

UNIVERSITI TEKNOLOGI PETRONAS



**OBJECT ORIENTED PROGRAMMING
TFB1033/TEB1043
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PROPOSAL FOR PROJECT
GROUP KPA FITNESS**

LECTURER:

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I. Introduction:

In the digital age, a strong online presence is critical for businesses to succeed. This proposal describes the creation of a fitness club website utilizing Object-Oriented Programming (OOP) principles. Using OOP, we hope to provide a scalable, stable, and user-friendly platform for gym members to access services, plan appointments, and engage with trainers.

II. Purpose

1. Create a reliable system by creating a strong banking client-server application to ensure dependability and minimise downtime.
2. Ensure data security by using strict security measures to secure sensitive information and ensure data integrity.
3. Support scalability by creating a solution that can grow and adapt to the expanding requirements of banking clients.

III. System Architecture

1. Presentation Layer: Client applications (JavaFX for desktop or web-based UI using Angular/React)
2. Business Logic Layer: Server-side application using Spring Boot, containing controllers, services, and security components.
3. Data Access Layer: Database management using MySQL/PostgreSQL and DAOs with Hibernate/JPA

IV. User experience Design (UX)

1. User-Centered Design Approach:

- Our UX design strategy is based on the needs, tastes, and behaviors of our target users: fitness fanatics, gym members, and anyone looking to enhance their health and wellness.
- We will use user research approaches such as surveys, interviews, and usability testing to learn about users' needs, pain areas, and preferences.

2. Interactive Features and Personalization:

- Interactive elements like class booking calendars, trainer profiles, and personalized suggestions will increase user engagement and pleasure.
- Users will be able to modify their experience by establishing preferences, saving favorite classes, and receive personalized suggestions based on their fitness objectives and interests.

3. Accessibility and Inclusivity:

- We are dedicated to providing accessibility and inclusivity to all users, especially those with disabilities or special needs.
- The website will follow accessibility standards and rules, such as the Web Content Accessibility rules (WCAG), to guarantee that all users can perceive, operate, and understand the content.

V. Functionality

1. Registering and creating a profile

Clients: Go to the website or download the app. Enter your personal information and fitness objectives after registering with your email address or social media accounts.

Instructors/coaches: Use your work email address or social media credentials to sign up. Make a profile that highlights your training, credentials, and areas of experience.

2. To adjust Exercise Programmes

Evaluation and Development of Plans

Clients: To help your coach understand your fitness level and objectives, complete an introductory assessment.

Instructors/coaches: Create a customized training programme with step-by-step instructions and instructional videos using the evaluation results.

3. Scheduled Distribution and Updates

Clients: Use your dashboard to get your customized training plan, which includes a daily and weekly timetable.

Coaches: Track your customers' development and modify the exercise schedules in accordance with feedback.

4. Interaction live with an expert

Texting and Input

Clients: Use the app to chat with your coach to discuss your exercises and ask questions.

Coaches: Answer messages from clients and modify programmes in response to their input.

5. Progress Monitoring

Tracking Exercises and Health Data –

Customers: Keep a journal of your workouts, including the weight, duration, sets, and repetitions. Keep track of your daily diet, hydration, and sleep data. Sync for automatic updates with wearable technology.

VI. Security Measure

Secure Authentication: Implement robust authentication mechanisms.

Strong Password Policies: Enforce strong password creation policies, including minimum length, complexity requirements, and regular updates.

Security Awareness: Provide security awareness resources and training for users, including tips on creating strong passwords, recognizing phishing attempts, and safely managing their accounts.

VII. Benefits

To provide a user-friendly experience, the program will satisfy the needs, musts and the behavior of the fitness and gym members and also other individuals who aim to improve their health. The program has an interactive feature that schedules classes and sessions for the user according to the user's wish and recommends some suggestions for them. The ease with which users may organize, postpone, and cancel sessions enhances their capacity to oversee exercise regimens and contacts with trainers. The communication element will improve engagement and assistance between trainers and members by enabling direct messaging and alerts. Pipelines for continuous deployment and integration will guarantee that security updates and new features are added to the platform on a regular basis. The platform will remain current and user-friendly with regular updates based on user feedback.

VIII. Closing

This proposal includes a detailed implementation strategy to meet these goals, ensuring that the fitness gym app is both useful and safe. By prioritising security from the start, we want to earn user confidence and provide a high-quality, safe fitness solution. We commit to following best practices and industry standards throughout the development process, from planning and requirement analysis to deployment and maintenance. Your approval of this plan will allow us to move forward with confidence, knowing that our users will receive a secure and effective service. Thank you for considering our proposal. We look forward to receiving your input and permission before proceeding with this project.

