**Mary Zeng -- Design Proposal**

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This project is called the Ultimate Pokémon Adventure. It will be a Pokémon adventure game, which will be very similar to the actual Pokémon game. For example, it will store a player’s progress and let the player level up once he/she reaches certain points. There will also be an opponent AI, which will perform different moves during the battle based on the player’s level, which will be the hardest algorithm for this project. Also, the sidescroller will be used in this project.

After doing some research on similar projects, I divided existing projects into two categories: including visualizations and without visualizations. There are some Pokémon games others wrote in python that are text-based. For example, most of the information is coded in “print” statement such as asking users which Pokémon to use. However, another type includes visualizations, which enhances users’ experiences. Both of these types try to simulate the actual Pokémon game.

My project will inherit the simple idea of Pokémon but also adding some unique features such as returning the best move for the user if they are willing to get some of their health points taken off. My project will also include visuals such as the setting of the game and the characters themselves.

In terms of the finalized project, there will be a player class from which the user and the opponent AI will inherit. Within the class, there will be methods such as ‘attack’, ‘switch pokemon’, and ‘bestMove’. Also, there will be startingMode, gameMode, and other modes for the game structure. There will be many dictionaries to store the general info about each Pokémon such as “available moves”, “type”, “hit points”, “HP”, etc. To save the progress of a user, I am planning to use a dictionary to store the information. Finally, there will be the traditional redrawAll, keyPressed, and mouthPressed to control the game.

As for my algorithm, which will help select moves for the opponent, I plan to first figure out all the basics in appStarted before I start planning my algorithm. My idea is to make the opponent(computer) select moves based on the level of the player and the health point of the player’s Pokémon. It will also depend on the type of the Pokémon to return the best moves.

My goal is to figure out the algorithm by the end of the first week and also have all the setup dictionaries ready. In my second week, I’ll focus on building different methods with all the basic information I have. Towards the end of the second week, I’ll start adding pictures for the aesthetic part of the project. By the end of the second week, I’ll reach the MVP level of my project. In my last week, I will just add some extra features to improve my game such as multiplayer.

I will have separate files for methods, setup dictionaries and algorithms. I will save and add my daily progress onto my hard drive in case my laptop stops working. I will also save another copy on Google Drive so I can access it anywhere, even if I don’t have my laptop.

I am not planning to use any external modules/hardware/technologies. I will mostly be using Tkinter.

**TP2 Update:**

I may consider adding a maze mode that involves back tracking, but everything else stays the same.

**TP3 Update:**

I used backtracking mode to generate different levels of maze maps. Also, I added a feature of ‘currency and stores’ where player can purchase special items that they can use in the battle mode. Also, now it’s no longer automatically catching the defeated Pokémon but rather catch it with ball before it dies, and the probability of catching it depends on the type of the ball.