

Final Project Topic Approval - Exercise Tracker

This application enables users to record and track their activities and monitor their progress towards their daily calorie goal. Users can set their own goals and complete multiple sessions of various types of exercise throughout the day. The application will calculate the statistics and provide a summary of the user's progress. It also allows users to view their session history and provides a backup function to store data in the cloud database.

Important Covered Topics

- ♦ External APIs: OpenWeather API, Zen Quotes API, Calories Burned API, and AWS DynamoDB API
- ♦ Camera
- ♦ Geolocation
- ♦ Device Sensor: Gyroscope

Outline of Features

- ♦ OpenWeather API: weather information and current city name
- ♦ Zen Quotes API: daily motivational quotes
- ♦ Calories Burned API: calculation of calories associated with current activity
- ♦ AWS DynamoDB API: backup and restore operation with cloud database
- ♦ Camera: record image for each session
- ♦ Geolocation: detecting the current location for weather info and session records
- ♦ Gyroscope: detecting shaking activity from user
- ♦ Local Storage: storing the session data and images
- ♦ Toasted Messages: showing important information or errors
- ♦ React Native API: View, Text, Image, InputText, ScrollView, Pressable, React Navigation... etc.

Anticipated Challenges and Solutions

- ♦ Shake detection:

The shake detection function may not be reliable or intuitive. To address this, I plan to adjust the threshold for shake detection to minimize false positives. I will also disable the shake detection temporarily to avoid double detection that may cause unintended session starts and ends.

- ♦ Device data storage and AWS backup:

In the assignment, I stored images on local storage, but not text data. I believe it's possible, but I need more time to experiment with it. Additionally, I need to design the database format on the AWS side to ensure smooth data I/O functionality.

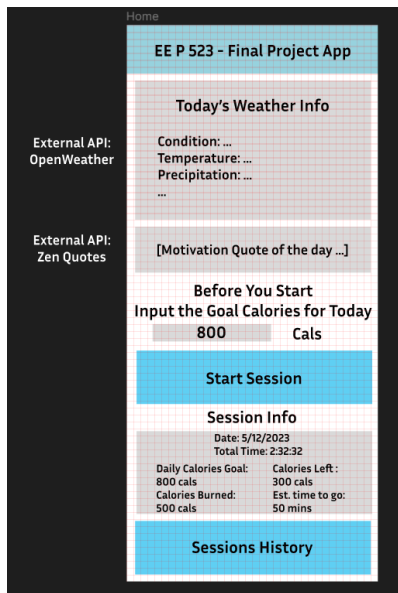
- ♦ Calories Burned API:

The Calories Burned API may not cover many sports. To address this, I plan to identify the sports covered by the API and include as many as possible. I can also add a default value for sports that are covered by the API, even though it may not be accurate. Lastly, I can explore other APIs to obtain the necessary calories burned data for this project.

Figma Design:

<https://www.figma.com/file/ohhIbaX0soSQKjQmQpeVot/Final-Project?type=design&node-id=0%3A1&t=j6USMDekaRnm1LZ-1>

UI/UX – Home



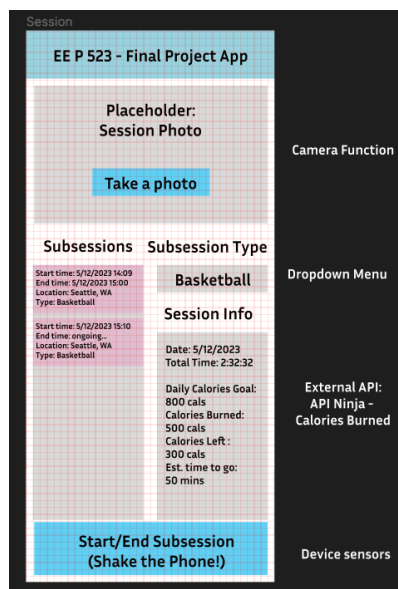
The home page of the app.

On the top section, it shows the real-time weather information of the current location and motivational quote of the day.

The user can the goal calories for today's session in the middle text box, and click the **Start Session** button to go to session page.

On the bottom section, there is today's session info and a **Sessions History** button which lead to the history page.

UI/UX – Session



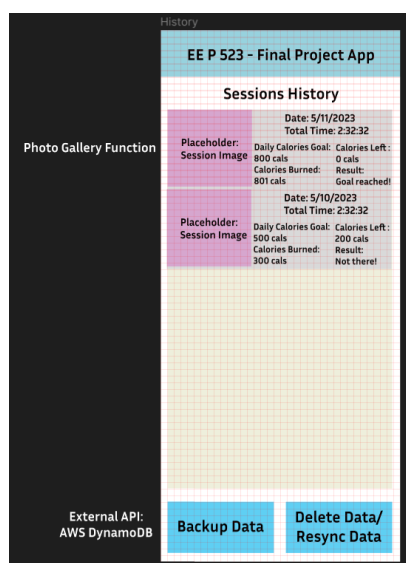
This page is for today's session.

On the top section, the user can choose to take a photo for recording purpose.

On the left side, the user can see the subsession of today. The subsessions are fraction of today's exercises that record start/end times, location, and exercise type. On the right side, the user can set the subsession type for current subsession. It also displays the info of today's session.

On the bottom section, there is a button to start and end subsessions. The app also supports shaking detection to trigger this start and end operation.

UI/UX – History



This page is for sessions history.

All the past sessions will be shown on this page. The user can scroll to check them out. Each record contains a photo and a session summary for the day.

On the bottom section, there are two buttons to let the user to backup, delete, and restore data to or from the cloud. It uses AWS DynamoDB as the backup database.