

Mental Asylum

User Experience:

This educational RPG will allow the user to better understand various mental disorders through the progression of the game. Upon starting the game, the storyline is displayed with instructions to allow terminal-player interactions. The user can move the character by using the keys A[left], W[up], S[down], and D[right], though the room itself will remain the same. As the character progresses through the game, he or she will eventually make choices which lead to tasks that incorporate material learned over the year. A more detailed explanation of the plotline is stated below:

As the user, you suffer from amnesia and are trapped in a building (mental asylum that has 1 floor). The only way out is through the front door, which is locked and conveniently requires a exit code located on one of the rooms of the building to escape. You can move to another room via the hallway. Ideally, each room will have a task that requires a visitation to another room, which will direct the player through all rooms (if there are more than one). Each floor influences a certain behavior. For example, the room that educates the user about obsessive compulsive disorder may compel you to sort the scattered files on the floor (e.g. based on quick sort, bubble sort). A pop-up hint will sort the files in real time if clicked, for the occasion that the user forgot the sorting algorithm. The object obtained from that room may be a file with a list of medications used to treat OCD (used when solving the final exit code). By the time the user (you) leave the building, a uplifting message of hope should be imparted in addition to a greater solidification of various computer science algorithms. (Note: actual gameplay may not strictly adhere to the above example).

Classes:

- Character - superclass of User and NPC and contains an ArrayList of strings as an inventory.
- User: Has an inventory of items.
 - Inventory is used as an ArrayList. This way, the user can view all of his or her items and organize them using MergeSort, QuickSort, BubbleSort, etc.
- NPC: Interacts with users with specific and items dialogue depending on the situation.
 - Inventory is used as a stack because NPCs do not need to view their inventory. Users have to complete tasks in a certain order so items are arranged in a corresponding order.
- Location: Depending on where the player is, the state of the background will change and the types of hints will change (e.g. hospital ward, hallway).

- Tasks: Contains a queue of instructions for the user
- Floor: Contains an arraylist of all the rooms

Showcase:

- *ARRAYS*: To name a few, the exit code required to escape will be in an array, while the user's inventory will be an ArrayList.
- *INHERITANCE*: The game will incorporate inheritance by having a superclass of Floor that branches to different floors with corresponding mental disorder. For example, ADHD would be one branch and schizophrenia would be another. These disorders would then extend to specific topics such as symptoms and treatments.
 - Abstract superclass Building would have non-abstract methods to calculate points and an overwritten toString to display the status of the user. On the other hand, an abstract method would compare the user input to the correct answer.
 - Inheritance can also be used in creating different types of characters (e.g. patients, janitors)
- *PRIORITY QUEUE*: Priority queues can be used to sort the user's inventory (e.g. sorting based on rarity, alphabetical order). It can also be used to list tasks the user should undertake in a recommended order.
- *SORTS*: User will have a tasks of sorting name tags or IDs. He/She will have to choose between types of sorting methods. Sorts can also be used for sorting the user's inventory.
- *BINARY SEARCH*: Used for locating a certain object in the inventory

Stretch:

- Creating a visual game (Processing related elements)
 - Moving characters
 - Continuously changing background that corresponds to character movement
 - Pop-ups (e.g. dialogue boxes, inventory)
 - Interactive objects (e.g. the user attempting to turn a door handle)

Extra Functionality:

- User can choose the difficulty of tasks (e.g. quicksort would have a higher difficulty than bubble sort)
- Saving the game file by updating a text file with the information of the game
- A time limit for each round
- Interactions with other characters (e.g. doctor, janitor, other patients)
- Activism regarding the conditions of mental institutions and their unjust practices (e.g. influencing a patient's story to make it seem as if they are mentally ill against the patient's will)
- Music and sound effects