A

Mini Project Report

on

Gym Management System

Submitted in partial fulfillment of the requirements for the degree

Second Year Engineering – Computer Science Engineering (Data Science)

by

Atharva Deshmukh 23107136

Yash Dandawate 23107103

Tanmay Bhoir 23107130

Riddhi Pise 23107087

Under the guidance of

Ms.Ashwini Rahude

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING (DATA SCIENCE)

A.P. SHAH INSTITUTE OF TECHNOLOGY

G.B. Road, Kasarvadavali, Thane (W)-400615

UNIVERSITY OF MUMBAI

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CERTIFICATE

This to certify that the Mini Project report on "Gym Management System" has been submitted by Atharva Deshmukh (23107136), Yash Dandawate (23107103), Tanmay Bhoir (23107130) and Riddhi Pise (23107087) who are bonafide students of A. P. Shah Institute of Technology, Thane as a partial fulfillment of the requirement for the degree in **Computer Science Engineering (Data Science)**, during the academic year **2024-2025** in the satisfactory manner as per the curriculum laid down by University of Mumbai.

Ms. Ashwini Rahude
Guide

Ms. Anagha Aher
HOD, CSE(Data Science)

Dr. Uttam D. Kolekar
Principal

External Examiner:
1.

Internal Examiner:
1.

Place: A. P. Shah Institute of Technology, Thane
Date:

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Chapter 1

Introduction

The report will define what constitutes a gym management system, detailing its core components such as member management, class scheduling, facilities management, and billing. The objective is to analyze current practices, identify potential improvements, and propose a solution tailored to address the specific needs of gym operations.

Significant contributions of this investigation include a detailed analysis of the operational challenges, evaluation of existing management systems, and recommendations for enhancements to ensure a more efficient and user-friendly experience for both gym staff and members.

1.1 Purpose:

The purpose of a Gym Management System (GMS) is to streamline and automate various gym operations, including membership management, class scheduling, billing, and facility oversight. By integrating these functions into a single platform, a GMS enhances operational efficiency, improves the member experience, supports staff management, and provides valuable insights through data analytics. It ensures timely and accurate management of administrative tasks, facilitates effective communication, and upholds data security and regulatory compliance, ultimately helping gyms run more smoothly and effectively

1.2 Problem Statement:

In today's competitive fitness industry, gyms and fitness centers face challenges in efficiently managing memberships, scheduling classes, tracking attendance, and maintaining customer engagement. The lack of a comprehensive management system leads to inefficiencies, such as double-booked classes, poor communication with members, and difficulty in tracking financial transactions.

1.3 Objectives:

- To manage membership details by tracking member information, membership types, renewal dates, and payment history.
- To implement attendance tracking to record participation in classes and personal training sessions, monitoring member engagement effectively.
- To automate billing and invoicing processes for membership fees, class payments, and personal training sessions, ensuring timely payments.

1.4 Scope:

The scope of a Gym Management System includes automating member management for registrations and profile updates, streamlining class scheduling with booking and calendar integration, overseeing facilities management for reservations and maintenance, and automating billing for invoicing, payments, and subscription tracking

Chapter 2

Proposed System

The proposed Gym Management System (GMS) will streamline and automate core gym operations. It will handle member management by automating registrations, profile updates, and renewals through a self-service portal. Class scheduling will be managed with an online booking system, optimizing schedules and avoiding conflicts. Facilities management will include a reservation system and maintenance tracking to ensure efficient use and upkeep of gym resources. Billing will be simplified with automated invoicing, payment processing, and financial reporting. Overall, the system aims to enhance operational efficiency, improve member satisfaction, and reduce administrative workload.

2.1 Features and Functionality:

- Member Management

  Automates the registration process, updates member profiles, and manages membership renewals. Includes a self-service portal for easy member access and management.

- Class Scheduling

  Provides an online booking system for fitness classes and personal training sessions, with real-time updates to prevent scheduling conflicts and optimize resource use.

- Facilities Management

  Manages reservations for gym facilities and tracks maintenance schedules, and monitors facility usage to ensure efficient operation and prevent downtime.

- Bill processing

  Automates invoicing and payment processing, supports various payment methods, and manages subscription

Chapter 3

Project Outcome

The implementation of the Gym Management System will result in a seamless and efficient operational environment for the gym, characterized by enhanced administrative efficiency and a significantly improved member experience. By automating key processes such as member registration, class scheduling, and billing, the system will reduce manual errors and free up staff to focus on higher-value tasks. Optimized resource utilization will minimize scheduling conflicts and ensure effective use of facilities and equipment, while robust financial management features will provide accurate invoicing and timely payments. Overall, the project will lead to increased member satisfaction, improved operational efficiency, and a stronger financial foundation for the gym.

- The Gym Management System significantly streamlines administrative processes, automating tasks such as member registration, profile updates, and class scheduling. This reduces the need for manual intervention, minimizes errors, and allows staff to focus on higher-value activities, leading to smoother daily operations and increased productivity.
- By providing a user-friendly self-service portal, the system enhances the overall member experience.
- The system's advanced scheduling and reservation features ensure that gym resources, including classes and facilities, are utilized effectively.
- The Gym Management System improves the management of gym facilities and equipment through enhanced tracking and maintenance features.
- With automated billing and payment processing, the system ensures accurate and timely financial transactions. It handles invoicing, processes payments securely, and manages subscription renewals efficiently

Chapter 4

Software Requirement

Software requirements define the specific needs and functionalities that a Gym Management System must meet to effectively manage gym operations. These requirements outline both what the software should do (functional requirements) and the qualities it should have (non-functional requirements, such as performance, security, and usability). Clear software requirements are essential for guiding the design, development, and testing phases of the project, ensuring that all stakeholders understand the system's capabilities and constraints. Well-defined requirements help prevent misunderstandings, reduce development risks, and ensure the final product meets user expectations.

- Frontend (User Interface and Interaction):

- NetBeans IDE:

Version: NetBeans 8.2 or later (ensure compatibility with the JDK version you are using).

Purpose: Integrated Development Environment (IDE) for writing, debugging, and managing Java code. It provides the tools necessary to develop the application's user interface and interaction layer.

- iTextPdf 7.7.4:

- Purpose: A library used for generating PDF documents programmatically within Java applications. It enables the creation of customer invoices, receipts, and other documents as part of the user experience.

- Backend (Database, Logic, and Core Functionality):

- Java Development Kit (JDK):

Purpose: Provides the core Java libraries and development tools necessary for building and running the backend logic of the application.

- MySQL Database Server:

Version: MySQL 7.7 or later (consider using the latest stable version for new features and security improvements).

Purpose: Relational database management system to store and manage backend data such as customer information, room schedules, and billing details.

- MySQL Connector/J:

Version: Latest version compatible with your MySQL server and JDK.

Purpose: JDBC driver to enable Java applications to connect and interact with the MySQL database, ensuring backend data operations.

- Java Runtime Environment (JRE):

Version: Matches the JDK version you are using.

Purpose: Provides the runtime environment necessary for running Java-based backend processes.

Chapter 5

Project Design

Project design is the process of defining the structure, components, and execution plan of a project. It involves outlining the project's objectives, scope, timeline, deliverables, resources, and risks. In this phase, detailed plans for how to achieve the project goals are created, including tasks, workflows, and responsibilities. Effective project design ensures that all stakeholders have a clear understanding of the project's direction and how the final outcomes will be achieved, setting the foundation for successful implementation and delivery.

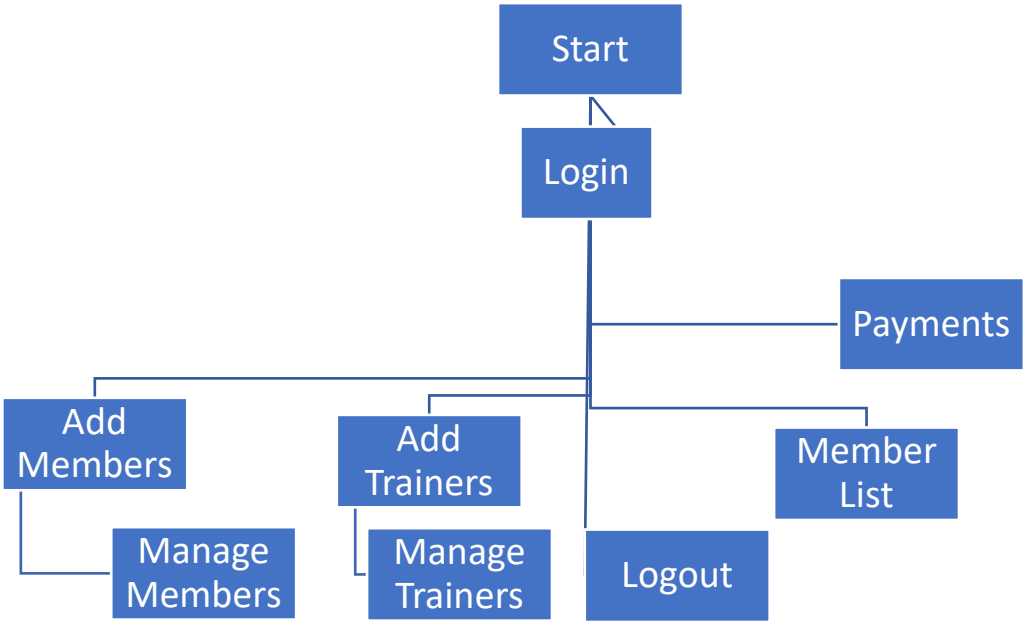

Figure 5.1: Block Diagram

- HOME PAGE: the system where the the admin can view display all the the forms where the admins wants to go in the system.

- LOGIN: This is the starting point of the system. Admin must log in to access the system.
- ADD MEMBERS: This represents the process of adding new members to the gym.
- ADD TRAINERS: This represents the process of adding new trainers to the gym.
- MEMBER LIST: This likely provides a list of all current members of the gym.
- MANAGE MEMBERS: This likely allows for managing member information, such as updating contact details or membership status..
- MANAGE TRAINERS: This likely allows for managing trainer information, such as updating contact details and other things.
- PAYMENTS: This represents the process of handling payments from members, such as membership fees or other charges.
- LOGOUT: This represents the process of logging out of the system.

Chapter 6

Project Scheduling

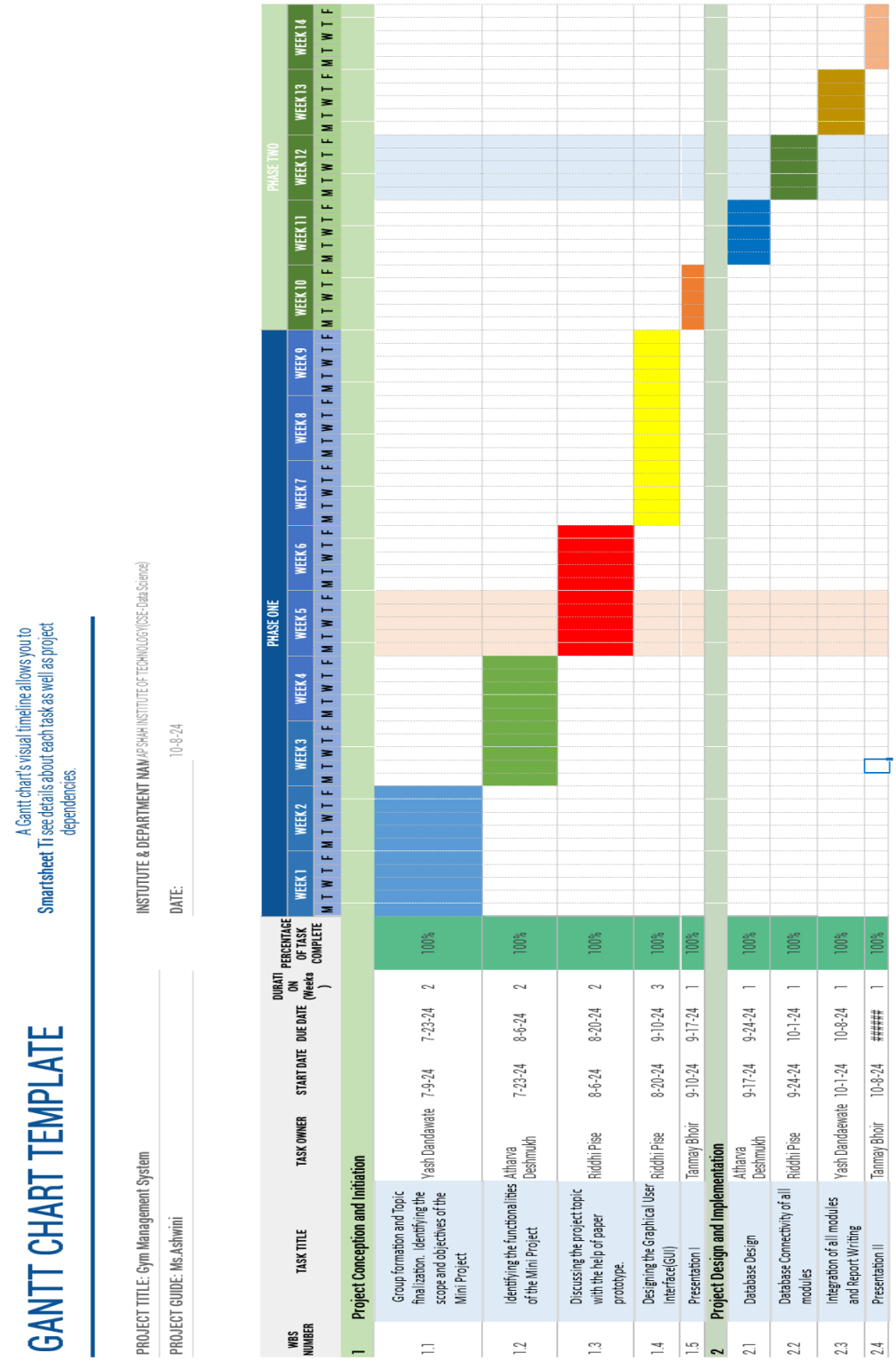

Figure 6.1

The Gantt chart visually represents a project timeline, showcasing tasks, their duration, and dependencies. The horizontal bars indicate task progress, while the colors may represent different phases or statuses. The chart shows project phases like "Project Conception and Initiation" and "Project Design and Implementation," with tasks like "Identifying the project and electives" and "Designing the presentation." The chart also includes task durations and due dates, allowing for effective project management and tracking.

Chapter 7

Results

Figure 7.1 Login

This login page for an admin likely requires entering a username and password to access the system.

Figure 7.2 Home Page

This is an admin-only page displaying a list of gym members. It includes details like member name, trainer, type, payment amount, payment date, due date, and days remaining.

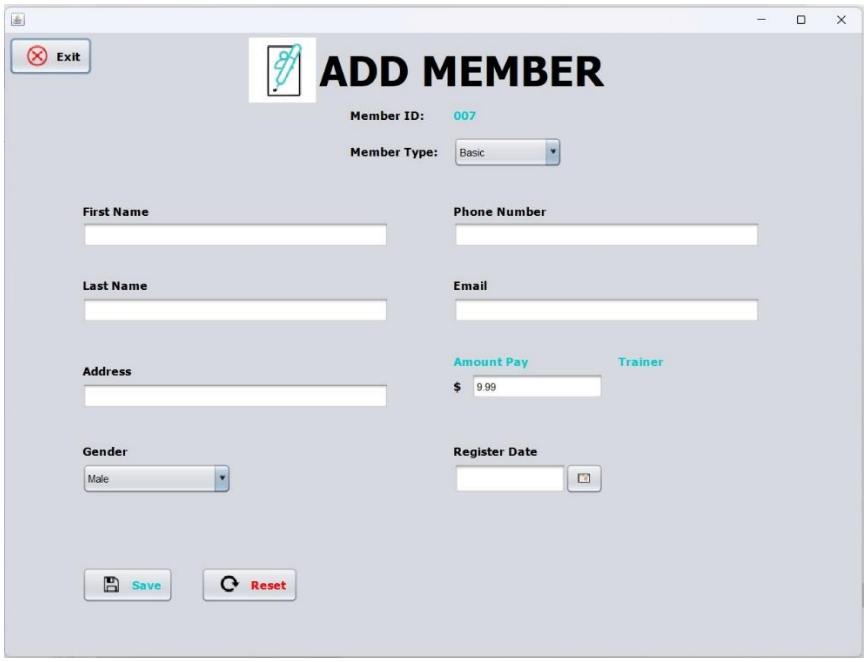

Figure 7.3 Add Member

This is an admin-only page for adding new members to the gym. It requires entering member details like ID, type, name, contact information, payment amount, gender, and registration date.

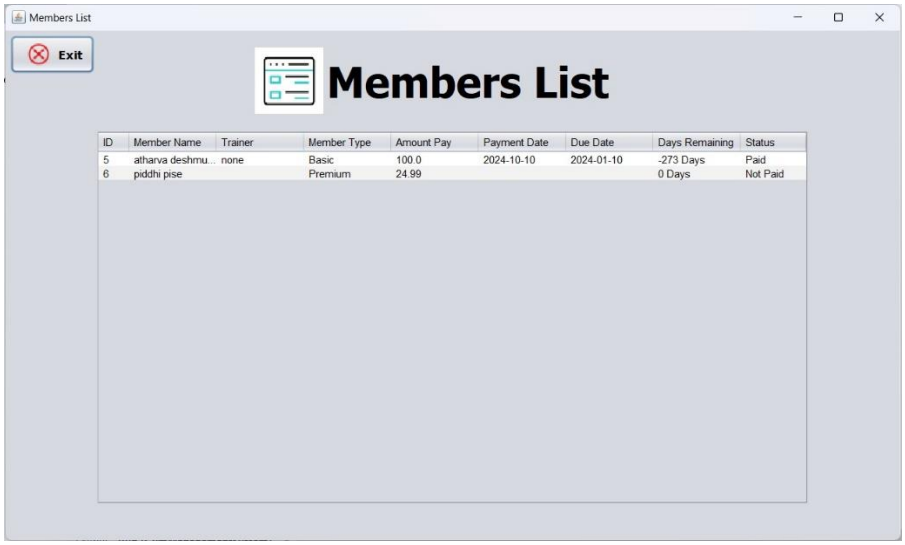

Figure 7.4 Member List

The Manage Rooms interface is designed for receptionists to oversee and organize room allocations, bookings, and configurations within a facility such as a hotel.

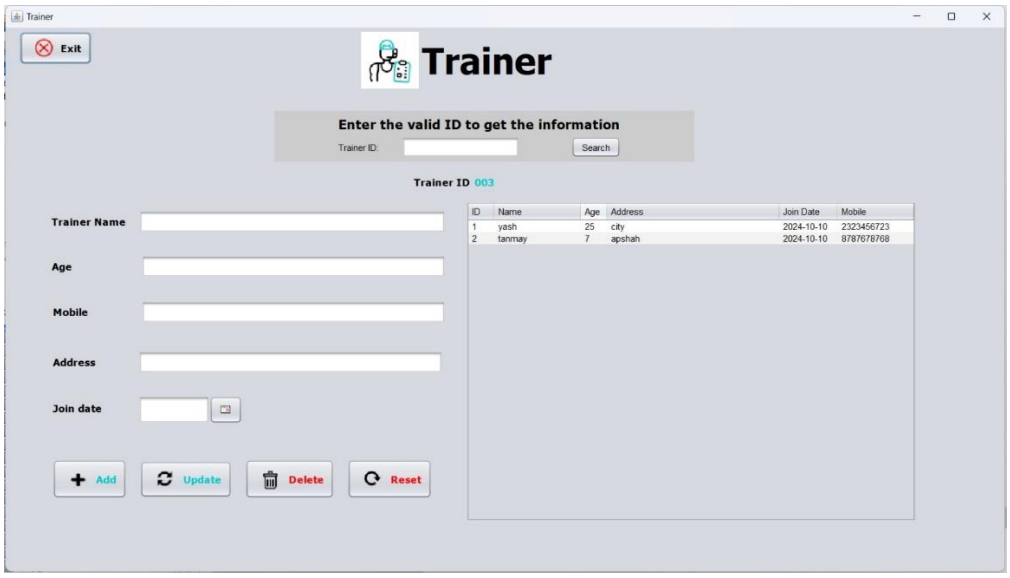

Figure 7.5 Trainer

This is an admin-only page for managing trainer information. It allows admins to search for trainers by ID, view and edit trainer details, and add, update, or delete trainers.

Figure 7.6 Payment

The payment page displays a table of members with their IDs, names, types, amounts due, payment dates, due dates, and days remaining. Admins can use this page to search for members by ID, view their payment information, and potentially process payments.

Chapter 8

Conclusion

The Gym Management System offers a comprehensive solution to streamline operations and enhance the overall member experience in fitness centers. By automating key processes such as membership management, class scheduling, and billing, the system reduces administrative burdens and minimizes errors. Its user-friendly interface fosters member engagement, while robust backend functionality ensures efficient data handling and reporting. The incorporation of security measures protects sensitive information, instilling confidence in users. Ultimately, this system not only improves operational efficiency but also supports the growth and sustainability of the gym, making it an invaluable asset in today's competitive fitness industry.

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