# Proposal Document: Gym Logging Website

**Introduction**

The goal of this project is to create a gym logging website that allows users to track their workouts, monitor progress, and receive personalized insights on their fitness journey. The website will include features for logging sessions, displaying statistics, and managing account details. It aims to provide a user-friendly interface with interactive data visualizations and personalized recommendations to help users improve their fitness routines.

**Aims and Objectives**

**Aims:**

* To create a seamless experience for users to log their exercise sessions, monitor their progress, and gain insights into their fitness activities.
* To provide a centralized platform for users to track various workout metrics, including sets, reps, weight lifted, and exercise types.
* To allow users to track their overall fitness journey with personalized suggestions and progress analysis.

**Objectives:**

* **Session Log:** Provide a form for logging each exercise session with details such as sets, reps, and weight lifted.
* **Stats Page:** Display various fitness metrics and visualizations to help users understand their progress.
* **Account Page:** Allow users to manage personal information, including tracking their BMI, weight, and goals.

**Features and Plan**

**3.1 Session Log Form**

This feature allows users to log their workout sessions. Each session includes multiple exercises, and users can specify details such as the number of sets, reps, and the weight lifted. The form will also include an optional field for any additional weight used (e.g., belt weight or dumbbells).

**Components:**

* **Exercise Dropdown:** A dropdown list of predefined exercises that users can select for the session.
* **Sets, Reps:** Fields for users to specify the number of sets and repetitions for each exercise.
* **Weight:** Field for users to input the weight lifted for each set.
* **Additional Weight (Optional):** An optional field for specifying any additional weight used, such as for resistance or weight belts.

**Plan:**

* Create a database to store sessions and exercise data.
* Build a user-friendly form interface using a frontend framework (e.g., React or Flask templates).
* Ensure that each exercise session is timestamped and saved in the user's account.

**3.2 Stats Page**

The Stats page will visualize the user’s progress and provide insights into their workout habits. This page will include a radial chart and detailed breakdowns of various statistics.

**Components:**

* **Radial Chart:** Visualize progress in a circular chart, showing metrics like total weight lifted or number of sets over a given time period.
* **Most Common Exercise:** Display the most frequent exercise performed by the user to help them identify favorite or frequently targeted workouts.
* **Muscle Group:** Show a breakdown of which muscle groups the user focuses on, helping them understand their training balance.
* **Areas of Weakness:** Based on frequency, intensity, and progress, the system can suggest areas that might require more attention.
* **Suggested Videos:** Provide a curated list of YouTube videos based on the user’s activity and areas of interest.
* **BMI and Healthy Weight:** Display the user's BMI and suggest a target weight for maintaining a healthy BMI based on their height and age.

**Plan:**

* Use data visualization libraries (e.g., Plotly or Chart.js) to generate the radial chart.
* Analyze session data to identify the most common exercises and muscle groups.
* Create logic to detect areas of weakness and suggest YouTube videos based on trends in the user's logged data.

**3.3 Account Page**

The Account Page will be where users can view and edit their personal information. This page will display key health and fitness metrics such as BMI, weight, and goals.

**Components:**

* **Name:** Display the user's name.
* **Email:** Show the user’s email address for reference.
* **Weight:** The user's current weight, which will be used to calculate their BMI.
* **Height:** The user's height, also used in BMI calculation.
* **BMI:** Display the user’s current BMI with an option to calculate it based on entered weight and height.
* **Goal:** Users will set a fitness goal (e.g., weight loss, muscle gain, endurance improvement) and track progress.
* **Most Popular Exercise:** Display the exercise the user has logged the most to provide insights into their workout focus.

**Plan:**

* Build a backend API for managing user information and saving changes to the account details.
* Calculate BMI dynamically using the entered weight and height.
* Display personalized data about the user’s most common exercises.

**4. Development Plan**

**4.1 Backend Development:**

* Set up a Flask API with endpoints for managing sessions, retrieving stats, and handling user account information.
* Implement user authentication using Flask-JWT-Extended.
* Create a database schema with SQLAlchemy to store user data, sessions, exercises, and statistical metrics.

**4.2 Frontend Development:**

* Build a responsive UI using HTML, CSS, and JavaScript, with the possibility of using frameworks like React or Vue.js.
* Create interactive charts using JavaScript libraries (e.g., Chart.js, Plotly).
* Integrate the backend API with the frontend for smooth data flow and visualization.

**4.3 Testing and Iteration:**

* Perform unit testing for individual components, such as session logging and BMI calculation.
* Conduct integration testing to ensure data flows correctly between the frontend and backend.
* Collect feedback from users to iterate and improve the features.

**5. Conclusion**

This project aims to provide a comprehensive gym logging experience for users, combining session tracking, statistical analysis, and personalized insights. The features described will help users stay motivated, improve their workouts, and achieve their fitness goals by providing clear data visualizations, suggestions, and health metrics. The structured approach of developing the backend, frontend, and database ensures a scalable and maintainable solution.