PROJECT 2: REPORT

FITNESS APPLICATION

SEG 3125 - ANALYSIS & DESIGN USER INTERFACES

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School of Engineering and Computer Science

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For enhanced readability, this report will be separated into exactly the ordered sections required in the outline.

General information

This report, named *Project 2: Report - Fitness Application*, was written by Jayden Lachhman, who has student number 8791694.

The prior experience in JavaScript I had consisted of one front-end web application for the project preceding this one of the same course where I designed and implemented a web page for a barbershop. I understood basic HTML5 and CSS3 syntax but having not applied those skills to create a refined front-end, the first considerable exposure I had to JavaScript was in the cultivation of that project. To prepare for this project I watched the professor's lecture recordings, read through some of the professor's suggested readings, downloaded and explored myriad fitness apps to familiarize myself with popular layouts, and explored an array of tutorials including but not limited to: The Net Ninja's Full React Tutorial series (recommended by the professor), A Designer Who Codes' YouTube channel, AJ&Smart's YouTube Figma tutorials, and arbitrary others for solutions to specific issues.

The site I have chosen to implement is a fitness application. The current title is *FitSmart* but that's likely to change in the future if I continue to develop the site. The fitness application was conceived to be an all-in-one platform that implements deep-learning concepts to reduce how inundated most beginners feel due to the amount of information available in the world. But at the same time, I wanted this web application to more closely reflect a health-centered dashboard that users viewed as often as they did their phone's own main home screen, and thus keep them exposed to a structured environment where they could edit modify calendars, track their progress,, and develop a practical understanding of nutrition, exercise, and mindfulness.

I primarily studied the exercise applications MYFITNESSPAL, CENTR, and STRAVA and the general design patterns of modern dashboards to generate the layout and ideal functionality of this application.

First iteration (mockups & personas)

The following images detail the original mockups submitted to Peergrade during the first stage of the project:

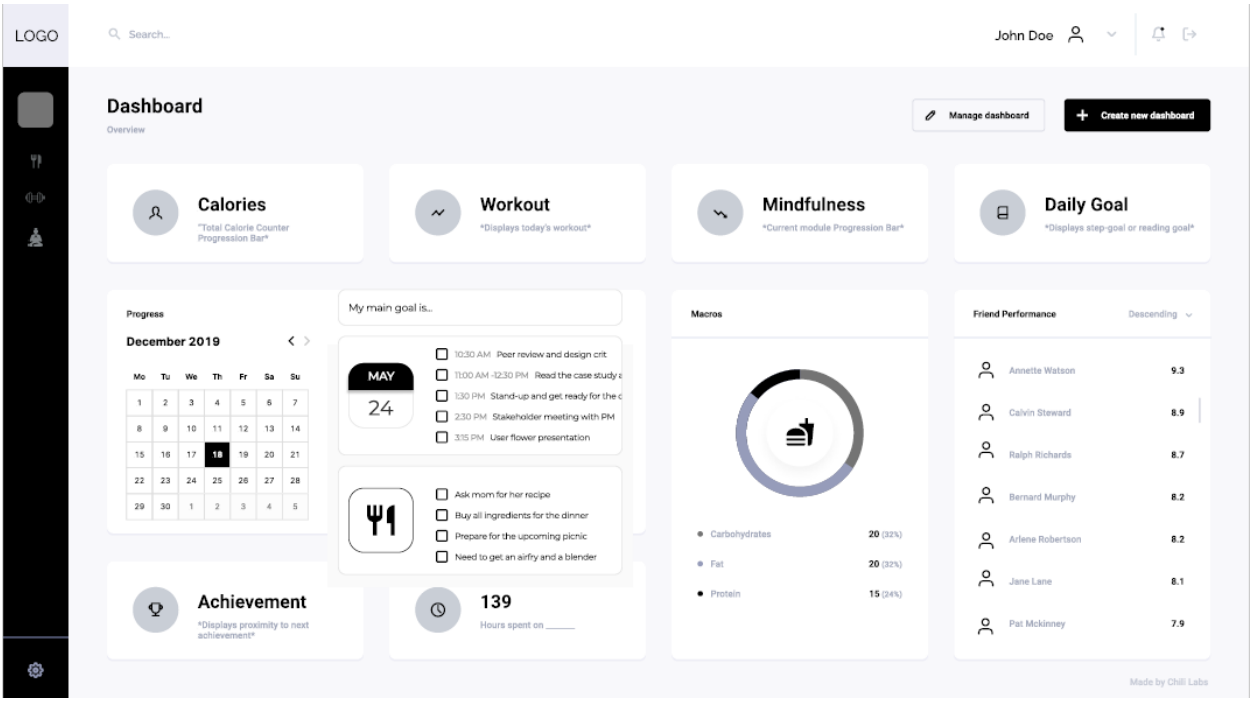

Figure 1: Dashboard

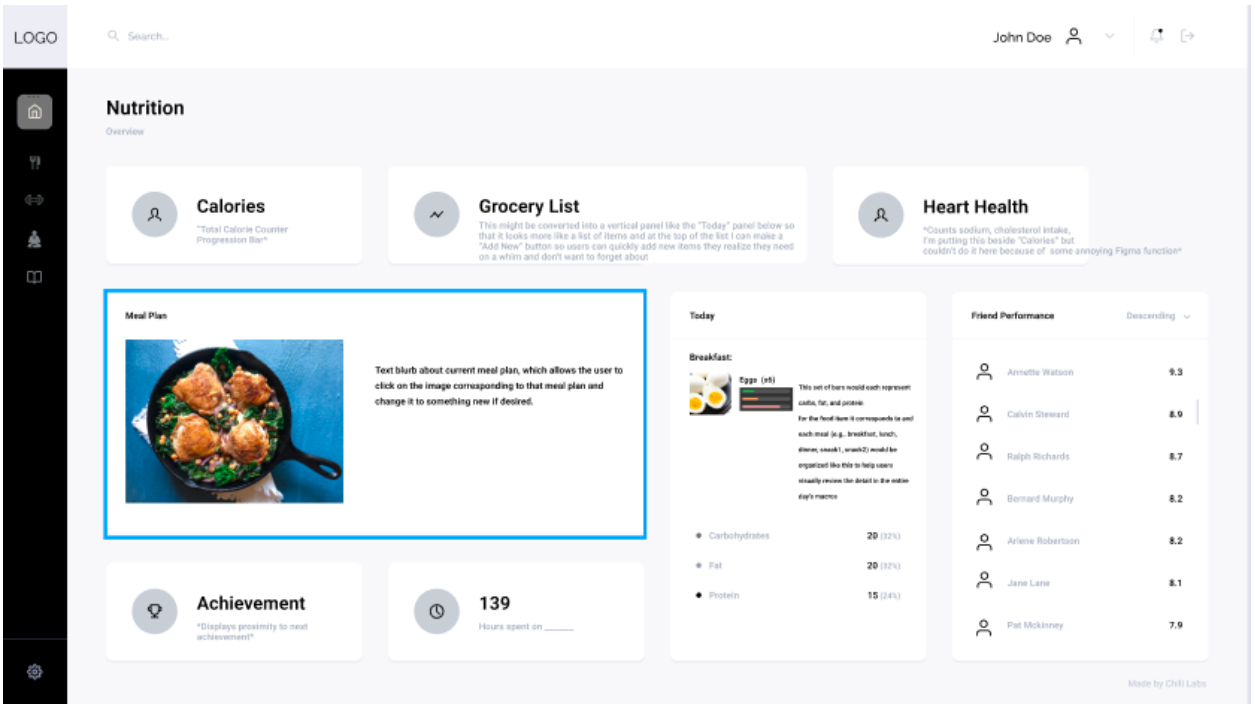

Figure 2: Nutrition

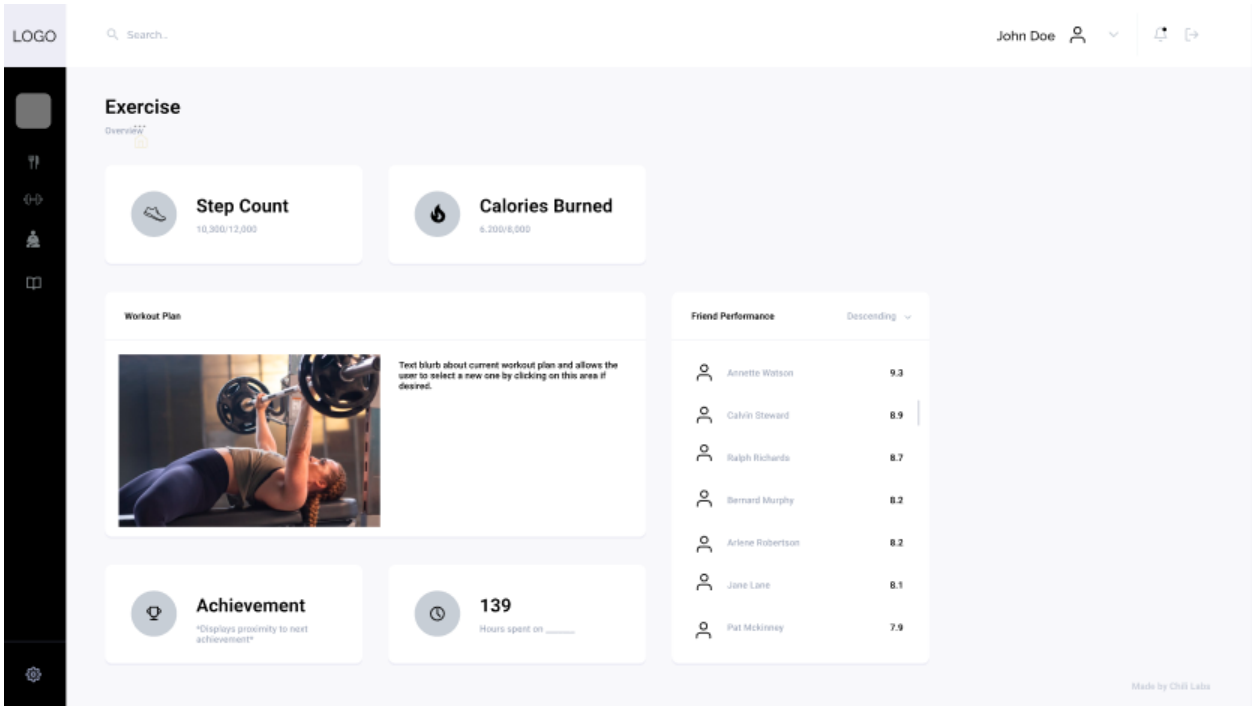

Figure 3: Exercise

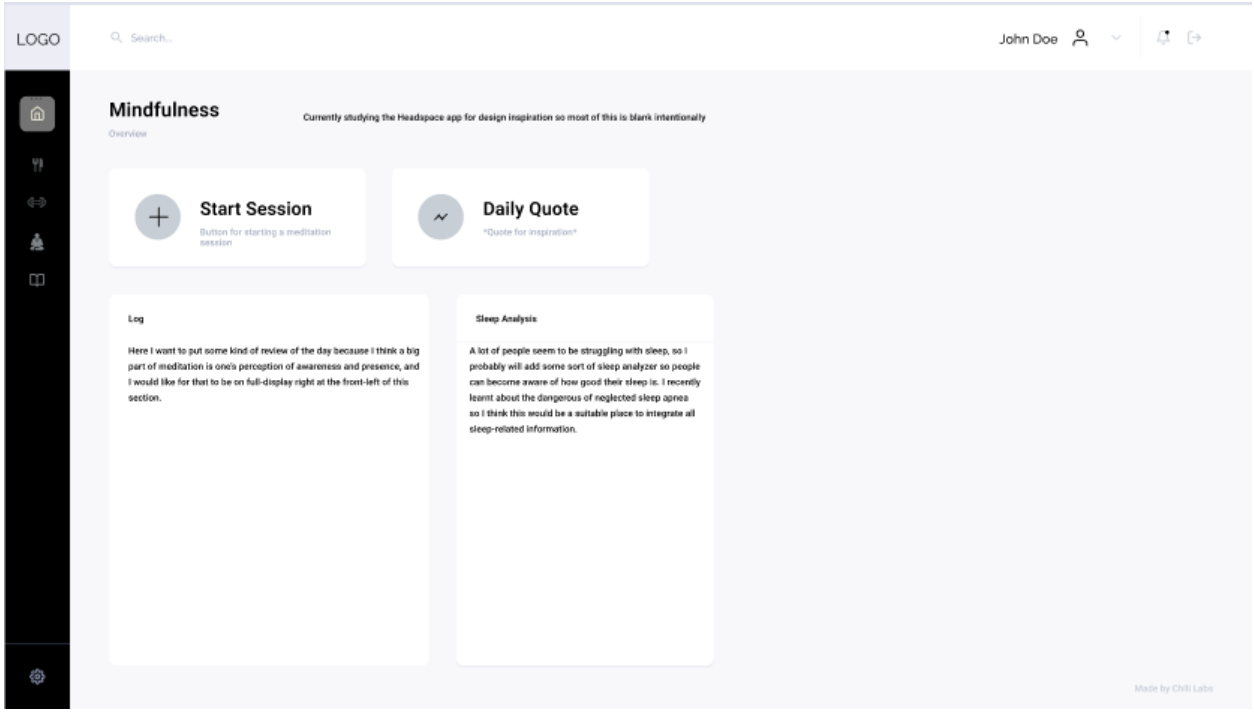

Figure 4: Mindfulness

o

Figure 5: Learning

It should be noted that although these images represent the submission to Peergrade, only the first image seemed to be uploaded. After downloading the enter file as a PDF with each of the pages present in Figma, the upload only showed the main dashboard, a page of a large house icon used to represent the home page, and a book icon used to represent the learning section. I was still able to get useful feedback from other students considering most of the pages have an identical layout and structure to the home page uploaded, but these are the mockups in their totality should they be needed.

One of the personas offered by a student that I chose to take into account was:

Name: Alan
Age: 18 Occupation: Student
Physical Limitation: He fractured his leg last year
He hopes to exercise in his spare time and recover from his leg injury.
You can have a section for user to plan their tasks logically

And another persona offered by another student was:

- Name : Lee
- 3 intrinsic characteristics : Man, middle-aged, anglophone
- Relation to the technology and relation to the domain : Lee is an average computer user. He is not very proficient with computers but he can still manage things out. Lee has never used any fitness applications before and he has therefore never used your application before.
- Given the fact that he has no prior experience with fitness applications, Lee feels a little bit lost ; he does not understand the terms that are being employed and he is not able to compare himself to the average user. He would therefore like to have access to a page in the application that would expose to him the achievements of the average users of this application. For example, in this page, there would be a functionality showing the average number of hours spent on workout (average of all the users). Lee will therefore be able to compare himself to the average user. In order to fulfill his demand, you could implement a page with the analyzed and/or summarized results using the "Analyze" interactive process.

These personas helped identify two user experiences that would help each user feel more enthusiastic about the suite of tools that the website can offer. In the future, I think implementing a task management section for users would be useful, though for rehabilitation some sort of medical consultation would be needed. The other persona inspired an essential implementation, considering that most people feel proud of their progress, giving the user a clear visual/numerical representation of their progress and the average progress of the user’s who opt-in for data tracking might help someone specify the goals they should be meeting.

Another recurring piece of feedback that I received was about cognitive load. This feedback was present before the formal heuristic evaluation of the high-fidelity implementation, and seemed unanimous across the reviews. The dashboard was overwhelming for the users, so in the future

I need to work on reducing how confused and overwhelmed the main entry point and likely the most frequented page seems.

Second iteration (JavaScript draft & Heuristic Evaluation)

For the second iteration, because I received mostly positive feedback for the mockups regarding most of the heuristics outlined in class, I thought it might be more productive to implement a functionality that served to represent the core of where each of the personas felt unfulfilled by the application,, which was a task management feature. Tracking progress should be an essential feature of any fitness application, and referring to all three personas, the issues centered around having no indication of personal goal completion. So without a task management feature present in the original mockup, I made a task manager application that I wanted feedback on.

Link to GitHub Pages Preliminary version: https://jlachhman.github.io/seg3125-project2/
Link to GitHub Repository: https://github.com/JLachhman/seg3125-project2-fitnessapp

After reviewing the feedback received from other students, some of the positive feedback mostly reflected aesthetics, cognitive load, language familiarity, consistency, and simplicity. But some of the main issues in the application regarded subtle but important forms of functionality, such as error prevention and recovery. Some mentioned improved validation for the form, and others wanted to see the integration of icons that felt more intuitive. Integrating these ideas into the website would help because it makes clear that core features need to feel inviting to the user rather than potentially apprehensive. I thought that I created a fairly intuitive application but there is always room for improvement so I will try to implement these ideas into the final version.

Code for final version

Link to GitHub Pages Final Version: https://jlachhman.github.io/seg3125-project2-final/
Link to GitHub Repository: https://github.com/JLachhman/seg3125-project2-final

Interactive processes

The five interactive processes contained in the website are:

1. Follow Instructions
    a. This module has yet to be fully integrated into the application. To achieve this in the context of fitness means creating a module where the exercise routines and videos corresponding to how to do them are stored, but this is the intent of the application so it will be implemented as I continue to work on the application.
2. Absorb Information
    a. The main idea of this application is to present the user with information that can be integrated into their exercise regimen. That information will be based on their personal accomplishments that are available to see in the dashboard, such as the number of steps they have taken that day and their step goal.

3. Explore (divergent/convergent)
    a. The top of the dashboard represents some clickable cards that will link to more detailed information. For example, the “Tip” module shares summarized facts that would refresh frequently that the user can click to learn more about. In this case, the tip says “Body = Brain” which is meant to arouse interest in what exactly that means, and then when the user clicks on it, it would take them to a short article about exercise and its relation to cognitive performance.
4. Analyze Results
    a. One of the students suggested that I implement a results feature where users can see how they have progressed over time. This feature still requires implementation as the complexity of producing a visual representation that can be filtered for different periods (e.g., 6-months, 3-months, 30-days, etc) should be well thought out.
5. Plan/Organize
    a. The plan/organize interactive process is a direct implication of the task management tool. If users have the ability to enter tasks that they plan to complete, and organize them by the completion date for each, then it serves that each user can create their own fitness objectives.

Your own heuristics evaluation of your own site

1. Consistency
    a. Colors/Font - All of the colors and fonts are the same. I chose a gamut of minimalist colors to help with users who might suffer from visual impairments containing black, white, and gray. Though somewhat monotonous, I think this color scheme works well and matches the sans-serif bold fonts for easy reading.
    b. Icons/Buttons - There are icons for each of the navigation items in the sidebar and I think each one is fairly indicative of what they represent. One of the original icon choices for the “wellness” tab was a person sitting in a meditative position to which one of the students responded was “confusing”. I changed it to hopefully improve that.
2. Familiar Language and Metaphors
    a. Sentence Style - Mix of imperative and declarative language might make users feel like the website is not encouraging. I will try to implement language that feels familiar and consistent with the self-development pretense the website was inspired from.
    b. No metaphors.
3. Simple Aesthetic, Functional Design
    a. Simple Aesthetic - I chose a monotonous color gamut as explained previously, and I think the overall design helps users understand what the three main panels contain and do. The aesthetic is a collection of rectangular boxes where each represents a module to click on and learn more about, but I should implement some graphical components to make the website feel more lively as it would help users deepen their analytical capacity as they study their progress.

    b. Gestalt Laws - Attention is good, as the website is simple enough that users are not inundated by modules with foreign content, and I think there is enough focus drawn to the elements on the main page because of the shadows one each box and the easy-to-read content they store.
    c. Screen-real-estate - Once I incorporate those graphical components, as long as the information that can be drawn from them is easily explored, I think the screen-real-estate will be achieved. Thus far it may seem bland, so maybe another addition would be to provide layout designs of a dashboard for the user to choose from and then they can edit it to suit their needs like home screen widgets on a smartphone.
4. Freedom and Control
    a. Control - The sidebar can be closed and opened after clicking the three horizontal bars icon representing the menu in the corner, this allows for users to open the sidebar when they want to navigate somewhere and close it when they want no interruptions when focusing on a dedicated tab. I think the website achieves this well.
    b. Navigation - The navigation paths are clearly listed in the sidebar with the current page highlighted in a soft gray that's consistent with the color theme of the website.
    c. Freedom - The freedom this app creates is tied to its modularity; that the user can create the fitness goals they feel is best for them. However, I would say that without the implementation of pages dedicated to convergent linear progression, such as recipes that users can use to cook or a list of exercises to explore the benefits of, freedom is practically limited. The current implementation of the app does not force the user to do something in particular, but that might be useful for those who take their fitness journey seriously so I will need to contemplate that.
5. Flexibility and Efficiency of Use
    a. Entry Points - The main entry point is the dashboard, and because the dashboard will have the functionality to be designed according to what the user wants to see as soon as they enter the app, it essentially allows for the entry point to be modular/personalizable. I think this was a constructive design choice.
    b. Efficiency - As soon as users load into the dashboard, the information most pertinent to them is clearly distinguished. I think this helps users feel as if they are streamlining the access to processes and modules they care the most about, so this would not only be efficient but exactly as efficient as a user would want.
6. Recognition over Recall
    a. Knowledge Organization - The information on the dashboard should be clear, simple, and comprehensive, and I think I have achieved that. Categorically, the original mockup separated the four main cards at the top of the dashboard according to the most pertinent features of the other pages so as to reduce how many clicks it requires for users to get what they want. The other pages will therefore have more specific information in them, as described in the mockups earlier where they are intended to be used for greater learning, depth, and niche features pertaining to the page they belong to.

    b. Menus - The only menu is the sidebar, and with as many pages as the average user has fingers on one hand, I think that's manageable without compromising on how distinct and necessary each path is.
7. Clear Status
    a. Button/Function Absence - Some of the students mentioned that this web application includes information that might be foreign to fitness novices, and thus there should be buttons that show users more information corresponding to the component they are attached to. I think that's a good idea, and in addition it would be helpful to add some basic performance functionalities introducing fitness novices to average expectations. At least then the users have a rough approximation of how fit they are, so I will plan that in the future as well.
    b. Status Indicators - The status indicators in this web application take the form of progression, but other than numbers and graphs, it might be useful to implement the progress bars subtly underneath each main dashboard module so users have a visual representation of how they are doing. The macros counter seemed to get positive responses as well, but maybe I could implement a colored state to indicate to users the viability of their diet (e.g., red for poor nutrition habits, green for healthy choices etc).
8. Error Prevention
    a. Error Prevention - The main error preventative measures that have been recommended to me by the other students pertain to data constraints. After reviewing the website, I definitely agree, The task manager application does not validate fields for dates and times, and they would need to in order for those tasks to synchronize with a calendar API in the future and be of some use rather than just the log of tasks one wants to complete which is a more accurate depiction of what it is now. Also, each module is going to have a fair amount of information to support users, but I want to organize user access to that information so using data constraints, checkboxes for information they are interested in learning about to filter a database, and other options such as that will help reduce the possibility of errors. Another example would be adding more modules to the main page than the main page allows for, because otherwise users might create a dashboard that's elaborate and cumbersome and that may not be best for them so I would want to prevent or at least indicate those states.
9. Error Recovery
    a. Recovery - There is no error recovery implemented into the website. However, the errors I wanted to focus on recovering from were session-ending errors. So if a user wanted to click a page in the sidebar to navigate to, I would not want there to be a "Page Not Found" error and with some routing implementations I think that is achievable. The error recovery heuristic seems like there are a myriad number of interdisciplinary fields of understanding that I would need to explore to learn how to do this effectively, so in the future I will.
10. Help
    a. Search - Although I did include a search bar, the professor did mention that this search bar is only useful if the algorithms implementing it yield productive results.

I thought the addition of a search bar would be helpful to help users access a database of workout and nutrition programs but I might have to review how useful that would be in practice.

b. FAQ - There is no FAQ page and having not thought about including one before developing the mockups and first high-fidelity implementation, an FAQ page seems like it would be crucial to this type of application. This is not an application that connects users to products where purchasing those products might have some logistical constraints with regard to shipping and returns, which is what I thought FAQ's were best for. But I can always research more the questions people might have about a website such as this and develop an FAQ section somewhere for reference.

Appendix 1

PERSONA 1:
Name: Roger
Age: 48
Language: English
Occupation: Free-Lance/Independent Contractor
Physical Limitations: None
Education: High School Diploma
Technological Experience: Average
Experience with Application: Some
Emotional Response: Unsatisfied
Motivation: Want to explore the services on the website to learn more about them so that he can figure out which one will serve his purpose best.
GOAL: Absorb information about the services that may not be present in the panel given their specific purposes or use case. Often the information in a service panel needs to be succinct, but in the case that the customer does not feel satisfied with the description provided, another button that displays more information (like a card interaction) about the service should they need it would be quite useful.

PERSONA 2:
Name: Maria
Age: 60
Language: Spanish
Occupation: None
Physical Limitations: Somewhat brittle
Technological Experience: None
Experience with Application: None
Emotional Response: Shy
Motivation: Maria loves to bake, but wanting to do so from home would make her more comfortable.
GOAL: Maria wants to bake one of the cakes featured on the website but does not want to travel to the store to do so. If the recipes/instructions for the featured cakes were available to download online, she could do so and it would fulfill the interactive processes of following instructions and absorbing information.

PERSONA

Name: Josh
Age: 19
Language: English
Occupation: Student
Physical Limitations: None
Technological Experience: Average

Experience with Application: None
Emotional Response: Discouraged
Motivation: Josh wants to bake for himself and needs resources to make what he wants.

GOAL: Josh wants to bake for himself but does not feel he will be able to make the baked goods as nicely as the website's images showcase. If he could click into an item in the "PRODUCTS" section and see the recipe for himself, and what the desired good needs to look like at every stage, he might feel more encouraged to practice baking. This would help fulfill the "Following Instructions" and "Absorbing Information" interactive processes.

Appendix 2 - Heuristic evaluations

FIRST WEBSITE EVALUATIONS:

Heuristic 3: Simple, Aesthetic, Functional Design
Aesthetic - Simple. Comprehensible. Does not overcomplicate what the app intends to do and how it is done by overwhelming the user with a busy aesthetic.
Screen-real-estate - Used well, as I said before, the design of the website ensures that users have exactly the information they need without cognitively overloading them and they can use the cards for further reading if desired.

Heuristic 4: Freedom and Control
Control - Because the website is free-scrolling with a static navigation bar, it lends control to the user to go where they want without even the need to access information through pagination/breadcrumb tools.
Linear Progression - The app is for calculating SWR, so users are encouraged to follow a linear progression. But if they have entered the wrong information, it is easily fixable, so I think this is good.

SECOND WEBSITE EVALUATIONS:

Heuristic 3: Simple, Aesthetic, Functional Design
Simplicity - No confusion, the aesthetic is consistent and easy to navigate as there is no text on images and all text areas and images are separated by panels to help scan over the website easily.
Font Size - The font size could be reduced in the navigation bar as I believe it can be reduced to increase the negative space between each page but still maintain readability to accommodate users with poor eyesight.

Heuristic 10: Help
FAQ - This would be useful, especially for websites that require so much desiderata like an eLearning platform because students might have questions about the course and will need to know where to go to have them addressed.
Search - Search bar would need effective implementation because most classes would be discoverable through the categories you have available to reduce how much the user has to type to find what they want.

THIRD WEBSITE EVALUATIONS:

Heuristic 1: Consistency
AESTHETIC INTERNAL:
Colour - Blue, Yellow and White colours are used somewhat well. I like the choice of colours, but I think they can be integrated more consistently so that each separate panel/header has the same format.

Font - Simple to read and used throughout except for in the different lifts.
FUNCTIONAL EXTERNAL:
Icons - Not many icons but using the web application, I do not think they are needed.
Layout - Scrolling layout works well for this app because it encourages users to progress through the calculation.

Heuristic 8: Error Prevention
Constraints - The "Enter your weight" box at the beginning of the website requires a numerical input, which is great because I attempted to input letters and it would not let me.
Data Constraints - Maybe there should be text area constraints at the bottom of the page as there seems to be no character limit, and users might write paragraphs that developers/users may not want to allow.