**EE 021 Midterm Project Report**

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**Project Title:**

**List 2-3 objectives of your project (in bullet points)**

1. Create a turn-based RPG with a user-friendly ui that contains a gameplay look and contains conditional outputs (win/lose when player/enemy health goes to zero)
2. Collect high score data based on user choices such as difficulty, role, and attack/defend choices throughout the gameplay loop.
3. Open and utilize files such as text files, sounds, music, and images to create an enjoyable experience for the user.

**List the main Python programming features (at least two) that you explored in your project with a description of how and why you implemented these features:**

1. A user-friendly GUI that changes based on user button input
2. A gameplay loop that takes the user input and changes the user experience, and outputs unique, yet distinguishable data as a result.
3. Uses a random algorithm to prompt users to press buttons to collect more data; has an algorithm to act as the enemy.
4. Uses this data to calculate a score, which is sorted, and the highest score, along with details regarding the attempt, is displayed at the beginning of every playthrough.

**What is the \*\*one\*\* thing that is unique about your project? (1-2 sentences)**

Answer: My project is a game with a thought-out GUI that many projects probably don’t have, as most will make the GUI functional enough. I added features such as hover color in order to add to the aesthetic and user experience.

**What are possible parts of Python code that will constitute for “significant work” on the project? Think about the programming that you did for the project that was not part of the project milestones. (2-3 sentences)**

Answer: The select, show, and draw functions display significant work as they are structured and ordered in a way that allows the game to run, and the pause function that allows for each reaction from the enemy, is an example of significant work. Having to integrate something as difficult as adding even a slight delay took most of my time, allowing for my “animations” to play. Each defined function also took a lot of thinking out because I had to make sure things didn’t infinitely loop and crash my program. This also stands for the high score sorting function, which contains an error case that disallows infinite loops that crash the program too.

**What are some Python programming concepts that you understand \*very well\* after completing the project? Think about the programming aspects that you may not have understood fully had you not completed the project (2-3 sentences)**

Answer: I feel like I understand loop functions and loading and using files much better now as a result of this project. I felt nervous about having to implement images and sounds, but the pygame module made it very easy, and I understood iterating through files much better as a result of this project.

**What are some Python programming concepts that you do not fully understand (that you may or may not have used in your code)? Think about the aspects of your code that you find most difficult / challenging. (2-3 sentences)**

Answer: The for loop that contains Pygame.event.get() confuses me, as I do not understand how this works since it’s not iterating over a list. All I know is from online forums that say that it’s essentially the entire gameplay loop, and perhaps the events that occur get appended into this “list” where we then code the rest of the game from there.

Coding for functions using the Class function was interesting and confusing at first. Like it’s an object where you can describe it using a function, then use other functions on it to obtain certain things. It confuses me, and I needed a lot of help understanding and implementing this concept within my code, but it made things very convenient.

**Rate the resources you used in your project as one of the four: Highly Valuable, Valuable, Not much valuable, Not valuable at all**

|  |  |
| --- | --- |
| Resource | Rating for how important this resource was for your project |
| Internet discussion forums (GitHub, StackOverflow, YouTube) | Highly valuable |
| AI tools (ChatGPT, Claude, Gemini etc.) | Highly valuable |
| Friends (EE 021 students, or other students on campus) | Valuable |
| Tutors (STEM tutoring center, online personal tutors) | Not valuable |
| Class resources (slides, office hours, practice) | Valuable |
| Other: | Choose an item. |

**What features did you want to implement in your project but did not have the time / know-how to finish?**

Answer: I wanted to implement animations into the project, but I did not have time to learn and implement animations. This would apply to the attacks, enemy reactions to actions, and player idle animations.

**Estimate the number of hours that you worked on the project (in total)**

Answer: I spent about 25 Hours or so on the project.

**If you were to change / modify one aspect of the project logistics and how it was managed in the class, what would it be?**

Answer: I wish the rubric were more friendly towards games. It was difficult to find out how to fulfill the project’s rubric requirements, but not impossible.