen to create a fresh experience for each playthrough of the code.

Sample Visual Aid



Demonstration

Test Plan Strategy

- Manual tests of the code were performed by three individual testers.
- The code tests were performed by making a separate testing area with functions that had been stripped of the need of user input and then giving it a string input to brute force its way through the puzzle.

Test results

- The test results came out successfully and gave the desired results as predicted. There was a minor mishap in the firstroom1 that I have not been able to reproduce, so it might be tester error.
- In addition, there was an error in room 3 that had a value that was misnamed which was corrected with tester help.

Challenges

- As a single producer of this code, it took a surprising amount of storyboarding and effort to put this project together, and the code took out to be about 4000 lines of code.
- In addition to how much coding and writing it took, the testing process involved having to learn how to install gtest, make a private testing suite and a conversion of previously user dependent code to be machine testable.

Future Works

- They are many way to build upon this work. As mentioned previously, there can be efforts built to make it more of an edutainment game with emphasis given on increasing understanding of the English language as well as more complex words and sentence structure.
- This can be more constructed more linearly by adding on to the previous iterations further, more rooms, more puzzles, more stories and themes to stir the minds of people.