
Musclepedia
Muscle Insights Made Simple

Team

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Goals

Musclepedias aim is to develop an innovative web application that provides users with a comprehensive model of the human muscular system. Users can select specific muscles in need of recovery, and the app will offer detailed insights on how to aid their rehabilitation through stretching and treatment techniques. This app bridges the gap between fitness enthusiasts and medical guidance, offering a user-friendly interface for personalized muscle care. By leveraging 3D modeling and expert knowledge, it empowers users to proactively manage their muscular health, prevent injuries, and optimize their recovery routines. This resourceful tool will be a valuable addition to anyone seeking efficient and tailored muscle recovery solutions.

Intellectual Merits

- **Integration of 3D Modeling:** Our product allows users to interact with a 3D model on our platform. This 3D model of the human body can be easily interacted with and is seamlessly integrated with our web application.
- **Personalized Muscle Care:** This app provides users with a catered experience and is a one stop shop for muscle fatigue and injury. Our application guides users to proper solutions and recovery for their ailments.
- **User Friendly:** The app utilizes 3D modeling to visually represent the human muscular system, making it easier for users to understand and engage with the content. The app provides detailed yet concise insights into muscle care and rehabilitation techniques, presenting information in a clear and understandable manner.

Broader Impacts

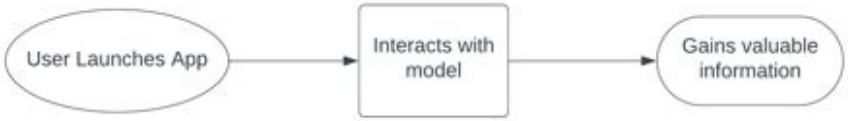
- **Enhanced Health and Wellness:** Musclepedia has the potential to significantly improve public health by empowering individuals to proactively manage their muscular health. By promoting preventive measures and personalized rehabilitation techniques, the app can help reduce the incidence of muscular injuries and improve overall well-being.
- **Accessible Healthcare:** The accessibility of Musclepedia as a web application ensures that valuable information about muscle care and recovery techniques is readily available to a wide range of users. This accessibility can bridge gaps in healthcare access, particularly for individuals who may not have easy access to medical professionals or specialized resources.
- **Empowerment Through Knowledge:** Musclepedia empowers users with valuable knowledge about their own bodies, enabling them to make informed decisions about their health and fitness routines. By educating users about proper muscle care and rehabilitation techniques, the app promotes self-efficacy and autonomy in managing muscular health.
- **Support for Fitness Enthusiasts and Athletes:** The tailored muscle recovery solutions provided by Musclepedia can benefit fitness enthusiasts, athletes, and sports professionals alike. By optimizing recovery routines and preventing injuries, the app supports individuals in achieving their fitness goals and maximizing performance potential.

Implementation

- Musclepedia will allow a user to login or register if they are not registered already.
- From the main screen, a user will be able to interact with a 3D model of the human muscular system and select an area where they are feeling soreness or pain.
- After selecting a pain point, the user will be presented with various methods to assist in the recovery of the muscle.

Design Specifications

Design D0



Design D1

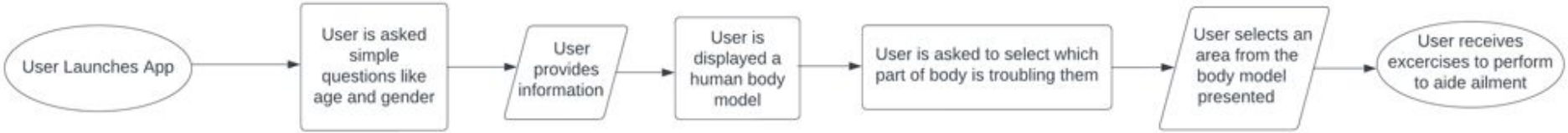
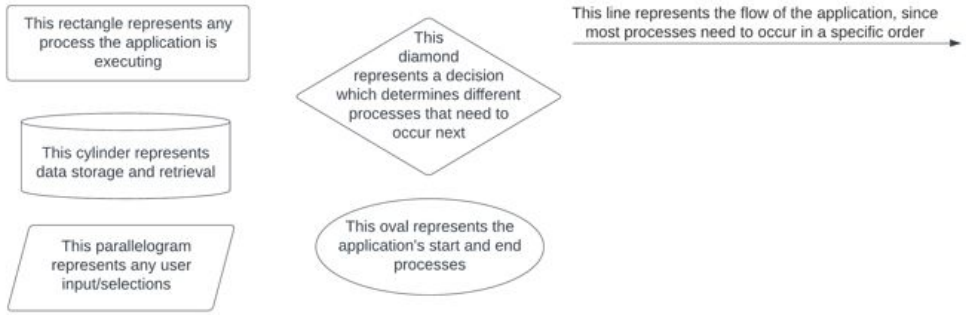
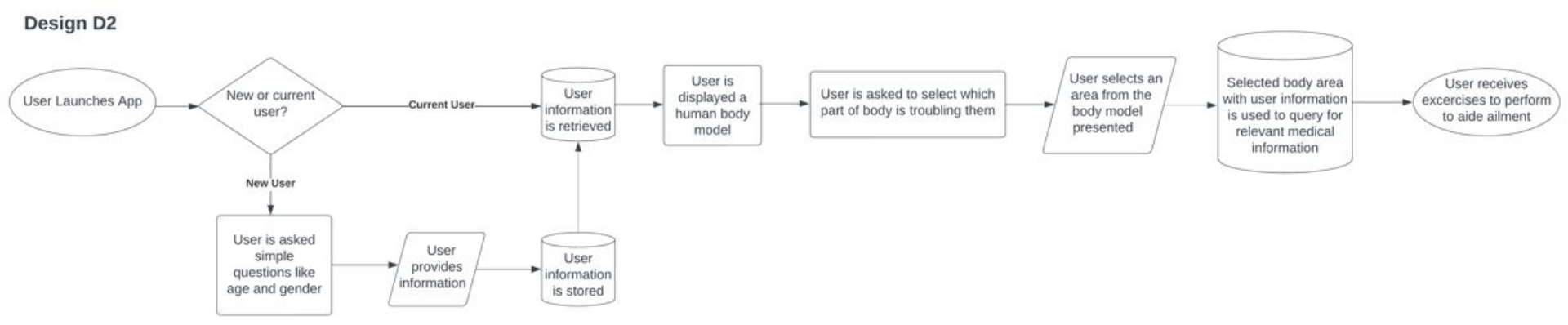
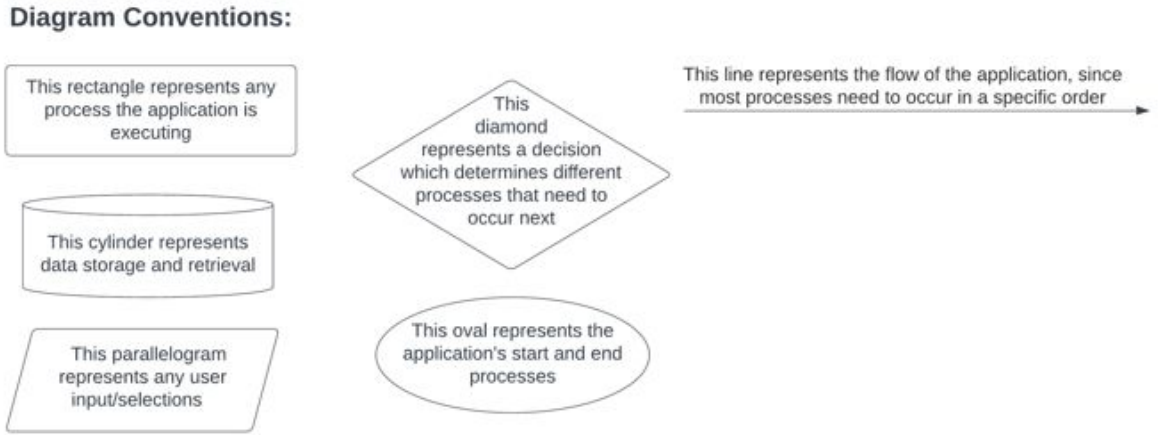


Diagram Conventions:



Design Specifications





Technologies

Our backend utilizes the Google Firebase cloud solution

- Authentication
- Hosting
- Database

Frontend utilizes Angular v17.1.0 and the Angular Material Library

Milestones

February 22	UI/UX Design Finalized
March 1	Firebase Database/Authentication Modules Integrated
March 14	Interactive 3D Model Implemented
March 22	Full Web Application Developed
April 1	Testing and Debugging Conducted
April 9	CEAS Expo

Results

Our project team has taken the initial steps of establishing a development stack for this project, familiarizing ourselves with the new languages and frameworks chosen, and initializing the project repository to begin with development. We're in the early stages of the design phase to create mock web pages that will drive our frontend UI/UX development. To complete our demo, our next steps will be to integrate user authentication with Firebase, develop the 3D model and web application's content, and conduct tests and reviews on the final product.

Challenges

- **Choosing a Development Stack:** Due to each of our team member's unique backgrounds and skill sets, it was difficult to decide on a development stack for this project that would both align with the project requirements and team expertise. This issue was resolved through reviewing and narrowing the trending stacks used in industry which gave us the scalability and performance we needed within our budget. The stack we chose (Angular and Firebase) was also familiar enough for some of our members while being approachable and an upskilling opportunity for the rest of the team.

- **Creating a Test Plan Before Development:** The test-driven development approach to this project was a new experience for all of our team members since each of our co-op experiences had us implementing tests alongside product development. We received guidance from our Project Advisor in transitioning our mindset to this new framework and came up with a test plan to guide our future development tasks.