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GymSoft Management System

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Abstract – Gym Management Software is a digital platform designed to simplify and automate gym operations. It helps manage memberships, attendance, fee payments, workout schedules, and member records efficiently. The system reduces paperwork, saves time, and minimizes human errors. It provides a user-friendly interface for both gym administrators and members. The main objective is to improve gym management efficiency and enhance the overall fitness center experience.

Keywords – Gym Management System, Membership Management, Attendance Tracking, Payment Management, Fitness Center, Database Management, Automation, Workout Scheduling.

I. INTRODUCTION

Gym Management Software is a digital system developed to simplify and automate the daily operations of a fitness center. Traditional gym management involves manual record-keeping, which can be time-consuming and difficult to maintain. This software provides modules for member management, attendance tracking, membership packages, payments, enquiries, and expense management. It also offers financial reports and analytics to monitor gym performance. The system uses an SQLite database for local data storage and supports offline operations. The main aim is to improve efficiency, accuracy, and overall gym management.

1. System Analysis

The proposed Gym Management Software is designed to automate and simplify gym operations. It replaces manual record-keeping with a centralized digital management system. The system manages members, membership packages, attendance, payments, enquiries, trainers, and expenses. It uses an SQLite database for secure local data storage and supports offline functionality. It also provides reports and financial analytics to improve accuracy and management efficiency.

2. Problem Statement

Traditional gym management systems often depend on manual paperwork and separate record-keeping methods. Managing member details, membership plans, attendance, and payments manually is time-consuming and may lead to errors. Gym administrators also face difficulties in tracking expenses, enquiries, and membership renewals. Existing methods often lack centralized data management and proper financial analytics. Therefore, GYM SOFT is developed to automate gym operations, improve data accuracy, and provide efficient management through a centralized offline desktop application.

3. Methodology

The proposed GYM SOFT application is developed using a systematic approach to automate and simplify gym management operations. The methodology consists of the following stages:

- **Requirement Analysis:** The requirements of gym administrators are identified, including member registration, membership management, attendance, payments, enquiries, trainers, and expense tracking.
- **System Design:** A user-friendly Windows desktop interface is designed with different modules for managing gym activities. The system uses a centralized database structure to maintain records.
- **Database Design:** SQLite is used for local data storage. Separate relational tables are maintained for members, memberships, payments, attendance, and expenses.
- **System Implementation:** Different modules are implemented, including the dashboard, member directory, package management, attendance terminal, payment transactions, expense book, and financial analytics.
- **Testing and Validation:** The application is tested to verify data entry, record management, attendance tracking, payment processing, report generation, and overall system functionality.

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- **Backup and Recovery:** JSON-based database backup and restoration features are provided to maintain data safety and recover records when required.
- **Deployment:** The developed application operates as a Windows desktop application and supports offline gym operations using locally stored database records.

4. Design Implementation

The GYM SOFT application is designed with a modular architecture to provide an efficient and organized gym management solution. The implementation focuses on a

simple user interface, reliable database management, and easy access to different gym operations.

- **Dashboard Design:** The dashboard provides an overview of total members, active members, expired memberships, revenue, and financial analytics.
- **Member Management Design:** This module allows administrators to add, update, search, and manage gym member information and membership details.
- **Package Management Design:** Different membership plans, such as Golden, Silver, Bronze, and Lite, can be managed with their respective prices and durations.
- **Attendance Management Design:** The attendance module records member check-in and check-out details using Member ID, barcode, or QR code scanning.
- **Payment Management Design:** This module manages membership fees, payment transactions, payment history, and receipt generation.
- **Enquiry Management Design:** The system maintains enquiry records, follow-up details, and potential member information.
- **Trainer and Expense Management:** Administrators can maintain trainer and staff records and record operational expenses such as rent, salaries, and maintenance.
- **Reports and Analytics Design:** The application provides graphical representations of revenue, expenses, profit, and membership statistics.
- **Database Implementation:** SQLite is used to store and manage application data locally, enabling offline functionality.
- **Backup and Restore Implementation:** JSON-based backup and restoration facilities are provided to support data recovery and database protection.

1.5 Figures And Tables

Figures and tables are used to present the design, functionality, and structure of the proposed GYM SOFT application. The figures illustrate the dashboard, member management, attendance, payment, and analytics interfaces. The tables describe the different software modules and their respective functions. They also provide information about the technologies used, including SQLite and JSON. These visual representations help readers understand the system architecture and overall working of the Gym Management Software.



.Fig.1. Gym Management Dashboard



Fig.2. Gym Soft Management System Workflow

Table I: Main modules and their functions

Module	Function
Dashboard	Displays member statistics, renewals, attendance, revenue, and membership health.
Members	Maintains member profiles, package details, payment status, and validity.
Packages	Configures membership plans, prices, and durations.
Attendance	Records member checkin/check-out and daily attendance.
Enquiries	Stores prospective member details, followups, and lead status.
Payments	Maintains transaction history, payment methods, and receipts.

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Module	Function
Trainers and Staff	Provides an interface for managing trainer/staff records.
Expenses	Records operational expenses such as rent, salary, and maintenance.
Reports	Presents revenue, expenses, profit, and membership analytics.
Settings	Configures gym profile, billing details, and display preferences.
Backup & Restore	Exports and restores database archives in JSON format.

Table 2. Technology and implementation details

Component	Details supported by the screenshots
Application type	Windows desktop application
Database	SQLite relational database
Backup format	JSON archive
Storage approach	Local storage in the Windows user profile
Connectivity	Standard gym operations can run offline
Data areas	Members, memberships, payments, attendance, and expenses
Interface themes	Light mode and dark mode

Table 3. Existing approach and GYM SOFT feature comparison

Parameter	Manual / basic approach	GYM SOFT
Member records	Paper registers or separate files	Member directory with searchable records
Attendance	Manual register	Digital checkin/check-out terminal
Membership plans	Manual tracking	Configurable package plans
Enquiries	Notebook or separate list	Enquiry status and follow-up management
Payments	Manual ledger	Payment transaction history and receipts
Expenses	Separate expense register	Expense book with categories and totals
Business reports	Manual calculations	Financial analytics and charts
Backup	Manual copying	JSON backup and restore

Table 4. Dashboard indicators shown in the supplied sample screen

Indicator	Displayed value	sample
Total members	5,002	
Active members	3,542	
Due in 7 days	106	
Expired members	1,354	
Today's attendance	5	
Today's cash	₹50,491	

II. RESULT AND DISCUSSION

The developed GYM SOFT application provides an efficient solution for managing daily gym activities. It successfully integrates member management, membership packages, attendance tracking, payment processing, enquiry management, and expense records. The dashboard displays important information such as total members, active members, expired memberships, and revenue. Financial analytics help administrators monitor income, expenses, and overall business performance. The SQLite database and JSON backup facility support local data management and recovery.

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1. Advanced Proposed System

- **Time Efficiency:** Reduces manual work and simplifies daily gym operations.
- **Easy Management:** Provides centralized management of members, payments, attendance, and packages.
- **Data Accuracy:** Reduces errors through digital record management.
- **Offline Accessibility:** Allows gym operations without continuous internet connectivity.
- **Financial Tracking:** Helps monitor revenue, expenses, and profit.
- **Data Security:** Provides local database storage and JSON backup and restore facilities.
- **User-Friendly Interface:** Offers simple navigation with light and dark themes.

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2. Future Scope

The GYM SOFT application can be further enhanced by introducing advanced features to improve gym management and user experience.

- **Mobile Application:** Develop an Android and iOS application for gym members and administrators.
- **Cloud Integration:** Implement cloud database storage for accessing gym records from multiple devices.
- **Online Payment Gateway:** Integrate UPI, credit cards, and online payment facilities.
- **AI-Based Fitness Recommendations:** Provide personalized workout and fitness suggestions based on member requirements.
- **Automated Notifications:** Send SMS, WhatsApp, or email reminders for membership renewals and pending payments.
- **Advanced Analytics:** Introduce predictive analytics to understand membership trends, revenue growth, and business performance.
- **Biometric Attendance:** Integrate fingerprint or face recognition for automatic member attendance tracking.

III. CONCLUSION

The GYM SOFT application provides an efficient and user-friendly solution for managing daily gym operations. It simplifies member management, attendance tracking, membership packages, payments, and expense records. The SQLite database ensures organized local data storage, while JSON backup helps in data recovery. The system reduces manual work, improves accuracy, and saves administrative time. Overall, GYM SOFT helps fitness centers manage their activities more effectively through a centralized offline desktop application.

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