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Final Project Write-up

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Workout Generator

For this project I chose to create a workout generator. The program allows the user to choose specifications and number of exercises, then returns a list of randomized exercises meeting those specifications. I started with the plan of allowing the user to choose what part of body they wanted to work on (upper body, lower body, core or full body) and the number of exercises they wanted to do. My first challenge came with how I wanted to store the exercises. Since I wanted to pull randomized exercises from each category, I had to decide what type of data structure would be most efficient to use. I started by using lists to store the exercises inside of the nested if-statements, but quickly came to a problem with that when I decided to expand the categories. To expand categories, I needed to pull from multiple categories and to create one list to return to the user. I then tried to store all the exercises in a Pandas dataframe so that they were all in one places and I could just search by label to pull from the different categories. That was short lived, as each category has a different number of exercises so I could not combine them all into a dataframe because each list had a different length. With that, I decided to just store all the exercises in lists at the beginning of the program.

Once I decided how I would store all the exercises and wrote all the if-statements to get user input on their personalized workout, it was time to figure out the most efficient way to pull the exercises without being repetitive. My solution was to write a function that could be fed a specific list (category) and number of exercises and would return that number of randomized exercises from that specific category. This worked perfectly until I came to the push group of upper body and wanted to pull from three different categories. My solution was to ask the user the number of categories inside each if statements. For the different muscle groups that pulled from multiple categories, I restricted the user to only input multiples of the group number. This meant for push it pulled from three categories so the user could only enter multiples of three, just as for back they had to enter multiples of two. This allowed me to create an additional function that took in that information and called the returnExercises function to efficiently pull from multiples groups but still by returning only one list to the user. By using the two functions it reduced any repetition I had in the program.

I feel that I surpassed my original safe goals by giving the user more options, adding circuit exercises, and allowing the user to see any list of exercises at the end of the program. My original plan only allowed the user to give general specifications, while the final program gave the user many options. In the returnExercises function, I put in a while loop that checked and prevented doubles from being printed in the list to the user. I was inspired to expand on my original ideas because the more I worked on the project the more I thought about how I could make it more personalized for my own use. I am excited to expand more on this project, and even try to turn it into a web-based program or application.

The internet was the biggest help along the way, the more my ideas expanded the more I read online about different ways I could implement my ideas. This caused me to expand on the knowledge I already had and also inspired me to want to learn more. One of the biggest lessons I learned is to be extra careful with syntax. I spent hours trying to debug my program and could not figure out what they issue was. It wasn’t until I took bits of my code and ran them separately in a new program did I find that it was a simple syntax error that caused the program not to output anything. This taught me that sometimes you need to break down your larger program to find the error. I also learned that sometimes you have to do something completely wrong, to figure what will work best for a specific program.

There is nothing differently I would do regarding this project. This project really sparked my interest in expanding my knowledge of python because it allowed to connect my love for fitness with my love for programming. I am definitely now inspired to expand on this project more to make it my own personal trainer.