**Progress Report**

**- Increment 3 -**

**Group #2, The Labyrinth**

# Team Members

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1. **Project Title and Description**

In our game, the Labyrinth, you wake up in a peculiar home with no knowledge of how you got there or why. Unlock new areas of the house using clues, hints, and solving puzzles. The story ends in the main character realizing they have died, and this is their mind’s way of coping and coming to terms with it. Each of the rooms in the house has different puzzles to solve, some of which unlock new areas of the house. Other puzzles give hints as to how to solve another puzzle later in the game.

1. **Accomplishments and overall project status during this increment**

During this increment we added functionality for the last scenes in the game: the Bathroom, the Loft, and the Backyard. Similar to the other rooms in the game, these rooms contain their own puzzles, clues, and make use of the clues that were given in other rooms. We also added audio to the interactables to give the game a less rigid feel, including voice lines and ambiance for each room. We finished the save system, and added a title and pause screen to give the game a more polished look. Melanie and Harrison continued to draw the sprites for the remaining scenes, and other team members used temporary ones in the meantime.

In the Loft we implemented a bookshelf puzzle that reveals a hidden door to the user. In this room, the interactable items are the painting, the bookshelf, and the door that the bookshelf reveals. When the user clicks on the painting, it should enlarge and allow the user to view the painting. When the user clicks on the bookshelf it should enlarge to allow the user to find the correct book. This puzzle relates to the fridge puzzle in the kitchen, whose answer is “FIREMAN,” alluding to the book Fahrenheit 451. When the user clicks Fahrenheit 451 on the bookshelf, the user should see the bookshelf in the room move to the top of the screen, revealing a hidden door. The user can then click on the door to enter the final scene of the game, the backyard.

In the Bathroom, we implemented a puzzle that reveals a memory from the character’s life and a few interactable objects. The interactable objects are the mirror, the shampoo, conditioner, body wash, the bike lock, and the cabinet under the sink. Clicking on the mirror allows the user to view the inside of a medicine cabinet. When the user clicks on the shampoo, conditioner, or body wash bottle, the image should enlarge allowing the user to view the label on the bottle. Each of these bottles have different sets of numbers.

The puzzle in the bathroom is the bike lock, which has the cabinet under the sink inaccessible while locked. When the lock on the cabinet is clicked, the image should display and allow the user to click to enter numbers into the lock. A clue to this puzzle is found in the funeral suit in the bedroom. When the user clicks on the suit, a poem is revealed to be where the pocket square should be. This poem alludes to the color blue, which references the blue shampoo bottle in the bathroom. The shampoo bottle contains the correct answer to the bike lock, 531. When the user enters this into the bike lock, the lock disappears and the cabinet becomes interactable. Once the cabinet is unlocked, the user can select it to reveal a picture showcasing a photo of the character’s graduation.

We added in a new voice line that gives a new hint to the player when this photo is revealed. The photo is dated 5/3/20XX, and the player reveals this was their graduation date and their birthday. This hint can then be used to solve the TV puzzle in the bedroom. We have updated the TV puzzle to now be completed when the channel knob is turned five times, and the volume knob is turned three times.

The Backyard does not contain any puzzles and instead signifies the end of the game. A voice line plays indicating that the user has figured out that they are dead, and has come to terms with their situation. From this screen the user can click anywhere, and they will be taken to the “credits” screen.

In each of the rooms we added background noise to increase the overall immersion and improve the ambiance of the game. We also added some specific sounds to certain puzzles, using audio files from freesound.org and voice lines recorded by Melanie. Whenever you enter a room, there is the sound of a door shutting. The title screen has an ominous background noise, creating atmosphere. In the living room we added an audio file depicting wind chimes, a clock ticking, and some outdoor rain. In the kitchen there is the sound of a refrigerator humming. In the bedroom and loft there is a generic ambiance of a quiet room. The bathroom has the sound of a dripping faucet. Some interactables have their own audio clips as well. The TV puzzle plays a looping static noise until the puzzle is solved. Solving the bookcase puzzle triggers an audio clip of a book. Every interactable in the game that displays a UI has a voice line attached to it, furthering the plot, giving the game a more polished feel, and/or giving clues to solve future puzzles.

We implemented a new save system which allows the player to save their progress and reload the game at a later time. On the new title screen, the player has the option to start a new game, continue using their most recent save data, or quit the program. Selecting “New Game” will set all puzzles to unsolved and lock all doors. It will also set the player to load into the first room in the game, the living room. “Continue” restores all progress that the player made in their saved session and loads them into the most recently visited area. “Quit” simply closes the application. We also have a new in game menu with three options. “Save and Return to Menu” saves all the player’s progress and loads the title screen. “Save and Quit” also saves their progress but then closes the application. “Quit” closes the application without creating any new save data.

1. **Challenges, changes in the plan and scope of the project and things that went wrong during this increment**

One challenge we had for this increment was the addition of audio to the game. Initially, Melanie had a hard time getting Unity to accept the voice line audio files as MP3s due to her computer’s security software. However, she found the issue and was able to successfully upload the files.

Another challenge we experienced was getting the TV puzzle to play three different audio files in order. Initially the tv was playing the static after the user had already solved the puzzle, then, after this was fixed, the tv was playing the very first voice line after the user had solved the puzzle, exited the puzzle, and then revisited the solved puzzle. This took a couple tries to get right but we eventually got the audio files to play successfully.

The second challenge we had was successfully getting the enlarged image of the bookcase to close when solved, as well as getting the audio to match when this was happening. Harrison tried to figure out the issue, with Melanie’s help, but when something was fixed something else would break. Although it does not match the consistency of game objects disappearing when solved, it was ultimately more costly (in terms of time and resources) to continue to attempt to fix it.

Another challenge was testing the save system to make sure it worked completely. We were unable to test it fully until the game was complete, due to only being able to run the game in the Unity interface. This meant that we could only simulate closing the application and rerunning it, as opposed to actually being able to exit and reopen the game. We were also fully unable to test if the quit functionality worked, although this was not a big deal as it was only one line of code.

We also found challenges in implementing a more fleshed out save system. Because of our choice to include logic inside the UI, which was disabled by default and enabled once the user interacted with the interactable, we were not able to implement logic that loaded state without a dedicated state loader object. This led to a save system that is not as modular and fleshed-out as we would have liked, but that is still fully functional.

We were also attempting to add animations to the rooms in scene change to make the game feel smoother, but found it difficult to implement due to every object requiring their own animation logic.

1. **Team Member Contribution for this increment**

Melanie Bynum

* + For the progress report, I updated section C by fixing grammar issues throughout the section and added in extra content. I mentioned how we added in voice lines to each of the rooms in the first paragraph. In the second paragraph, I explained how the bookcase puzzle relates to the fridge puzzle and the correct way to solve it. I mentioned that each bottle in the bathroom has its own unique set of numbers, and then wrote the entirety of paragraph four, explaining the bathroom puzzle. I wrote paragraph five, explaining how the voice line hints to the TV puzzle in the bedroom, a new addition to the game.
  + For the RD document, my work was reused from last increment and I mostly just proofread. I updated a couple functional requirements, but that was it.
  + For the IT document, I updated the non-functional testing section, explaining how Harrison would test the save state property with the save and quit function.
  + For the source code, I worked with Alora to create the bike lock puzzle scripts. I made the clicker counter and started the BikeLock script. She continued working on it, and then I tested it out the next day. I implemented it into the game, but realized it had issues. With the help of Julio, we successfully fixed it and got it to work. I set up the shampoo, conditioner, and the bodywash interactables. I added in all my sprites into the game (list below), and set up interactables for several of them. I set up the painting interactable. I added all the voice lines into the game using the audio settings and/or Jacob’s PlayOnClick script. We also had issues in the living room where the sounds all played at once, so I fixed that as well after I initially added them in. I started the set up for the bookcase puzzle, adding in the bookcase and giving it the box collider to make it interactable. Harry originally tried to make it work one way, but then we had trouble implementing it. Instead, Harry and I decided on having me push a more basic version of the puzzle that we worked on together. I added in the backyard art into the backyard scene and added the scene to the build, so the door in the loft could actually move into the scene. I also added in the credits into the backyard scene by making the backyard art interactable with the Interactable script and the backyard’s box collider.
  + For the video presentation, I worked with Julio and wrote the script for part A. I also recorded part A and put the video together like the previous two increments.
  + I also drew many sprites for the game like last increments. For the loft, I drew the bookcase, hidden door, painting, and fireplace. For the bathroom, I drew the cabinet, the bike lock, the toilet paper holder, the toilet, the bathtub, and the graduation photo inside the cabinet. I also drew the note in the funeral suit in the bedroom and the backyard scene. I didn’t do as much on the documents this increment, so other people could get their fair share and I was told most of my art would factor into my documentation grade.
  + I also performed all of the voice lines in the game.

Alora Clark

* + For the progress report, I wrote the first 4 paragraphs for part C and wrote the first paragraph (with Melanie’s additions) , the second paragraph, and third paragraph for part D
  + For the requirements and design document, I did parts 22, 27 - 46 for number 2 as well as the design of the use-case diagram
  + For the implementation and testing document, I added the last paragraph to part 5
  + For the source code, I implemented the suit “clue” for the bedroom and the cabinet “clue” for the cabinet under the sink in the bathroom. I collaborated with Melanie for the idea of the bathroom puzzle and implemented a script that unlocked the cabinet with the click of the shampoo bottle. We discussed the feature and thought it was weird, so we both worked on a script for implementation of the bike lock, however Melanie was nice enough to finish it up and test it to get it working correctly. I also fixed the script that works with the audio for the television puzzle.
  + For the video presentation, I did part D

Harrison Grimm

* + For the progress report, I wrote about the audio and save systems in section C.
  + For the requirements and design document, I added descriptions for the bathroom and loft in section 4. We also reused my contributions to sections 6 and 7.
  + For the implementation and testing document, we reused my contribution for section 2. I wrote about execution-based functional testing for the bookcase puzzle, the save system, and game audio in section 3.
  + For the source code, I wrote scripts for the title screen and in-game menu operations. I wrote a script to handle the static noise on the TV in the bedroom. I implemented the bookcase puzzle. I added background audio to several scenes to increase the ambiance of the game.
  + For the video presentation, I recorded the demo.
  + I drew several sprites for the game as well.

Jacob Petrillo

* + For the progress report, I added the fourth paragraph to section D.
  + For the requirements and design document, I updated the class diagram as well as one of the sequence diagrams, as our implementations for the other two use cases did not change from iteration 2 to 3.
  + For the implementation and testing document, I added some info about testing the save system to section 3.
  + For the source code, I wrote a script to play audio upon clicking an object. I upgraded the save system from being able to save the state between rooms on a single playthrough, to being able to write the game’s state to a file so the player can load it up at a later time. I also implemented a pause menu so the user could have an easy way to save the game, as well as access the title screen or quit.
  + For the video presentation, I recorded part B.

Julio Sarda-Perez

* + For the progress report, I detailed the challenges we faced in implementing a fleshed-out save system and animations.
  + For the requirements and design document, I wrote out textual descriptions for the use case diagrams for the bathroom and the loft.
  + For the source code, I fixed issues with the save state system not restoring rotation to the TV Knobs and the clock hands, and I met with Melanie to implement the bike lock puzzle.
  + For the video presentation, I met with Melanie to discuss and write the script for part A.

1. **Link to video**

<https://drive.google.com/file/d/1D67mgkzElxet_4SSzPk1-OpTDvaVUkX1/view?usp=sharing>