Final Project
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GitHub:
https://github.com/sayaaoi/Pokemon-game.git

Part I: How the game works

There will be two players who can decide their Pokemon's name, initial HP (hitting points) and type by typing in information. There will be restriction on all those type-in values. If the user type in nonstandard information, the game will ask for input again.

Then player1 will roll a dice (only 1 and 2) to determine which player goes first. If it is 1, player 1 will start to attack. If it is 2, player 2 will be the first to attack.

After that, the game officially starts. Player 1 and player 2 attack each other by turn. Each round, every player gets a chance to attack the other. The attack points are randomly from 2 to 50 multiplying a coefficient based on the type of each Pokemon. There will be maximum 10 rounds. If in the 10^{th} round, there is still no winner, the game is a tie.

I also import time and string modules. Time module makes the game more interactive while string module is used in determining the restriction of one of the inputs.

Part II: Explanation of the code

There is one class called Pokemon, which includes initialization of Player instances and several methods. Initially, I thought I would need a separate class of Dice. In the process of working on the project, I found it unnecessary since I can call "random" module in methods to determine the value of the dice.

I created several methods including swap, dice, printWhoIsAhead, etc. to help make Battle method concise in the end. The swap and dice methods are created because one part of the game is that player 1 rolls a dice to determine who attacks first. If the dice is 2, player 2 attacks first. In this way, I need to swap the instance of Pokemon class to make the subsequent code work. In Attack method, it assumes instance of self attacks first. I googled this method online. (https://stackoverflow.com/questions/7255777/can-i-efficiently-swap-two-class-instances-by-swapping-dict)

I have getter methods which is a convention in OOP. I don't have setters since I don't want players to reset the value of inputs. The remaining methods serve the purpose as their names suggest. printWhoIsAhead method provides players a picture of whose point is leading while determinWinner method announces the final winner of the game when one of the Pokemon loses all HP after an attack.