Proposal for Gym Management System

Software Engineering

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### **1. Introduction**

The proposed Gym Management System (GMS) is designed to address the operational challenges of gym facilities by automating routine tasks, enhancing member engagement, and providing valuable insights for decision-making. The system will incorporate features to support gym members, trainers, and administrators, ensuring user-friendliness, scalability, and robust security.

### **2. Stakeholders**

#### **Primary Stakeholders**

* **Gym Owners**: Oversee operations, manage memberships, and financial transactions.
* **Gym Administrators**: Handle attendance, member management, and reporting.
* **Trainers**: Provide personalized training plans and track member progress.
* **Gym Members**: Access membership details, progress reports, tutorials, and diet plans.

#### **Secondary Stakeholders**

* **IT Support Team**: Ensure system maintenance and address technical issues.
* **Third-party Payment Providers**: Facilitate secure and seamless payment processing.
* **Regulatory Authorities**: Ensure compliance with data security and privacy regulations.

### **3. Scenarios**

#### **Operational Scenarios**

* **Membership Management**: Automated sign-up, plan updates, and renewals.
* **Attendance Tracking**: Detailed tracking of member and trainer attendance.
* **Progress Monitoring**: Monthly reports with metrics like weight progress and fat percentage.
* **Trainer Interaction**: Tutorials and diet plans customized by trainers.

#### **Administrative Scenarios**

* **Financial Reporting**: Automated reports including revenue, cash flow, and ROI.
* **Data Migration**: Securely migrate legacy data into the new system.
* **System Maintenance**: Scheduled updates and minimal downtime.

#### **Security Scenarios**

* **Data Protection**: Encryption of sensitive data and secure payment systems.
* **Access Control**: Role-based access for members, trainers, and administrators.
* **Fraud Prevention**: Secure payment gateways with real-time monitoring.

### **4. Functional Requirements**

* **Membership Management**: Sign-up/login, view/update membership plans, and download payment challans.
* **Progress Tracking**: View progress calendar and generate monthly progress reports.
* **Trainer Interaction**: Access personalized diet plans and categorized workout tutorials.
* **Financial Management**: Handle transactions and generate financial reports.
* **Complaint Resolution**: Submit and track complaint forms.
* **Communication**: Chat functionality for trainers, members, and administrators.

### **5. Non-functional Requirements**

* **Security**: Role-based access and data encryption.
* **Portability**: Support for both Android and iOS devices with optimized user experience.
* **Usability**: Intuitive interface for seamless navigation.
* **Performance**: System must handle 1,000 concurrent users and ensure data transfer within 2 seconds.
* **Privacy**: Adherence to data protection standards for sensitive user details.
* **Maintenance**: Quick resolution of bugs with minimal downtime.

### **6. Constraints**

* **Data Backup and Recovery**: Regular backups and defined recovery procedures.
* **Geographic Constraints**: Multi-location support with language options.
* **Environmental Constraints**: Consideration for gym environments.
* **Maintenance and Support**: Availability of ongoing support post-deployment.

### **7. Questionnaire for Requirement Gathering**

#### **General Questions**

1. What are your primary goals for implementing this system?
2. What are the main challenges you face in gym operations currently?

#### **Functional Questions**

1. What types of membership plans do you offer?
2. What metrics or insights are crucial for your reporting needs?
3. What types of reports (financial, attendance, progress) are most important?

#### **Technical Questions**

1. Do you require integration with existing systems or third-party services?
2. What devices or platforms do you expect the system to support?
3. What scalability requirements do you foresee?

#### **Security and Compliance Questions**

1. What specific security concerns or standards should the system address?
2. Are there any regulatory requirements the system must comply with?

#### **Operational Questions**

1. What data should be migrated to the new system?
2. How do you envision staff training for the new system?

### **8. Conclusion**

The Gym Management System will streamline gym operations, enhance member satisfaction, and provide actionable insights for growth. By incorporating the outlined functional and non-functional requirements, this system will address key challenges and provide a scalable, secure, and user-friendly solution.

**Next Steps:**

* Conduct detailed stakeholder interviews.
* Finalize the requirements and prepare a development plan.
* Initiate system design and prototyping.