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RAJALAKSHMI NAGAR, THANDALAM 602 105



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during the academic year 2025- 2026*

Signature of Faculty in-charge

Submitted for the Practical Examination held on.....

Internal Examiner

External Examiner

INDEX

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1		I/O, Data Types, Operators	
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GYM MANAGEMENT SYSTEM

A MINI-PROJECT REPORT

Submitted by

ASWIN SIDDHARTH A

240701064

AJAY PRASATH P

240701023

in partial fulfillment of the award of the degree

of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE AND ENGINEERING



RAJALAKSHMI ENGINEERING COLLEGE, CHENNAI

An Autonomous Institute

CHENNAI

NOVEMBER 2025

BONAFIDE CERTIFICATE

Certified that this project “**GYM MANAGEMENT SYSTEM**” is the bonafide work of “**ASWIN SIDDHARTH A, AJAY PRASATH P**” who carried out the project work under my supervision.

SIGNATURE

Dr. DEEPA SAI

ASSISTANT PROFESSOR SG

Dept. of Computer Science and Engg,
Rajalakshmi Engineering College
Chennai

This mini project report is submitted for the viva voce examination to be held on

INTERNAL EXAMINER

EXTERNAL EXAMINER

ABSTRACT

In our city, fitness and wellness have become essential parts of modern living. However, many local gyms still rely on manual methods to manage member data, trainer schedules, and payment tracking, leading to inefficiency and errors. To overcome these challenges, our team developed a **Gym Management System** that helps streamline daily operations and organize data efficiently. The main objective of this project is to automate membership management, trainer allocation, and attendance tracking according to individual requirements. This system helps maintain accurate records of members, trainers, and workout plans, enabling the gym to provide better services and stay competitive in the growing fitness industry.

ACKNOWLEDGEMENT

We express our sincere thanks to our beloved and honorable chairman **MR. S. MEGANATHAN** and the chairperson **DR. M.THANGAM MEGANATHAN** for their timely support and encouragement.

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We also extend our sincere and hearty thanks to our internal guide **Dr. DEEPA SAI**, for her valuable guidance and motivation during the completion of this project.

Our sincere thanks to our family members, friends and other staff members of computer science engineering.

1. ASWIN SIDDHARTH A

2. AJAY PRASATH P

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The Gym Management System is a comprehensive software solution designed to streamline and automate the daily operations of fitness centers and gyms. This project facilitates efficient management of member registrations, membership plans, class scheduling, trainer assignments, payment processing, and attendance tracking. The system provides necessary information about membership availability, class schedules, and payment histories, making it convenient for both gym administrators and members to access relevant data in real-time.

1.2 SCOPE OF THE WORK

The Gym Management System will help fitness centers efficiently manage their operations and provide better services to members. It helps gym administrators have quick access to member information, class schedules, and payment records, ensuring easy accessibility and improved service delivery for a wide range of users including administrators, trainers, and members.

Key Features:

Member registration and profile management

Membership plan management and renewals

Class scheduling and booking

Trainer assignment and management

Payment processing and tracking

1.3 PROBLEM STATEMENT

The need for this project arises from the fact that many fitness centers still rely on manual, paper-based processes for managing their operations. Despite the growing demand for fitness services and the presence of large gym chains with advanced systems, local gyms struggle with inefficient record-keeping, payment tracking issues, scheduling conflicts, and poor communication with members. This causes inconvenience to both gym staff and members, resulting in operational inefficiencies and decreased member satisfaction

.

1.4 AIM AND OBJECTIVES OF THE PROJECT

The main objective of this project is to automate gym operations by efficiently managing member registrations, class schedules, trainer assignments, and payments according to the gym's requirements.

CHAPTER 2

2.0 HARDWARE SPECIFICATIONS

Component	Specification
Processor	Intel i5 or higher
Memory Size	8GB RAM (Minimum)
HDD	1 TB (Minimum)
Display	1366 x 768 resolution (Minimum)
Network	Broadband Internet Connection

2.1 SYSTEM SPECIFICATIONS

Operating System	Windows
Front-End	JavaFX
Back-End	MySQL
Programming Language	Java, SQL
IDE	IntelliJ IDEA, NetBeans
JDK Version	Java 8 or higher
Database Server	MySQL
Additional Libraries	JDBC Driver
Build Tool	Maven

CHAPTER 3

MODULE DESCRIPTION

This application consists of two modules. When the program runs, it will ask for a confirmation to the login window. The person who interacts can login as an Administrator or as a User. The description of the modules are as follows:

1. Admin login

When the person who interacts tries to login as Admin then he needs to login with his username and password. The administrator only has the power to change and manipulate the data in the database.

2. User login

When the person tries to login as a user then he/she will be prompted to enter

the number of symptoms and the final result will be printed in the form of table.

CHAPTER 4

SAMPLE CODING

```

CREATE TABLE IF NOT EXISTS users (
    id INT PRIMARY KEY AUTO_INCREMENT,
    username VARCHAR(50) UNIQUE NOT NULL,
    password VARCHAR(255) NOT NULL,
    email VARCHAR(100) UNIQUE NOT NULL,
    role ENUM('ADMIN', 'TRAINER', 'MEMBER') NOT NULL,
    first_name VARCHAR(50) NOT NULL,
    last_name VARCHAR(50) NOT NULL,
    phone VARCHAR(20),
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    updated_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP ON
    UPDATE CURRENT_TIMESTAMP,
    INDEX idx_username (username),
    INDEX idx_email (email),
    INDEX idx_role (role)
);

```

```

CREATE TABLE IF NOT EXISTS membership_plans (
    id INT PRIMARY KEY AUTO_INCREMENT,
    plan_name VARCHAR(100) NOT NULL,
    description TEXT,

```

```

    price DECIMAL(10, 2) NOT NULL,
    duration_in_months INT NOT NULL,
    is_active BOOLEAN DEFAULT TRUE,
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    updated_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP ON
    UPDATE CURRENT_TIMESTAMP,
    INDEX idx_plan_name (plan_name),
    INDEX idx_is_active (is_active)
);

```

```

CREATE TABLE IF NOT EXISTS members (
    id INT PRIMARY KEY AUTO_INCREMENT,
    user_id INT NOT NULL,
    emergency_contact VARCHAR(100),
    medical_conditions TEXT,
    membership_plan_id INT NOT NULL,
    membership_start_date DATE NOT NULL,
    membership_end_date DATE NOT NULL,
    membership_status ENUM('ACTIVE', 'EXPIRED', 'SUSPENDED')
    DEFAULT 'ACTIVE',
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    updated_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP ON
    UPDATE CURRENT_TIMESTAMP,

```

FOREIGN KEY (user_id) REFERENCES users(id) ON DELETE
CASCADE,

FOREIGN KEY (membership_plan_id) REFERENCES
membership_plans(id),

```

INDEX idx_user_id (user_id),
INDEX idx_membership_status (membership_status),
INDEX idx_membership_end_date (membership_end_date)
);

```

```

CREATE TABLE IF NOT EXISTS trainers (
    id INT PRIMARY KEY AUTO_INCREMENT,
    user_id INT NOT NULL,
    specialization VARCHAR(200),
    certifications TEXT,
    hourly_rate DECIMAL(10, 2),
    availability TEXT,
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    updated_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP ON
    UPDATE CURRENT_TIMESTAMP,
    FOREIGN KEY (user_id) REFERENCES users(id) ON DELETE
    CASCADE,
    INDEX idx_user_id (user_id),
    INDEX idx_specialization (specialization)
);

```

```

CREATE TABLE IF NOT EXISTS classes (
    id INT PRIMARY KEY AUTO_INCREMENT,
    class_name VARCHAR(100) NOT NULL,
    description TEXT,
    trainer_id INT NOT NULL,
    start_time TIMESTAMP NOT NULL,

```

```

end_time TIMESTAMP NOT NULL,
max_capacity INT NOT NULL DEFAULT 10,
current_bookings INT DEFAULT 0,
status ENUM('SCHEDULED','COMPLETED','CANCELLED')
DEFAULT 'SCHEDULED',
created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
updated_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP ON
UPDATE CURRENT_TIMESTAMP,

```

Sample 1

Sample 1 depicts the display code, that gets the data from the database i.e. being stored there and represented on users demand with the layout and measurements i.e. being already specified.

```

FOREIGN KEY (trainer_id) REFERENCES trainers(id) ON DELETE CASCADE,
INDEX idx_trainer_id (trainer_id),
INDEX idx_start_time (start_time),
INDEX idx_status (status),
CONSTRAINT chk_time_order CHECK (end_time > start_time),
CONSTRAINT chk_booking_capacity CHECK (current_bookings <=
max_capacity)
);

```

```

CREATE TABLE IF NOT EXISTS class_bookings (
id INT PRIMARY KEY AUTO_INCREMENT,
class_id INT NOT NULL,
member_id INT NOT NULL,
booking_date TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
status ENUM('CONFIRMED','CANCELLED','ATTENDED') DEFAULT
'CONFIRMED',

```

```

FOREIGN KEY (class_id) REFERENCES classes(id) ON DELETE CASCADE,
FOREIGN KEY (member_id) REFERENCES members(id) ON DELETE
CASCADE,
UNIQUE KEY unique_class_member (class_id, member_id),
INDEX idx_class_id (class_id),
INDEX idx_member_id (member_id),
INDEX idx_booking_date (booking_date)
);

```

```

CREATE TABLE IF NOT EXISTS payments (
    id INT PRIMARY KEY AUTO_INCREMENT,
    member_id INT NOT NULL,
    amount DECIMAL(10, 2) NOT NULL,
    payment_method ENUM('CASH', 'CARD', 'ONLINE') NOT NULL,
    payment_type ENUM('MEMBERSHIP', 'CLASS', 'OTHER') NOT NULL,
    status ENUM('PENDING', 'COMPLETED', 'FAILED') DEFAULT
    'COMPLETED',
    payment_date TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    description VARCHAR(255),

```

```

FOREIGN KEY (member_id) REFERENCES members(id) ON DELETE
CASCADE,
INDEX idx_member_id (member_id),
INDEX idx_payment_date (payment_date),
INDEX idx_status (status),
INDEX idx_payment_type (payment_type)
);

```

```

CREATE TABLE IF NOT EXISTS progress_tracking (
    id INT PRIMARY KEY AUTO_INCREMENT,
    member_id INT NOT NULL,
    trainer_id INT,

```

```

measurement_date DATE NOT NULL,
weight DECIMAL(5, 2),
body_fat_percentage DECIMAL(4, 2),
muscle_mass DECIMAL(5, 2),
notes TEXT,
created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
FOREIGN KEY (member_id) REFERENCES members(id) ON DELETE CASCADE,
FOREIGN KEY (trainer_id) REFERENCES trainers(id) ON DELETE SET NULL,
INDEX idx_member_id (member_id),
INDEX idx_measurement_date (measurement_date)
);

```

```

CREATE TABLE IF NOT EXISTS workout_sessions (
    id INT PRIMARY KEY AUTO_INCREMENT,
    member_id INT NOT NULL,
    trainer_id INT,
    session_date TIMESTAMP NOT NULL,
    duration_minutes INT,
    exercises_performed TEXT,
    trainer_notes TEXT,
    member_feedback TEXT,
    rating INT CHECK (rating >= 1 AND rating <= 5),
    FOREIGN KEY (member_id) REFERENCES members(id) ON DELETE CASCADE,
    FOREIGN KEY (trainer_id) REFERENCES trainers(id) ON DELETE SET NULL,
    INDEX idx_member_id (member_id),
    INDEX idx_trainer_id (trainer_id),
    INDEX idx_session_date (session_date)
)

```

);

```
CREATE TABLE IF NOT EXISTS equipment (
    id INT PRIMARY KEY AUTO_INCREMENT,
    equipment_name VARCHAR(100) NOT NULL,
    equipment_type VARCHAR(50),
    purchase_date DATE,
    last_maintenance_date DATE,
    next_maintenance_date DATE,
    status ENUM('AVAILABLE', 'IN_USE', 'MAINTENANCE',
    'OUT_OF_ORDER') DEFAULT 'AVAILABLE',
    notes TEXT,
```

```
    INDEX idx_equipment_name (equipment_name),
    INDEX idx_status (status),
    INDEX idx_next_maintenance (next_maintenance_date)
);
```

```
-- Insert default membership plans (only if not exists)
INSERT IGNORE INTO membership_plans (plan_name, description, price,
duration_in_months) VALUES
('Basic Monthly', 'Access to gym facilities during regular hours', 29.99, 1),
('Premium Monthly', 'Full access with group classes and premium amenities', 49.99,
1),
('Basic Annual', 'Annual basic membership with 2 months free', 299.99, 12),
('Premium Annual', 'Annual premium membership with 2 months free', 499.99, 12),
('Student Monthly', 'Discounted rate for students with valid ID', 19.99, 1);
```

```
-- Insert admin user (only if not exists)
INSERT IGNORE INTO users (username, password, email, role, first_name,
last_name, phone) VALUES
('admin', 'admin123', 'admin@gymsystem.com', 'ADMIN', 'System', 'Administrator',
'555-0000');
```

CHAPTER 5

SCREEN SHOT

Fig 5.1 Introduction page

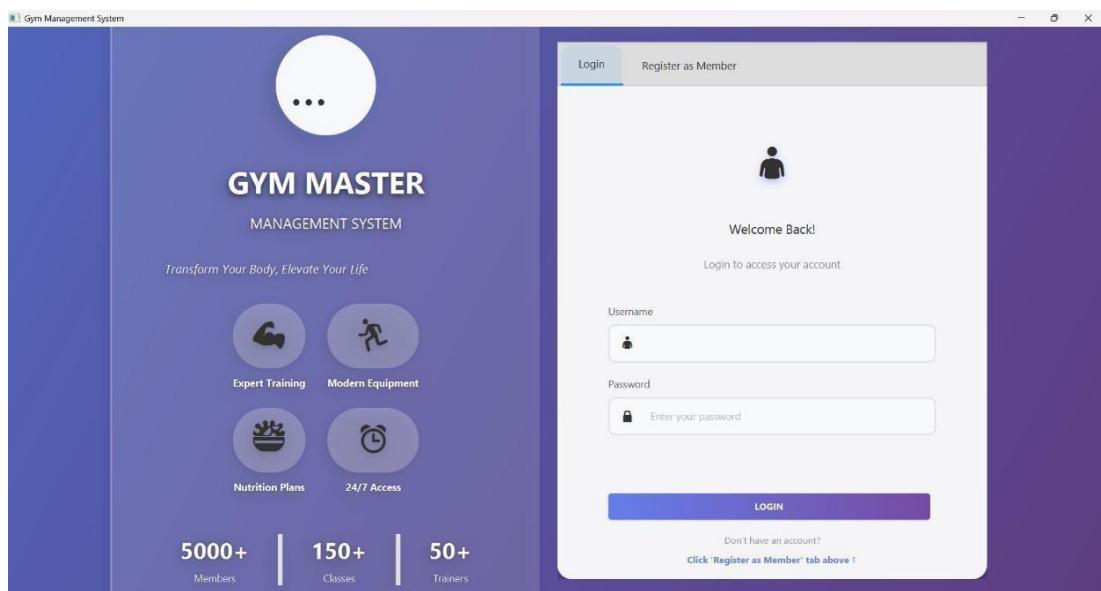


Fig 5.2 Register as Member

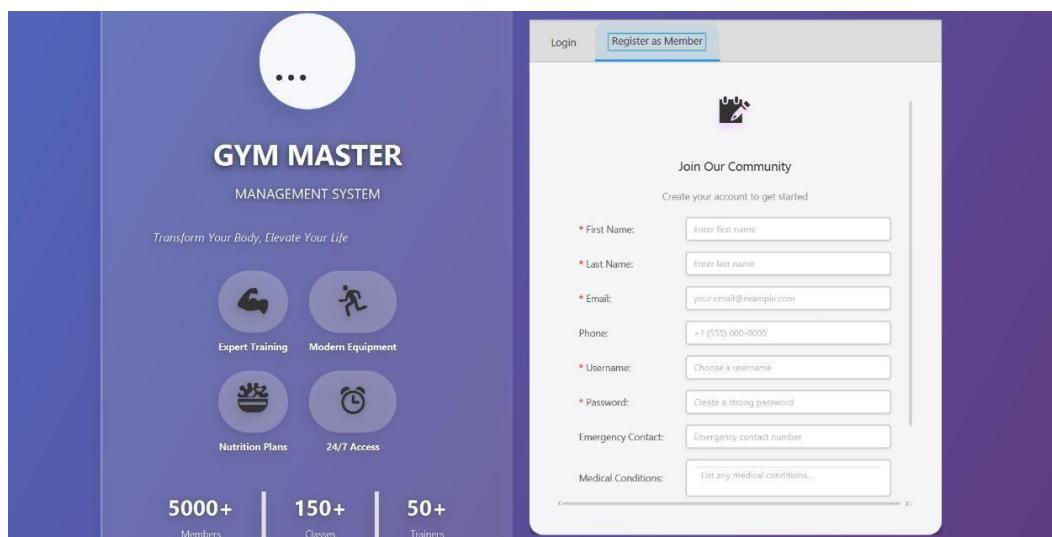


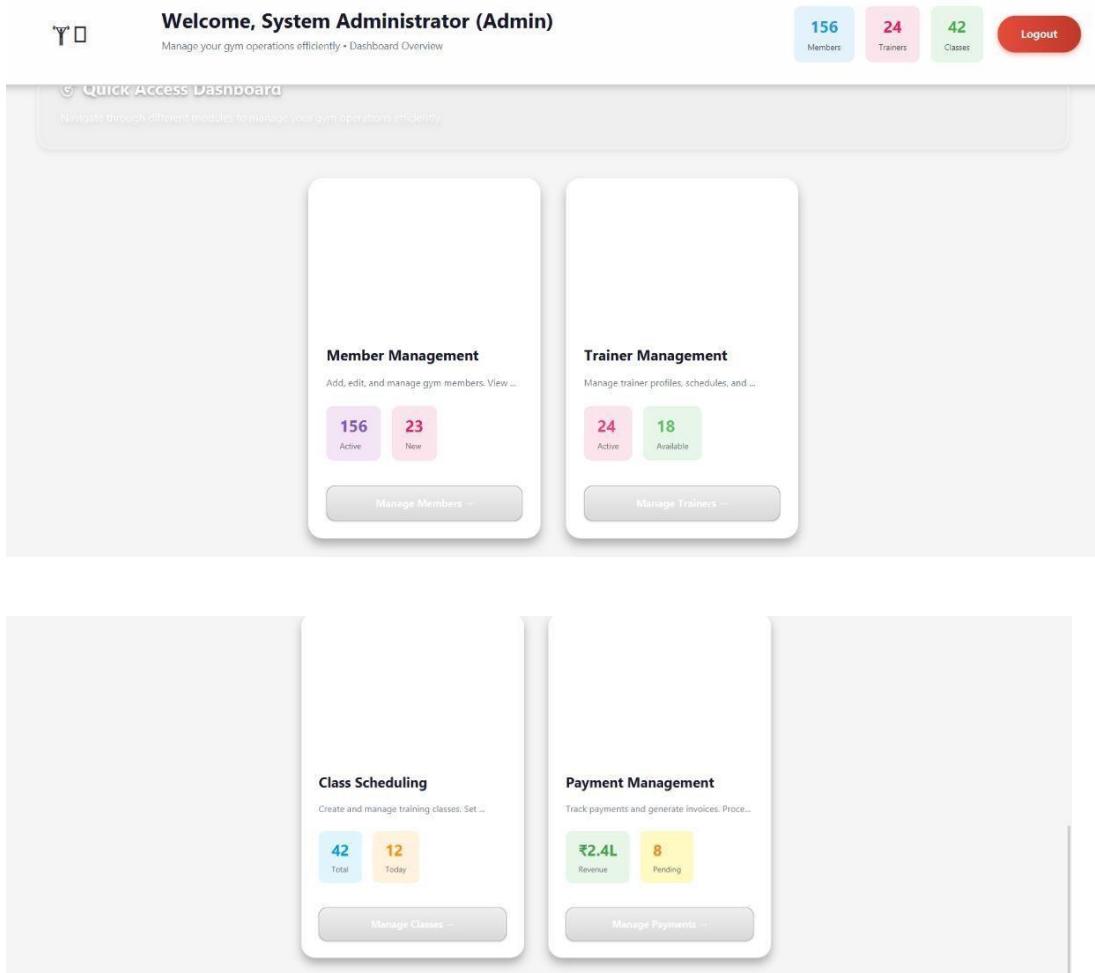
Fig 5.3 Admin Login

Fig 5.4 Member Management

Member Management

Members List

Name	Email	Phone	Status	End Date
anbu selvan	anbu@gmail.com	1242343223	ACTIVE	2025-11-24
arun kumar	sa@gmail.com	1234567890	ACTIVE	2025-11-28
aswin siddharth	aswin@gmail.com	1234567890	ACTIVE	2025-12-26
Chris Kumar	chris.kumar@gmail.com	9123450987	ACTIVE	2026-12-31
Emily Davis	emily.davis@gmail.com	9876543213	ACTIVE	2025-11-15
Jennifer Martinez	jennifer.m@gmail.com	9210987654	SUSPENDED	2026-01-08
John Doe	john.doe@gmail.com	9876543210	EXPIRED	2025-02-01
John Smith	john.smith@email.com	9876543210	ACTIVE	2026-12-31
Michael Brown	mbrown@email.com	9765432109	ACTIVE	2026-09-15
Michael Johnson	michael.j@gmail.com	9876543212	ACTIVE	2025-11-01
Priya Sharma	priya.sharma@gmail.com	9876540123	ACTIVE	2026-08-31
ram ram	ram@gmail.com	1234567890	ACTIVE	2025-11-27
Sarah Johnson	sarah.j@email.com	9845612378	ACTIVE	2026-06-30
Sarah Smith	sarah.smith@gmail.com	9876543211	ACTIVE	2026-01-15

Total: 14 | Active: 12 | Expired: 1 | Suspended: 1

Member Details

Back to Dashboard

* Required fields

Add Mem... Update Mem... Delete Mem... Clear Form

Fig 5.5 Trainer Management

Trainer Management

Trainers List

Name	Email	Phone	Specialization	Hourly Rate
Chris Kumar	chris.kumar@gmail.com	9123450987	Boxing & Martial Arts	\$60.00
Jennifer Martinez	jennifer.m@email.com	9210987654	Pre/Postnatal Fitness	\$55.00
Michael Brown	mbrown@email.com	9765432109	Sports Performance & Athlet...	\$70.00
Priya Sharma	priya.sharma@gmail.com	9876540123	Yoga & Pilates	\$55.00
Raj Kumar	raj.kumar@gym.com	9876543210	Strength Training & Powerlift...	\$200.00
Sarah Johnson	sarah.j@email.com	9845612378	Cardio & Weight Loss	\$50.00

Total: 6 | Avg Rate: \$81.67 | Min: \$50.00 | Max: \$200.00

Trainer Details

Back to Dashboard

* Required fields

Add Trainer Update Trainer Delete Trainer Clear Form

Fig 5.6 Class scheduling

Class Scheduling

Search: Date: Status: All

Classes List							Class Details	
Class Name	Trainer	Start Time	End Time	Bookings	Capacity	Status	Class Name *	Description
Boxing class	Chris Kumar	Nov 29, 2025 12:30	Dec 29, 2025 18:30	1/10	10	SCHEDULED	Enter class name	Enter class description..
yoga class	Priya Sharma	Nov 10, 2025 07:30	Dec 10, 2025 08:30	3/30	30	SCHEDULED	Select trainer	
							Schedule	
							Start Date *	Time *
							Select date	HH:MM
							End Date *	Time *
							Select date	HH:MM
							Max Capacity *	Status
							10	SCHEDULED

Tip: Double-click a row to view details.

Low Medium High Occupancy

Fig 5.7 Payment Management

Payment Management

Total Revenue **₹11246.95** Completed Payments **11** Pending Payments **0** Total Refunds **₹74.99**

Payments List									Payment Details		
Member	Transaction ID	Amount	Discount	Final Amount	Method	Type	Status	Payment Date	Member:	Amount:	Discount:
aswin siddharth	TXN17617936...	100000.00	90000.00	10000.00	CASH	MEMBER...	COMPLE...	2025-10-30 14:08:07.0			
Emily Davis		500.00	0.00	500.00	CASH	CLASS	COMPLE...	2025-10-28 11:57:32.0			
Michael Johnson		29.99	0.00	29.99	ONLINE	MEMBER...	REFUNDED	2025-10-27 13:30:00.0			
Michael Johnson		29.99	0.00	29.99	CARD	MEMBER...	FAILED	2025-10-26 15:30:00.0			
John Doe		45.00	0.00	45.00	ONLINE	CLASS	REFUNDED	2025-10-26 15:00:00.0			
Emily Davis		12.00	0.00	12.00	CASH	CLASS	COMPLE...	2025-10-23 23:30:00.0			
Sarah Smith		20.00	0.00	20.00	CASH	CLASS	COMPLE...	2025-10-22 20:00:00.0			
John Doe		15.00	0.00	15.00	CARD	CLASS	COMPLE...	2025-10-20 15:30:00.0			
Emily Davis		10.00	0.00	10.00	CASH	OTHER	COMPLE...	2025-10-18 17:30:00.0			
Emily Davis		19.99	0.00	19.99	CARD	MEMBER...	COMPLE...	2025-10-15 22:15:00.0			
Sarah Smith		89.99	0.00	89.99	CARD	OTHER	COMPLE...	2025-10-15 20:50:00.0			

Search & Filter

Payment Details

Member: Amount: Discount: % Final Amount: Payment Method: Payment Type: Status: Coupon Code: Description: Actions:

Fig 5.8 Member Dashboard

Welcome, aswin siddharth (Member)

Member Dashboard

Book Classes with Payment
Book and pay for classes in one simple process

[Book Class with Payment](#)

[Book & Pay Now](#)

My Booked Classes

Class Name	Trainer	Start Time	End Time	Status
Boxing class	Chris Kumar	2025-11-29 12:30:00.0	2025-12-29 18:30:00.0	SCHEDULED

[Cancel Booking](#)

Available Classes

Class Name	Trainer	Start Time	End Time	Available S...
yoga class	Priya Sharma	2025-11-10 07:30:00.0	2025-12-10 08:30:00.0	28

[Book Selected Class](#)

The screenshot shows the Member Dashboard with a header 'Welcome, aswin siddharth (Member)' and a 'Logout' button. Below the header is a section titled 'Member Dashboard' with a sub-section 'Book Classes with Payment' containing a button 'Book & Pay Now'. The main area has two tables: 'My Booked Classes' and 'Available Classes'. The 'My Booked Classes' table lists one entry: 'Boxing class' by 'Chris Kumar' from 2025-11-29 to 2025-12-29, status 'SCHEDULED'. The 'Available Classes' table lists one entry: 'yoga class' by 'Priya Sharma' from 2025-11-10 to 2025-12-10, availability '28'. Buttons 'Book Class with Payment' and 'Book Selected Class' are also present.

CHAPTER 6: CONCLUSION AND FUTURE ENHANCEMENT

6.1 CONCLUSION

In such a way, with the help of our project, gym members will be able to check the list of available classes, membership plans, and can register themselves to avail gym facilities. The Gym Management System clearly represents the available data of members, trainers, class schedules, and payment records, making management easier and more efficient. The system provides a comprehensive solution for automating gym operations, reducing manual workload, and improving member satisfaction. The implementation of JavaFX for the frontend provides an intuitive and user-friendly interface, while MySQL database ensures secure and reliable data storage. Hence this project makes the administrators, trainers, and members to be benefitted in all possible ways by streamlining operations and enhancing the overall gym experience.

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