

I. General Description of Project

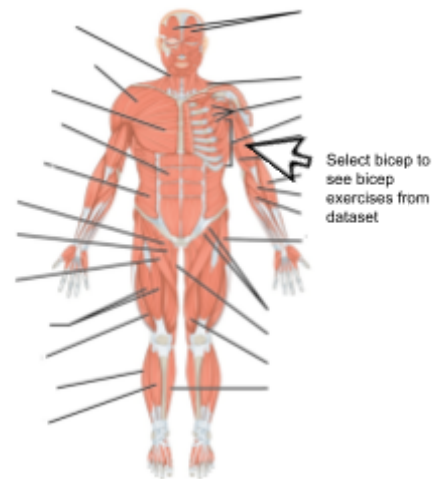
My Project, Flex, will provide exercises for specific targeted muscle groups using the existing [exercises.csv](#) dataset. You can use text to type a muscle into a search bar, or interact with a visual of the human muscular system. If you select a muscle on the image, exercise options will be provided for that specific muscle. Users have the option to filter results by difficulty level and equipment requirements (if any). Users can add exercises to their own “My Exercise Plan” page. This page can be viewed, printed, or exported as a pdf.

This project will be useful to those who are new to exercising or need ideas to develop fitness plans based on their particular preferences and goals. There are two types of search options (visual and text) to allow for learning preference. Many users may not have access to equipment, so this filter option will help them create workouts based on what they have available. People can develop a plan targeting as many muscles as they would like. This plan can be printed or exported for later use.

The application will be developed using a web-based graphical user interface, likely Flask. This will allow for flexibility when integrating interactive images.

II. Task Vignette (user activity “flow”)

- Search for exercises by muscle
 - The user will launch the web application and will see a prompt to enter a specific muscle. For example, they could type, “biceps” and click the button, “search for exercises.” Ideally, typing will prompt search options so people do not have to worry about caps/spelling/etc.)
- Interact with human muscular visual to search for exercises
 - The user will launch the web application and also see a visual representation of the human muscular system. Instead of typing, users can click on a specific muscle on the visual representation (ex. bicep muscle).
- Filter your search results
 - On the search results page, there will be a filter bar to filter search results via dropdown. You can select specific filters for difficulty level and to find exercises with no equipment needed.
- Add to Workout plan
 - Next to each exercise on the search results page, there will be a button labeled “Add to Plan,” which will temporarily store the exercise in the “My Workout Plan” page.



- Return to Home Page
 - On the “Search Results” page, there will be a button called “Return to Home.” Clicking this will bring you back to the page with a prompt to enter a particular muscle or interact with the muscular image.
 - Returning home DOES NOT clear “My Workout Plan”
- View / Export workout plan
 - On the home page, there is a button labeled, “View Your Workout Plan,” that brings you to a page with a summary table of all workouts saved to “My Workout Plan.” Each row has a button on the far right with the option to delete the exercise from the plan.
 - There are buttons at the top/bottom to “Print” or “Export as PDF.”

Example of “My Workout Plan”:

| My Workout Plan | | | | |
|-----------------|---------------------------------|--------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Muscle | Exercise Name | Difficulty | Equipment Needed | Instructions |
| Abdominals | All Fours Quad Stretch | Intermediate | Body only | "Lie on the floor with the knees bent and the feet on the floor around 18-24 inches apart. Your arms should be extended by your side. This will be your starting position.", "Crunch over your torso forward and up about 3-4 inches to the right side and touch your right heel as you hold the contraction for a second. Exhale while performing this movement.", "Now go back slowly to the starting position as you inhale.", "Now crunch over your torso forward and up around 3-4 inches to the left side and touch your left heel as you hold the contraction for a second. Exhale while performing this movement and then go back to the starting position as you inhale. Now that both heels have been touched, that is considered 1 repetition.", "Continue alternating sides in this manner until all prescribed repetitions are done." |
| Biceps | Alternate Incline Dumbbell Curl | Beginner | Dumbbell | "Sit down on an incline bench with a dumbbell in each hand being held at arms length. Tip: Keep the elbows close to the torso. This will be your starting position.", "While holding the upper arm stationary, curl the right weight forward while contracting the biceps as you breathe out. As you do so, rotate the hand so that the palm is facing up. Continue the movement until your biceps is fully contracted and the dumbbells are at shoulder |

| | | | | |
|--|--|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | <p>level. Hold the contracted position for a second as you squeeze the biceps. Tip: Only the forearms should move.", "Slowly begin to bring the dumbbell back to starting position as your breathe in.", "Repeat the movement with the left hand. This equals one repetition.", "Continue alternating in this manner for the recommended amount of repetitions."</p> |
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III. Technical “flow”

- Clickable areas on the interactive image must be defined to correspond with particular muscles in the primaryMuscles column.
- After searching a muscle or selecting a muscle on the interactive image, the CSV will be read and exercises will be filtered by the particular muscle (primaryMuscles) using Pandas. A search results page for that muscle will be displayed in rows including muscle (primaryMuscles), exercise name (name), difficulty level (level), equipment needed (equipment), and instructions for the exercise (instructions).
- On the search results page, there are options to filter with dropdowns. After dropdowns are selected, click the filter button. This will read all workouts on the search results page and produce a new list of search results particular to your filters.
 - Difficulty level: beginner, intermediate, or expert.
 - Equipment: body only (only produces exercises with mention of “body only” in equipment), or equipment needed (produces all other exercises).
- Clicking the “Add to Plan” button will temporarily store the exercise in the “My Workout Plan” page of the user’s current session. This will require a dictionary of My Workout Plan.
- “Return to Home” button needs to be linked to produce the original homepage with search functions WITHOUT clearing “My Workout Plan.”
- “My Workout Plan” button must be linked to “My Workout Plan” page and produce a table with a saved dictionary. “Delete” button must delete an exercise from the dictionary and remove it from the “My Workout Plan” page. This will produce a new table without the deleted exercise.

IV. Self assessment

- The biggest change from the sketch was adding the options to filter and save exercises to “My Workout Plan.” This better allows people to develop full plans, compile them, and use them later. The filter options are also new, which allows for more personalization when developing workout plans.
- I am a little nervous about the number of options and pages that need to be developed. Also, I have no experience setting up a filtering process by selecting parts of an image. I would be curious to hear your thoughts about whether all of these functions are possible and whether anything likely needs to be dropped.