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Project 2: Documentation & Report

Introduction

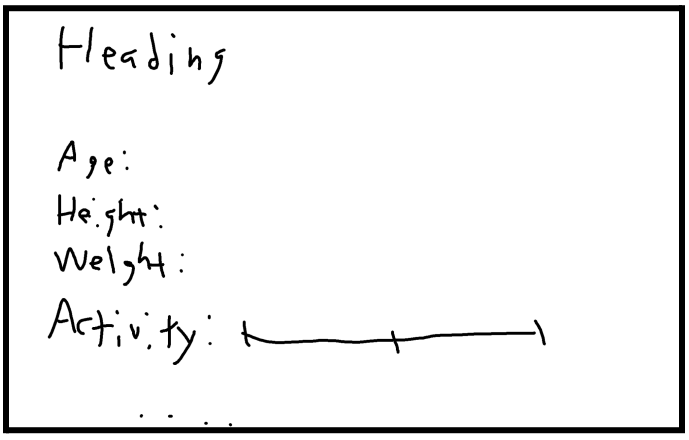
My established application was a Fitness app designed to assist users in deciding whether or not they should lose, maintain, or gain weight based on their current health status and desired goals. Then, a macronutrient and calorie plan is created for the user to follow to aide in their fitness journey. This was inspired by my current fitness goals and roadblocks I keep facing, and wanted to help others in this.

Usability Goals

I had a few usability goals. I wanted to make sure it was simple and easy to use and input information so that even the not-so-tech savvy individuals could also participate. This included minimizing clustering of questions by implementing columns and even giving the individual options of what units they would prefer to use to calculate their calorie expenditure. Also, I wanted to cater to the more advanced participants by including advanced statistics and options to input so that they can have a more in-depth analysis of their needs.

Design Process

I had a simple design that I originally wanted to include. However, as I was doing the project I learned more ways to optimize the interactive component, and made it a tiny bit more complex (in code) than just a straight down website.



Most of the design process ended up being an improvisation, learning as I went along through the design and through what was (and what wasn't) possible.

API Integration

The API I used was a Health API obtained from rapidapi.com. The link is Health Calculator API. I faced a few challenges, at first having trouble obtaining and using an API Key and then finding out that I had a free limit on the amount of API calls I could have made. However, this just made me be more efficient with the code. I learned a lot from the Project 2:

Step-by-Step guide that was provided and I utilized a lot of the API error handling. There was a specific instance where the way I split the JSON data wasn't being handled correctly, so I had to implement an if statement essentially checking if the column names were in fact 'goals' or 'activity_level' or whatever the case may be.

Widget Explanation

I used many widgets. The first one I learned to use was the radio one, and I used it as a way for people to switch between beginner and advanced options. Clicking on the advanced options radio button triggered an extension that one could click on for more data input. The widget I most used was the selectbox widget, for deciding a user's preferred units and sex. The number input widget was used for age, weight, and height. And my favorite widget to use was the select slider, since it gave me so much flexibility in where I can start and it was just super cool to use once I read through Streamlit's documentation.

HCI Principles

I applied many visibility principles more than anything, making everything exceptionally clear to the participant or user what buttons and numbers they had to input. I personally believe it is very intuitive. I included some feedback, including my favorite, the spinner, which let users know that their data was being calculated. I was very consistent with the layout, but did not offer much flexibility. I have to figure that one out, I think I made things too concrete in how they should be done, but honestly I don't currently see any other way to go about it. One thing I could definitely improve on was the way I prevented errors, as I led myself to trust Streamlit's own APIs such as the select_slider to give its own constraints. I did however have to convert a lot of the data into floats and manipulate it within the code in order to continue calculations.

Conclusion & Future Improvements

I think this is the part I am really looking forward to. In the repository of the code I left a lot of rough drafts and unfinished ideas that I had for the website, that unfortunately I had to abandon in the interest of time. I wanted to integrate machine learning elements into the site, and have it contain multiple tabs, and I believe that is something I will continue to work on. I even had synthetic data generated in hopes of creating a model to handle it and to decide for the user what their goals were but I got too caught up in that and not the layout of the website, so I had to scale the idea down a little. However, my thought processes are recorded in the "notes.txt" as well as every step documented within the "drafts" folder, so I will definitely continue to pursue those ideas.