

GYMLY – Gym Management System

Final Project Report



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DECLARATION

We declare that this project report or part of it was not a copy of a document done by any organization, university, any other institute, or a previous student project group at SLIIT and was not copied from the Internet or other sources.

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ABSTRACT

Gymly is a comprehensive gym management system designed to streamline operations for fitness centers. This web-based application offers a set of eight essential features, including employee management, member management, workout support management, workout program management, feedback and Q&A management, trainer account handling, personal trainer handling, and workout schedule handling. With Gymly, gym owners can efficiently manage their daily tasks more conveniently and automatedly.

Using a MERN stack, Gymly offers a user-friendly and interactive platform for gym owners and members to manage their activities. By eliminating the need for manual operations, Gymly helps to mitigate the issues faced in traditional gym management systems, resulting in significant improvements in the gymnasium's operations.

Our team members have carefully selected the functionalities to include in Gymly after conducting thorough discussions on creating a Java-based web application. Our chose the MERN stack as the technology to build Gymly, which includes MongoDB, Express JS, ReactJS, and NodeJS. We also opted to use GitHub for version control, ensuring easy collaboration and code management.

In summary, Gymly offers gym owners an advanced and comprehensive gym management system that helps them easily manage their daily activities. By embracing automation and digitalization, Gymly offers an efficient and streamlined solution that addresses the challenges faced in traditional manual gym management systems.

ACKNOWLEDGMENT

Undertaking an ITP group project is an incredible opportunity for IT students to gain hands-on experience and put their learning into practice. As members of the ITP_2023_Y2_S2_WE7 group, we express our heartfelt appreciation to all who supported and guided us to achieve success in our project.

We Gymly allows gym owners to, Dr. Samantha Rajapaksha for his invaluable guidance and unwavering support throughout the project. His expertise and insights have been instrumental in shaping our understanding and application of key concepts.

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LIST OF ACRONYMS AND ABBREVIATIONS

Table 1 - Acronyms And Abbreviations

Abbreviation	Description
MERN	MongoDB, Express, React Js, Node Js
ER	Entity Relationship Diagram
DBMS	Database management System
UI	User Interface
SD	Sequence Diagram
SDLC	Software Development Life Cycle

SYSTEM DIAGRAM

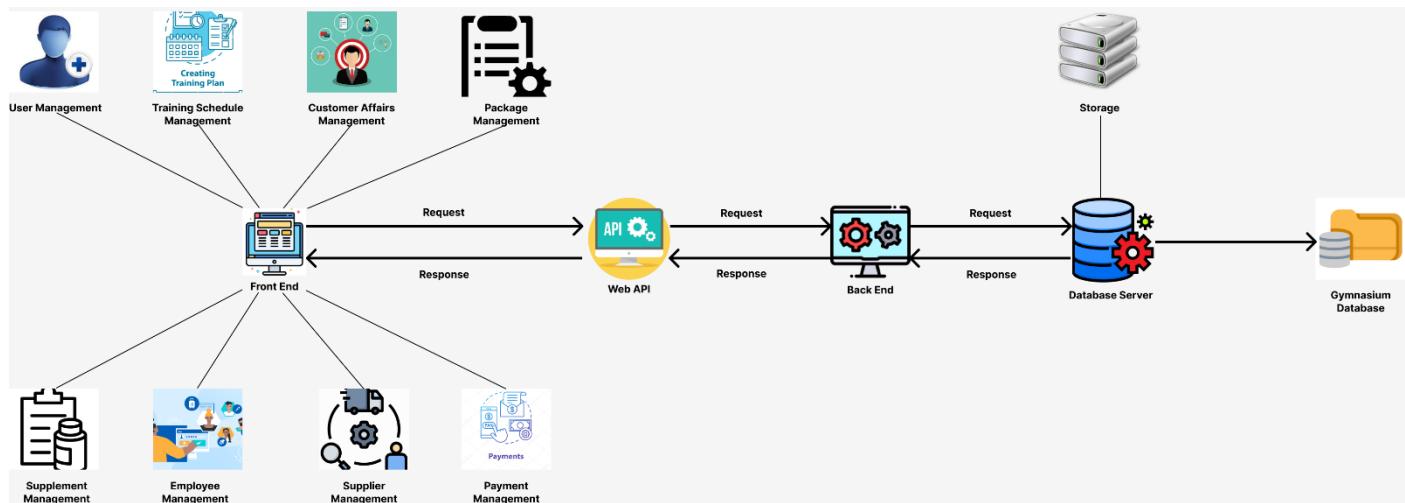


Figure 1.1 - System Diagram

CHAPTER1 - INTRODUCTION

BACKGROUND

Company Background

We are excited to announce that we are developing a gym management system that will be a product offering for our client, Max Fitness Ladies' Gym. Our market research has revealed that there are currently no products available in the open market that adequately fulfill the functionalities of a gym system, and we are confident that our solution will address this gap.

Our system is primarily designed for single-branch gym companies, rather than multi-branch companies. In addition to basic gym management functionalities such as employee and member management, workout program management, and trainer account handling, we are also integrating an online platform for supplement buying and selling. This will provide added convenience to gym users who are interested in purchasing supplements to support their fitness goals.

Membership options will be offered as monthly and annual packages, with features and benefits tailored to the specific needs of each user. This flexible approach to membership is designed to attract a wide range of users and increase overall revenue for the gym.

To ensure that we are meeting the needs and expectations of our clients, we will be collecting feedback and ratings from gym users based on their experiences. This information will be used to evaluate the success of the gym business and make improvements where necessary.

Overall, we are confident that our gym management system will provide a comprehensive and user-friendly solution for gym owners and their customers. Our goal is to enhance the overall gym experience and help our clients maximize their business potential.

Introduction to the Web Application

GYMLY is a web-based gym management system that makes daily duties simple and efficient for clients (users), trainers, and gym personnel. Customers can personalize their packages using the system by selecting the trainer and time slots they desire. To receive all these advantages, users must register with the GYMLY Gym Management System. Clients and customers can reserve training sessions with the instructor or trainer they select and add their available time slots by logging into the system using their credentials.

User profiles and logins are managed under User Management. Here, user profile creation, retrieval, edition, and deletion can be done. The user Manager (Admin) can check the users and delete them. There is a BMI calculation process in this system, which is AI-based, to give users health instructions and supplement recommendations.

GYMLY provides mainly two types of packages for their clients, namely: standard packages and promo packages. These packages are maintained by the Membership Manager, and this process is performed under Membership Package Management. The standard package has 3 subcategories: platinum, gold, and silver, which categorize based on the number of days. The membership manager can edit these packages. Promo packages are created for promotion seasons and are valid for a certain period. When its valid period ends, the manager can delete the promo package.

When the customer selects the required package, the system navigates to the payment interface. There, the customer must fill in all the details that are required and submit them. Then all the entered data is saved in the database. In this process, the customer gets a code for his or her number or email. Here, verification and the validation process take place. Then a token was issued to the customer to take the membership. Membership options will be offered as monthly and annual packages, with features and benefits tailored to the specific needs of each user. Financial reports can be viewed, downloaded, and deleted by the payment manager (Admin) when he logs in with his or her credentials. Financial reports can be created, retrieved, edited, and deleted.

We provide the ability for customers to view supplements and purchase them. Both users and administrators can view the supplement orders. Users can edit the orders, and if they want, they can delete the order as well. Admins can generate reports to see the supplement order list.

The GYMLY gym management system was developed to give customers and staff members a satisfying experience in the fitness industry. It entails managing suppliers, stocks, customer feedback, staff registration, chat messaging, Google login, and an AI-powered BMI calculator. The customer service manager has the authority to accept or reject client input, while stock management examines and creates stock payment reports monthly. An AI-powered BMI calculator and Google authentication are used to manage employee enrollment.

Problem and Motivation

PROBLEM

We researched some Online Gym Management systems such as Cross Fit, Planet Fitness, Livestrong, and LA Fitness and gathered information by contacting some other gyms as well. Then we realized many issues and problems currently exist in such systems and this causes inefficiency in many related sectors in the gym. Main activities/ tasks carried out manually at the gym such as managing members, trainers, client requests, payments, workouts, supplement sales, and stocks. Also, we identified that most customers are unaware of their gym. we noticed that there was no proper mechanism to ensure smooth communication between customers and trainers and this would highly affect the satisfaction of customers. The current management of the gym has given rise to numerous issues with efficiency and time wastage.

Some of the major concerns that have to be contemplated on are listed as follows:

- There is no proper mechanism to inform the users of the gymnasium's services and package details, therefore, there is poor customer acknowledgment.
- There is difficulty in creating workout schedules and there is no way to inform users about the availability of the trainer also users cannot schedule a training session with the trainer according to their preference.
- Records of the supplement stocks and sales must be kept manually.
- Customer feedback also plays an important role in the growth of a business. Even though the owner receives opinions from close customers, this may be biased as there is no mechanism to collect overall feedback, causing the gym to rely on false assessments.
- There is no proper maintenance in the management of members, trainers, and employees as records must be kept manually. Therefore, there are difficulties in handling paperwork for employee and member registrations.
- Failure to share issues related to exercises and receive guidance without face-to-face interactions as there is an inability to evaluate trainer performance and progress without a proper feedback system.
- Complications and issues aroused when assigning and managing employee salaries.
- Very low efficiency in work and wastage of time.

Through the above, the necessities of the gym will be fulfilled, and the following benefits can be achieved.

- A web-based application will increase efficiency.
- Convenient to use and user-friendly.
- Easy access to the system from anywhere at any time
- Easy to manage all users and manipulate system information.
- Fast access to information, therefore, reduces time consumption.
- Maintenance requires less effort.

MOTIVATION

In today's rapidly evolving business landscape, technology plays a vital role in streamlining workflows, reducing costs, and enhancing productivity. As such, many companies and organizations are embracing new technologies to automate their processes, optimize performance, and reach a wider audience. In this context, we have developed a comprehensive GYMLY system designed to help gyms automate their workflows and reduce the need for human intervention.

By leveraging cutting-edge technologies, the GYMLY system helps gyms improve productivity and reduce costs while enhancing the user experience. With the aid of online supplement stores, gyms can easily maintain a supplement store without the need for a physical store, enabling them to expand their operations and reach a wider customer base.

Moreover, GYMLY enables users to register for the gym and make payments online, without having to interact with gym employees. This feature eliminates the need for long queues, saving users valuable time and enabling them to quickly access the gym facilities. Additionally, the online supplement store helps users reduce extra costs associated with selecting and purchasing supplements, further enhancing the value proposition of the system.

In summary, GYMLY represents a significant advancement in the field of gym management, leveraging the latest technologies to improve efficiency, reduce costs, and enhance the user experience. Its broad range of features and functionalities make it a valuable tool for gyms looking to streamline their operations and improve their bottom line.

LITERATURE REVIEW

We conducted a literature review on similar websites such as CrossFit, Planet Fitness, and Livestrong to compare with our web application's functions. We found that most websites have user and payment management functions. Customer affairs management, package management, and training schedule management functions were also common. However, employee and supplier management functions were not found on most websites. Supplement management function was found in only a few websites. We identified areas for improvement and focus based on the comparison.

Table 2 - literature review

Functions	GYMLY	CrossFit	Planet Fitness	Livestrong	LA Fitness
User account management	✓	✓	✓	✓	✓
Employee management	✓	✓	✗	✓	✓
Customer affairs management	✓	✓	✓	✓	✓
Supplier management	✓	✗	✗	✗	✗
Package management	✓	✓	✓	✓	✗
Supplements managements	✓	✗	✗	✓	✗
Payment management	✓	✓	✓	✓	✓
Training Schedule	✓	✗	✗	✗	✗

AIMS & OBJECTIVES

Aims

- The purpose of a gym management system is to give gym owners and managers a thorough and effective platform so they can simply manage their gym's operations, automate administrative activities, and give their members a great experience.
- Effective Member Management: To keep track of the members' personal data, membership plan, attendance, billing, and renewals. A huge number of users should be able to access this system.
- Class Scheduling and Management: To make it possible for the gym staff to plan and oversee the many classes available to members. The system ought to support scheduling for certain classes, instructors, spaces, tools, etc.
- Resource management: Keeping track of the gym's supplies, consumables, and equipment. When these resources need to be replaced, the system ought to be able to monitor their use and notify the employees.
- Billing and payments: To automate the billing procedure and make sure that members receive accurate invoicing based on their membership plans and usage. Several payment methods should be supported, and the system should keep track of payments and balances.
- Performance Monitoring: Monitoring the development of members by keeping track of their physical fitness objectives, measurements, and exercise schedules. Additionally, the system must offer statistics and data to guide managers and trainers in making wise choices.
- Schedules, compensation, and performance of the gym personnel are all under the management of the staff. Also, the system should support teamwork and communication among employees.
- Member Engagement: To give members a forum for communication with one another and the gym staff. Members should be able to receive information, promotions, and events from the gym via the system.

Objectives

- Depending on the requirements and aims of the gym or fitness center, the goals of a gym management system can change. Nonetheless, the following are some typical goals of a gym management system.
- Simplify membership administration: The gym management system should make it simple to sign up for and renew memberships, as well as track membership information like payment standing and type.
- The system should make it easier for gym personnel to plan classes and appointments, track attendance, and make any schedule adjustments.
- The system should make it possible for gym personnel to schedule trainers and other staff members, as well as to keep track of their availability and hours spent.
- Effective management of the equipment: The system should enable the gym personnel to monitor the use and upkeep of the equipment and to send out warnings when maintenance or repairs are required.
- Boost member communication: The system should make it possible for members to communicate, such as by providing alerts about schedule changes, class cancellations, or special events.
- To assist gym owners in making wise decisions and enhancing performance, the system should include comprehensive analytics and reporting that include tracking member attendance, income, and expenses.

A gym management system's main goals are to boost operational effectiveness and efficiency, improve the member experience, and eventually boost revenue and profitability.

SOLUTION OVERVIEW

Online platform for all stakeholders of the gymnasium

- It would be much easier if there was an online platform for all stakeholders including users, trainers, and all gym staff members to interconnect. In our product, we have provided a proper mechanism for users and gym staff including trainers to provide the services. So, we assure proper customer acknowledgment.

Online interface for users to schedule training.

- There is no interface for both trainers and users to interact with in current systems. In our product, we have provided a platform for users to schedule their training with preferred trainers according to their availability. Trainers also have facilitated the addition of their available time slots to the system.

The customer feedback system for evaluating trainers.

- As customer feedback plays an important role in the growth of a business, we have provided a mechanism to collect customer feedback to evaluate trainers through our system. Users can rate their trainers and provide feedback regarding them. So that, users can get an idea about trainers before choosing them as their trainers.

Supplement the store with a dedicated manager to handle stocks.

- We have facilitated gym users to buy their required supplements by ordering via the system. And there is a dedicated manager for handling the supplement stock-related tasks. So, no need of keeping supplement stock records and supplement sales manually, as all those manage through our system.

Dedicated manager for handling all package-related tasks.

- As the current systems display only static content - when required, package details has to change by editing the code. But in our product, all these package-related tasks are handled by a manager. He can change the details and after submitting it, in the whole system that package detail will be updated. Also, we have facilitated the creation of new promo packages in special seasons, with edit and delete options.

Option for managing employee salaries.

- As there are a lot of issues in assigning and managing employee salaries, we provided an option for managing employee salaries. Therefore, no need to use third-party applications and services for the salary management of employees.

Online database for real-time updates and backups

- In our product, gym staff will no longer want to keep all related records manually and handle the paperwork for user registrations. We have used an online cloud-based database with real-time updating and concurrent updates.

METHODOLOGY

1. Requirements Gathering: In this phase, the project team will meet with stakeholders to gather and document the requirements for the gym management system. The stakeholders may include gym owners, gym staff, and gym members. The project team will ask questions to understand their pain points and challenges with the current system and gather their requirements for the new system. The team will document these requirements in a detailed requirements document to ensure that all parties have a clear understanding of the project scope and objectives.
2. Analysis and Design: In this phase, the project team will analyze the requirements gathered in the previous phase and design the system architecture, database schema, user interface, and functionality. The team will create use cases and flowcharts to depict the system's behavior and identify any potential bottlenecks or issues. The design phase is critical to the success of the project, as it sets the foundation for the system's development and ensures that the system is user-friendly, efficient, and scalable.
3. Development: In this phase, the project team will develop the gym management system using the design and specifications created in the previous phase. The team will use an agile development methodology to ensure that the system is developed in iterations, with each iteration delivering a working product. The team will conduct unit testing and integration testing to ensure that the system is of high quality and reliability. The team will also work closely with stakeholders to gather feedback and ensure that the system meets their requirements.
4. Deployment: In this phase, the project team will deploy the gym management system in the production environment and ensure its smooth operation. The team will provide training to the gym staff and members on how to use the system. The team will also conduct user acceptance testing to ensure that the system meets the stakeholders' expectations. The team will closely monitor the system's performance and fix any issues that arise.
5. Maintenance: In this phase, the project team will provide ongoing maintenance and support for the gym management system. The team will fix any issues that arise and implement new features and enhancements based on feedback from gym owners, staff, and members. The team will ensure that the system is up to date with the latest technology and that it remains user-friendly and efficient. The team will also monitor the system's performance to ensure that it meets the stakeholders' expectations.

TOOLS AND TECHNOLOGIES

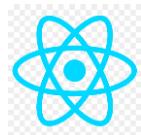
We use the MERN stack for developing our web application. MERN is a combination of 4 technologies: MongoDB, Express JS, React JS, and Node JS.



MongoDB is a document database used to build highly available and scalable internet applications. With its flexible schema approach, it's popular with development teams using agile methodologies [11].



Express is a minimal and flexible Node.js web application framework that provides a robust set of features for web and mobile applications [12].



React is a declarative, efficient, and flexible JavaScript library for building user interfaces [13].



Node JS is a single-threaded, open-source, cross-platform runtime environment for building fast and scalable server-side and networking applications [14].

Apart from MERN Stack we use following tools and technologies in our project.



Visual Studio Code is a streamlined code editor with support for development operations like debugging, task running, and version control [15].



GitHub is a code hosting platform for version control and collaboration. It lets us to work together on projects from anywhere.

THE STRUCTURE OF THE PROJECT

SECTION 1:

The first section of the report describes the difficulties of the manual system and as a solution how the system should support, and the deliverables expected by the users of the system.

SECTION 2:

Section two of the report includes Requirement Analysis, Design, Implementation and, Testing. Use case diagrams and Activity diagrams to depict the Requirements Analysis. ER diagram, Class diagram, and Interfaces depict the overall design of the system. The implementation describes module structures and test cases used in the system.

SECTION 3:

Section three includes references used as support to complete the project report successfully.

CHAPTER 2 - REQUIREMENTS

STAKEHOLDER ANALYSIS

The gym management system has several stakeholders who have a vested interest in the project's success. The primary stakeholders are the gym owners who own and operate the gym. They are looking to streamline their operations and increase profitability, which is why they are interested in implementing a gym management system.

The gym staff is also a key stakeholder in the gym management system project. They are the employees who work at the gym and use the system daily. Trainers, receptionists, and cleaners are some of the staff members who will interact with the system. The staff can provide valuable feedback on the system's usability and functionality, which will help the development team make necessary adjustments and improvements.

Gym members are another important stakeholder in the gym management system project. They are the customers who use the gym's facilities and services. Gym members will benefit from the system's ability to provide a more personalized and efficient experience. For example, the system can help members schedule classes, track their workouts, and receive notifications about upcoming events and promotions.

Suppliers are also stakeholders in the gym management system project. They are the vendors who supply the gym with equipment, supplements, and other products. The system can help suppliers track their orders and inventories, which can improve their relationship with the gym and ensure that the gym has the products it needs.

Investors are also stakeholders in the gym management system project. They have invested in the gym and have a financial interest in its success. Investors may be interested in the gym management system as it can help the gym attract and retain more customers, thereby increasing profitability. They will be looking for a return on their investment and may want to see evidence that the system is helping the gym achieve its financial goals.

REQUIREMENTS ANALYSIS

Requirements Analysis for Gym Management System:

User Management:

- The system should allow gym staff to create user accounts for new members.
- The system should provide options for different types of user accounts, such as staff, members, and managers.
- The system should allow users to update their personal information, such as contact details and membership status.
- The system should provide a login and authentication mechanism for users to access the system.

Schedule Management:

- The system should provide a calendar view of the gym's class schedules and available slots.
- The system should allow staff to create and manage class schedules, including adding new classes and updating existing ones.
- The system should provide alerts and notifications for upcoming classes or schedule changes.
- The system should allow users to book or cancel class slots through the system.

Employee Management:

- The system should allow gym owners and managers to add and manage employee accounts.
- The system should provide different levels of access and permissions for employees based on their roles and responsibilities.
- The system should allow managers to assign tasks and monitor employee performance.

Customer Affairs Management:

- The system should allow gym staff to manage customer complaints and feedback.
- The system should provide a record of customer interactions and communications.
- The system should allow staff to respond to customer inquiries and provide support.

Package Management:

- The system should provide different types of membership packages, such as monthly or annual subscriptions.
- The system should allow staff to manage package details, including pricing, duration, and benefits.
- The system should allow users to view and purchase packages through the system.

Payment Management:

- The system should allow users to make payments for gym memberships and other services through the system.
- The system should support different payment methods, such as credit cards or bank transfers.
- The system should provide secure payment processing and transaction records.

Supplement Management:

- The system should allow customers to view supplements.
- The system should allow customers to buy supplements.
- The system should allow staff to request quotes and place orders for new supplies.
- The system should allow staff to record supplement sales made by cashiers and track payment records.

Supplier Management:

- The system should allow gym staff to manage supplier accounts and contacts.
- The system should provide a record of previous orders and transactions.
- The system should allow staff to request quotes and place orders for new supplies.

REQUIREMENT MODELING

Requirement Modeling for Gym Management System:

1. User Management:

- 1.1. The system shall allow gym staff to create user accounts for new members.
- 1.2. The system shall provide options for different types of user accounts, such as staff, members, and managers.
- 1.3. The system shall allow users to update their personal information, such as contact details and membership status.
- 1.4. The system shall provide a login and authentication mechanism for users to access the system.

2. Schedule Management:

- 2.1. The system shall provide a calendar view of the gym's class schedules and available slots.
- 2.2. The system shall allow staff to create and manage class schedules, including adding new classes and updating existing ones.
- 2.3. The system shall provide alerts and notifications for upcoming classes or schedule changes.
- 2.4. The system shall allow users to book or cancel class slots through the system.

3. Employee Management:

- 3.1. The system shall allow gym owners and managers to add and manage employee accounts.
- 3.2. The system shall provide different levels of access and permissions for employees based on their roles and responsibilities.
- 3.3. The system shall allow managers to assign tasks and monitor employee performance.

4. Customer Affairs Management:

- 4.1. The system shall allow gym staff to manage customer complaints and feedback.
- 4.2. The system shall provide a record of customer interactions and communications.
- 4.3. The system shall allow staff to respond to customer inquiries and provide support.

5. Package Management:

- 5.1. The system shall provide different types of membership packages, such as monthly or annual subscriptions.
- 5.2. The system shall allow staff to manage package details, including pricing, duration, and benefits.
- 5.3. The system shall allow users to view and purchase packages through the system.

6. Payment Management:

- 6.1. The system shall allow users to make payments for gym memberships and other services through the system.
- 6.2. The system shall support different payment methods, such as credit cards or bank transfers.
- 6.3. The system shall provide secure payment processing and transaction records.

7. Supplement Management:

- 7.1. The system shall allow customers to view supplements.
- 7.2. The system should allow customers to buy supplements.
- 7.3. The system should allow staff to request quotes and place orders for new supplies.
- 7.4. The system should allow staff to record supplement sales made by cashiers and track payment records.

8. Supplier Management:

- 8.1. The system shall allow gym staff to manage supplier accounts and contacts.
- 8.2. The system shall provide a record of previous orders and transactions.
- 8.3. The system shall allow staff to request quotes and place orders for new supplies.

CHAPTER 3 - DESIGNING AND DEVELOPMENT

Union Diagram of Actors

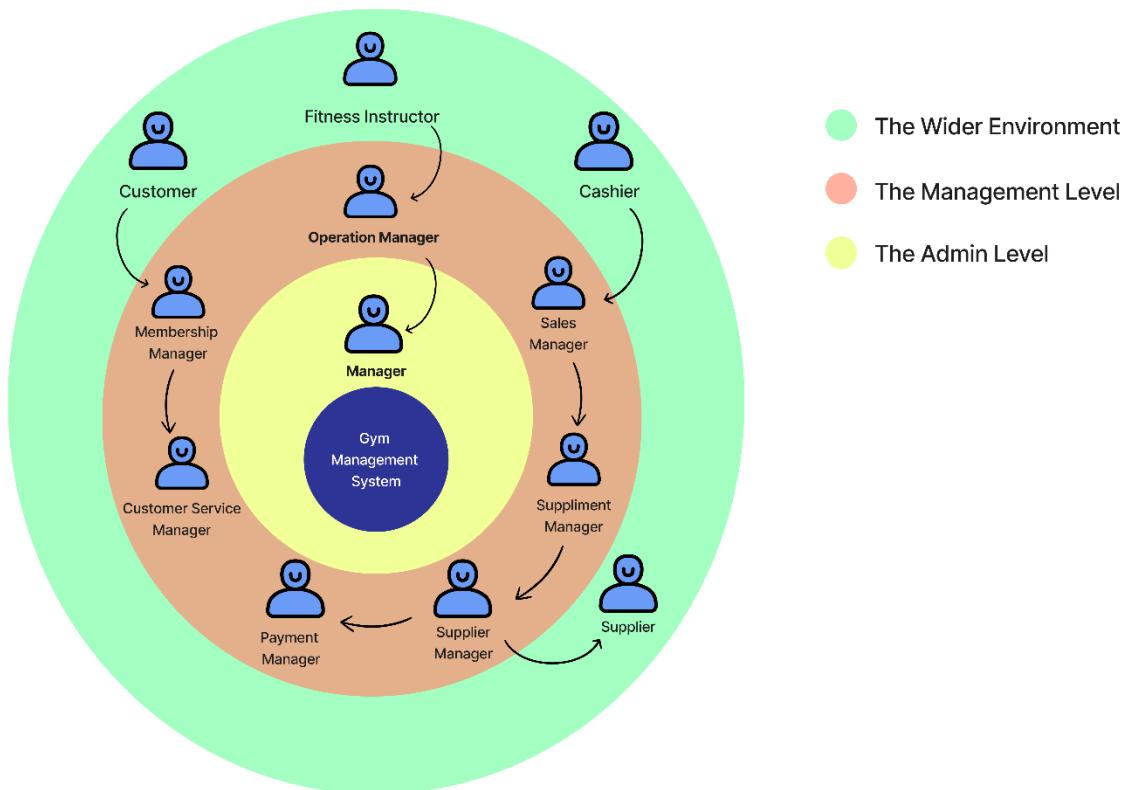


Figure 2.1 - Union Diagram

DIAGRAMS OF COMPONENTS

Training Schedule Management – IT21377280

This system manages all the schedule-related tasks in the Gymly System. Under this section, not only users are facilitated with the flexibility to manage their fitness schedules based on their availability and preferences, but also, they are allowed for modifications and adjustments whenever they are needed.

Use Case Scenario of Training Schedule Management

Table 3 - Training Schedule Usecase scenario

Name	Trainee Schedule Management	
Summary	Schedule the trainee times slots by the user.	
Priority	01	
Pre-conditions	The user must pay for that selected package	
Post-conditions	The user can check the trainee timetable as a report.	
Primary Actors(s)	Registered User	
Trigger	User-selected fitness instructor confirms the user's schedule.	
Main Scenario	Step	Action
	1	Visit the Scheduling user training plan site.
	2	The user checks the available time slot to schedule training.
	3	The user chooses the fitness instructor and trainee time slot.
	4	The user enters the payment token number.
	5	The user clicks on the “Submit” Button.
	6	If the payment token number is valid, the system shows the alert as “Scheduling successful”.
	7	When the user clicks “ok” on the alert, the user prompts to the scheduling timetable page.
	8	The system shows “Edit” and “Cancel” options with all day that has training.
	9	If the user wants to reschedule some days or change fitness instructor, can click on the “Edit” button.

	10	The system directs the user to edit the page with existing data.
	11	The user can edit time slots without any request and click on submit.
	12	If the user wants to edit the fitness trainer, must add the reason, and select the requested fitness trainer name.
	13	When the manager has confirmed the request, the system notifies the user.
	14	Meanwhile, the system shows the existing timetable that has training time slots.
	15	If the user wants to delete someday training, can click on the “Request to Cancel” button.
	16	When the user sends cancel training, the manager should confirm.
	17	If the user does not cancel before one day, the system will decrease the user's package day count by one as usual.
Extensions	Step	Action
	6a	If the payment token number is invalid, the system shows the alert as “Scheduling Unsuccessful. Please enter the valid token number that you have paid”.
	6b	When the user clicks “ok” on the alert, the system refreshes the scheduling page.
Open Issues	1	The manager should confirm to change the fitness trainer.

Use case diagram of Training Schedule Management.

Link for high-resolution diagram:

<https://drive.google.com/file/d/1SsSZmy4ggoXHcomSvkIzC0v-ggUtvusp/view?usp=sharing>

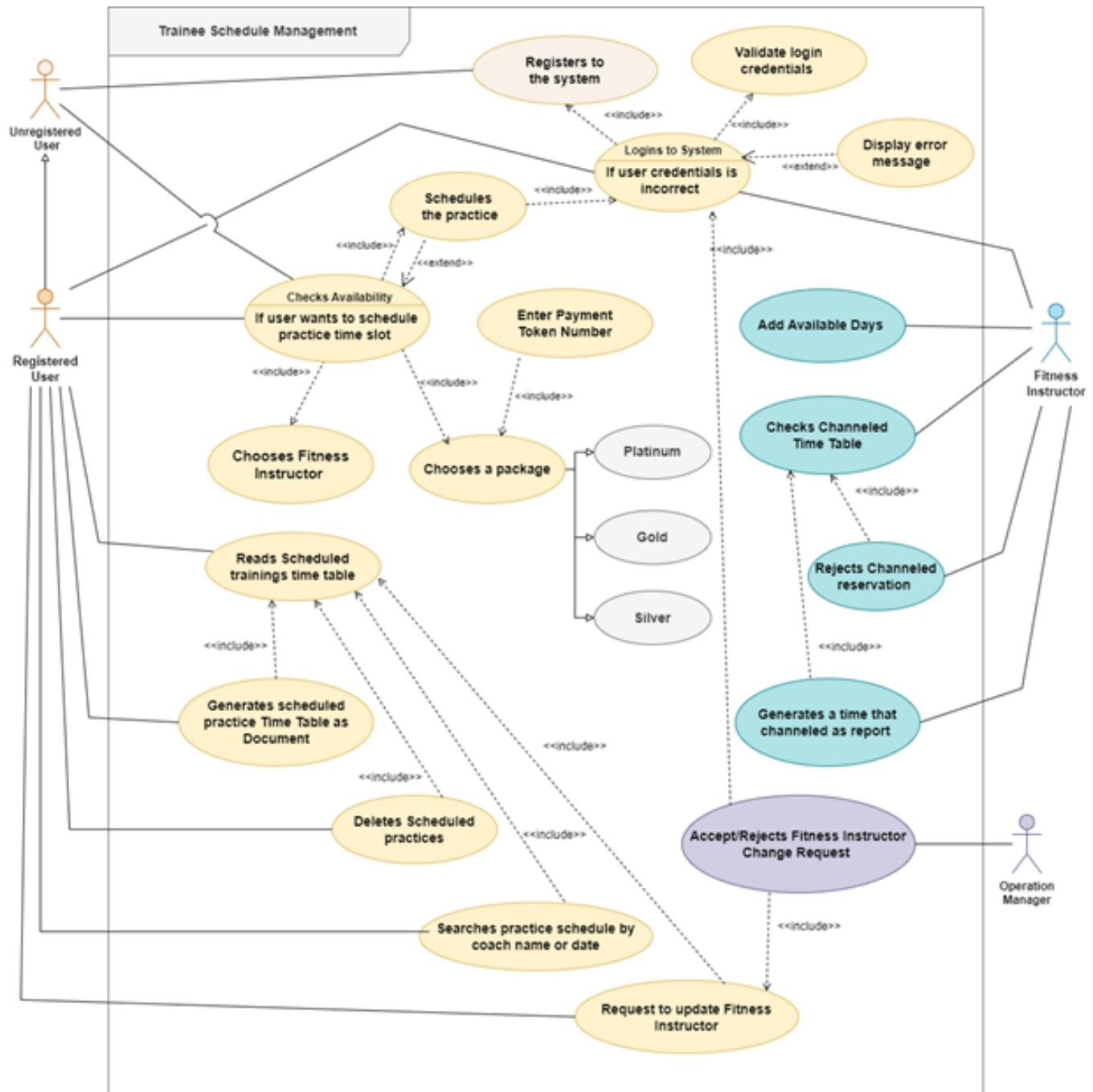


Figure 3.1 - Training schedule Management Usecase Diagram

Activity diagram of Training Schedule Management.

Link for high-resolution diagram:

<https://drive.google.com/file/d/1JW3CL16Hy9Pkwdjog0cJ0Uwy5U8paxUJ/view?usp=sharing>

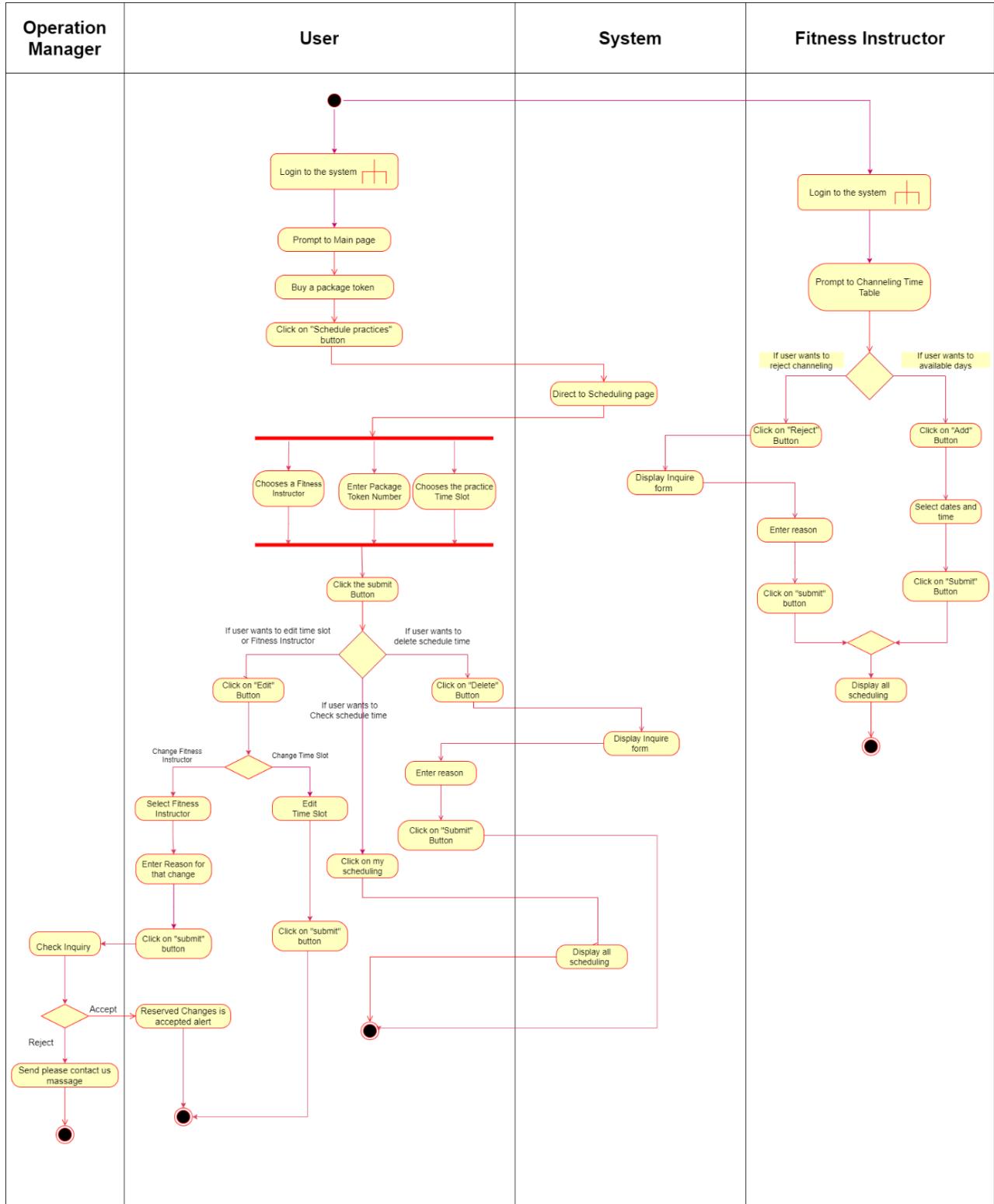


Figure 3.2 - Training Schedule Management Activity Diagram

Sequence diagram of Training Schedule Management.

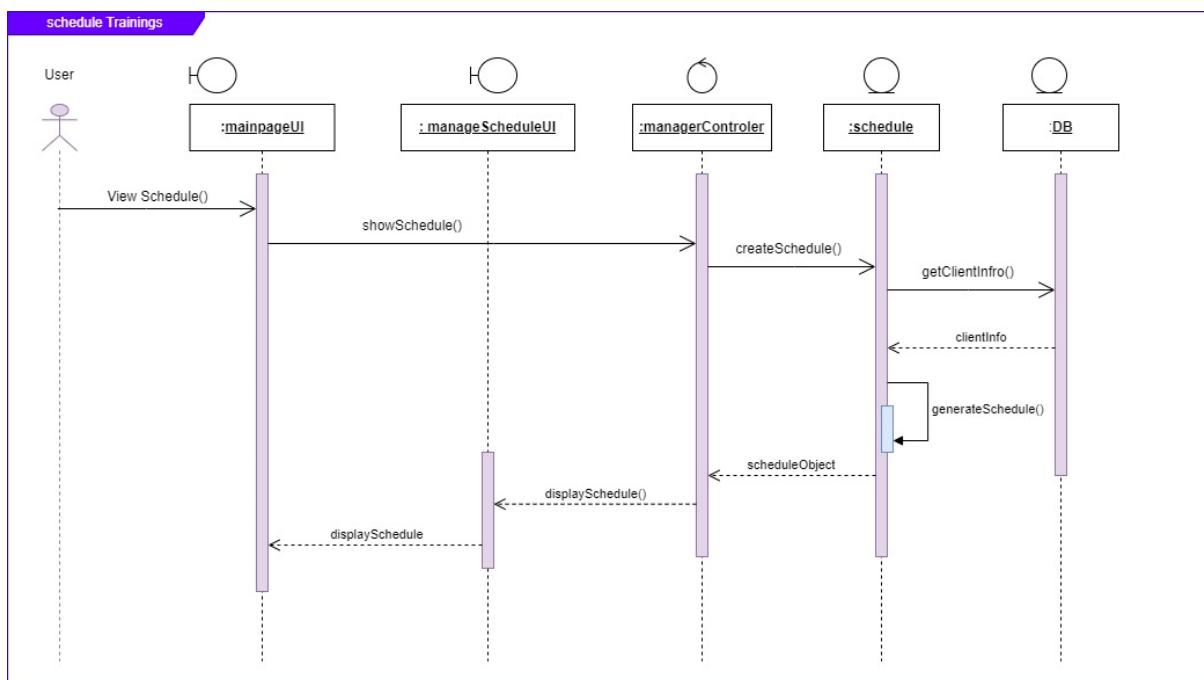


Figure 3.3 - Training Schedule Management Sequence Diagram

User Management - IT21281778

User management section provides functions to gym users to get familiar with the GYMLY system and get in touch with the gym easily. There are 3 main users under this section including unregistered user, registered user and user manager. The User Manager has the control of all users of the system, and he is responsible for all users and user data. Also, the user manager can manage users who have registered to the system. Registered users can manage their account anytime using the system. Unregistered users only can register to the system. Users can navigate through their functions using the user dashboard.

Use Case Scenario of User Management

Table 4 - User Management Use Case Scenario

Name	Unregistered user register to the System	
Summary	Unregistered users visit the website of the GYM and go to the Registration option. Unregistered users fill out the form and pay an admission fee.	
Priority	02	
Pre-conditions	The user should be an unregistered user	
Post-conditions	The user gets a receipt for a payment and registration details report	
Primary Actors(s)	Unregistered user, Admin	
Trigger	The user registers to the system.	
Main Scenario	Step	Action
	1	Unregistered user visit to the home page of the website
	2	Unregistered user checks the website and find button to register
	3	Unregistered user clicks the button
	4	Unregistered user redirects into the registration form
	5	Unregistered user starts filling form
	6	Unregistered user enters add his email
	7	Unregistered user chooses username

	8	After filling form unregistered user mark the check and agree with conditions and policies
	9	Unregistered user clicks next page button
	10	Unregistered user redirect into the make admission fee page
	11	Unregistered user Select the payment method
	12	Unregistered user fill payment details form
	13	Make a payment
	14	Unregistered user click submit button
	15	User gets a receipt for a payment and registration details report
	16	Admin approves new user registration to the system as a registered user
Extensions	Step	Action
	3a	If button is not working, refresh the web page.
	6a	If email is already used, the System shows email is already exited.
	7a	If the username is already taken by another user, the system shows the message to create another username
	8a	If the Unregistered user does not mark the check box, the System does not allow to go to the next page
	11a	If there is no payment method which Unregistered user use to make a payment, Unregistered user contact gym management
	13a	If make payment is not success. Unregistered user Check payment details again
	16a	If admin has not declined new user, the System send a message to that user

Use case diagram of User Management.

Link for high-resolution diagram:

https://drive.google.com/file/d/13t_28YFwzWt81Z1OvSFcjK9ROEdtQyPk/view?usp=sharing

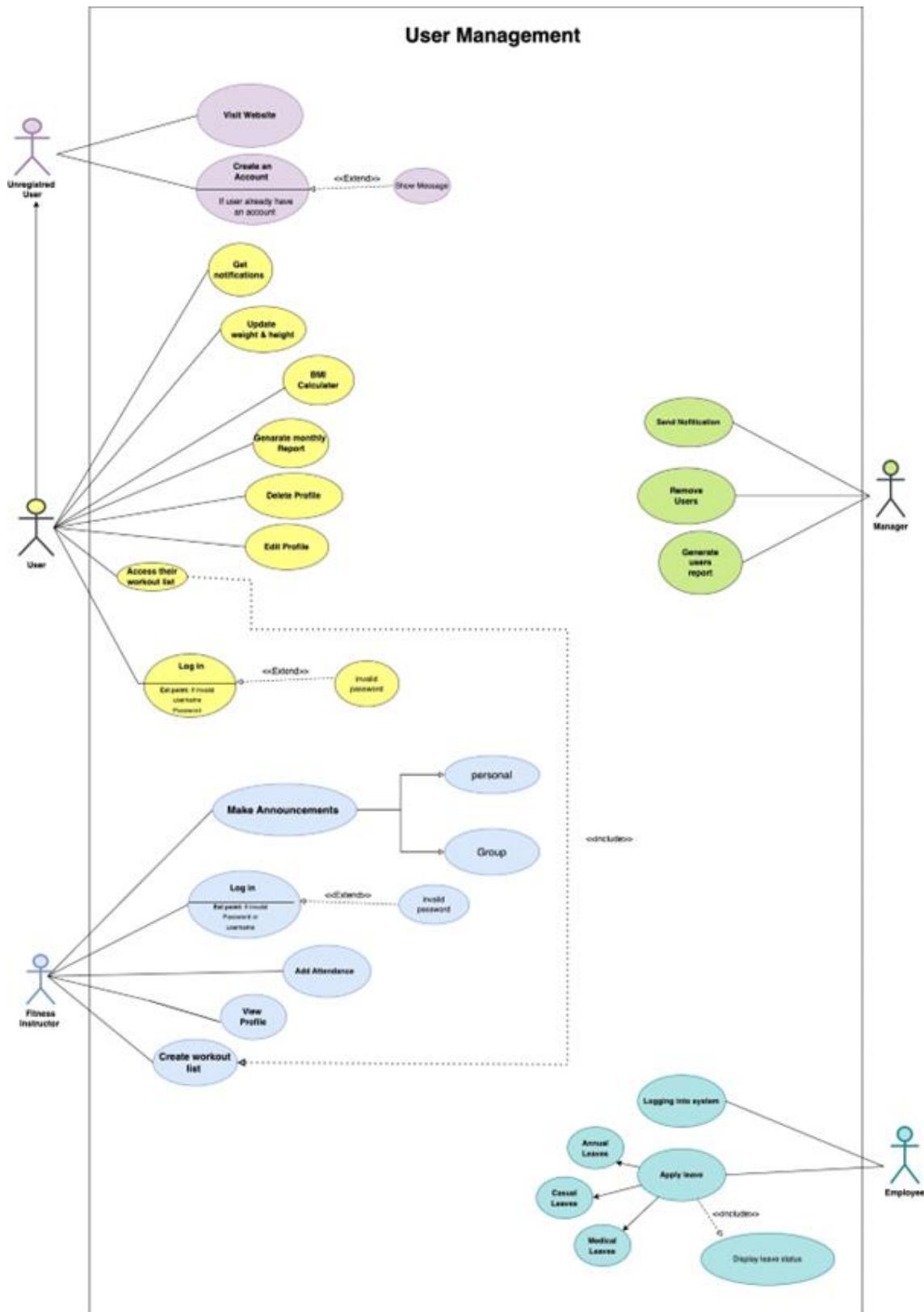


Figure 3.4 - User Management Usecase Diagram

Activity diagram of User Management.

Link for high-resolution diagram:

https://drive.google.com/file/d/18RIKVn7txrQEn0Kgs6Tv4njYG1JJ6_5U/view?usp=sharing

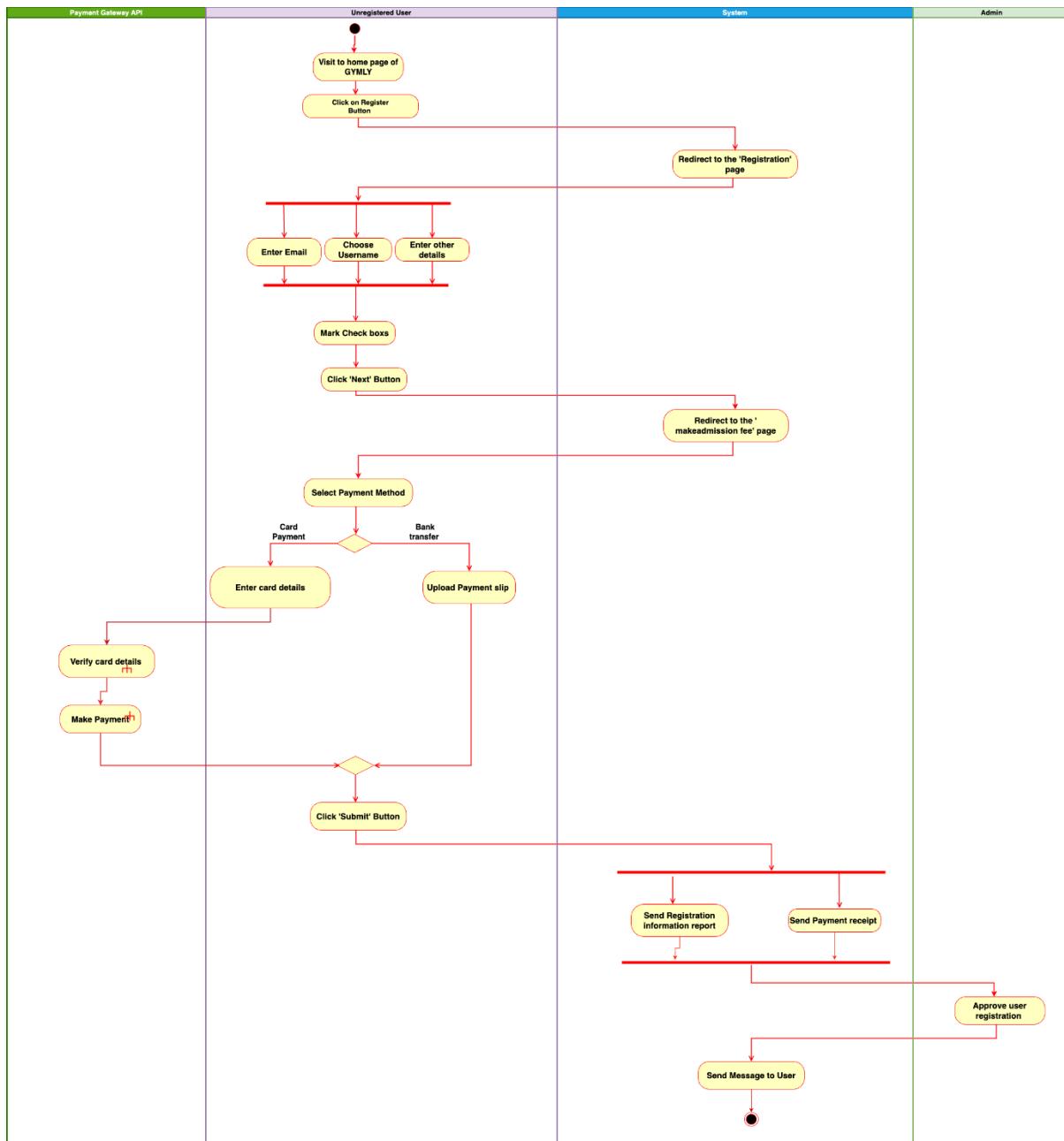


Figure 3.5 – User Management Activity Diagram

Sequence diagram of User Management.

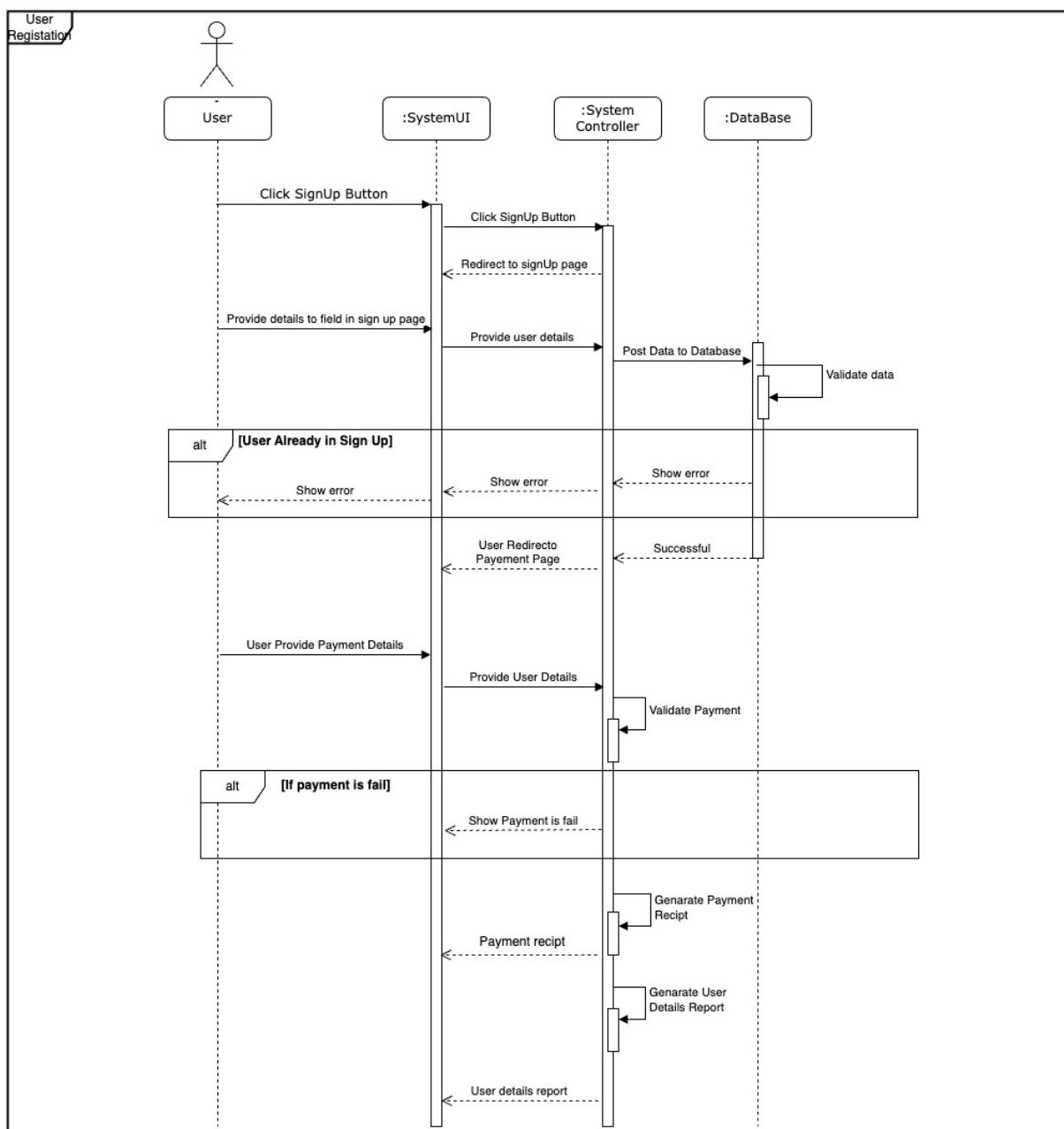


Figure 3.6 – User Management Sequence Diagram

Customer Affairs Management - IT21489914

When analyzing the problems in current gym management systems, we found that there's no way to collect user feedback regarding their fitness instructors and the services provided by the gym. Therefore, gym owners cannot get an exact idea about how their customers think about fitness instructors and the services provided by the gym. As a solution for that customer affair management system is included in our system.

Use Case Scenario of Customer Affairs Management

Table 5 - Customer Affairs Management usecase scenario

Name	Submit feedback form	
Summary	The user submits the feedback form	
Priority	03	
Pre-conditions	The user has access to the system	
Post-conditions	The user gets the successful message for the feedback form submission	
Primary Actors(s)	Registered User	
Trigger	The user has chosen to fill in and submit the feedback form	
Main Scenario	Step	Action
	1	The user clicks the “Feedback” button
	2	The system displays the feedback options
	3	The user selects the feedback option(fitness instructor feedback, service feedback)
	4	The system displays the feedback form
	5	The user enters his/her private email
	6	The system checks the validity of the email
	7	The user enters his/her feedback
	8	The user clicks the “Submit” button
	9	The system displays a success message to the user
Extensions	Step	Action
	5a	If the entered email of the user is invalid, the system asks the user to re-enter a valid email

	8a	If the feedback section is empty, the system avoids the form submission and asks the user to fill in the feedback section in order to perform the form submission
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Use case diagram of Customer Affairs Management.

Link for high-resolution diagram:

https://drive.google.com/file/d/1ZvtgL196cm5_BWVzLF7PeImtYJO--ayc/view?usp=sharing



Activity diagram of Customer Affairs Management.

Link for high resolution diagram:

<https://drive.google.com/file/d/1CBXrrIic9CSVSFnf3KYUFPMlsLuFisHV/view?usp=sharing>

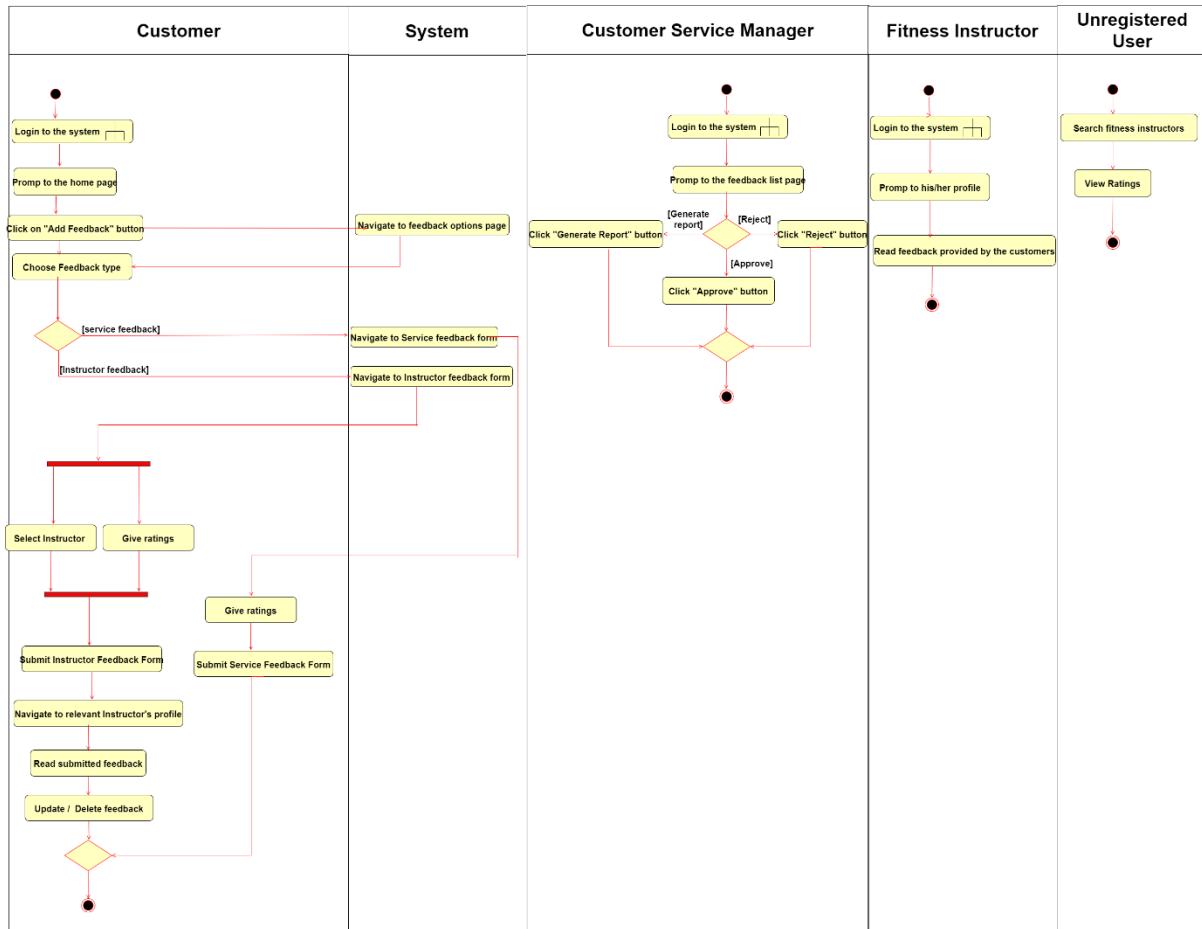


Figure 3.8 – Customer Affairs Management Activity Diagram

Sequence diagram of Customer Affairs Management.

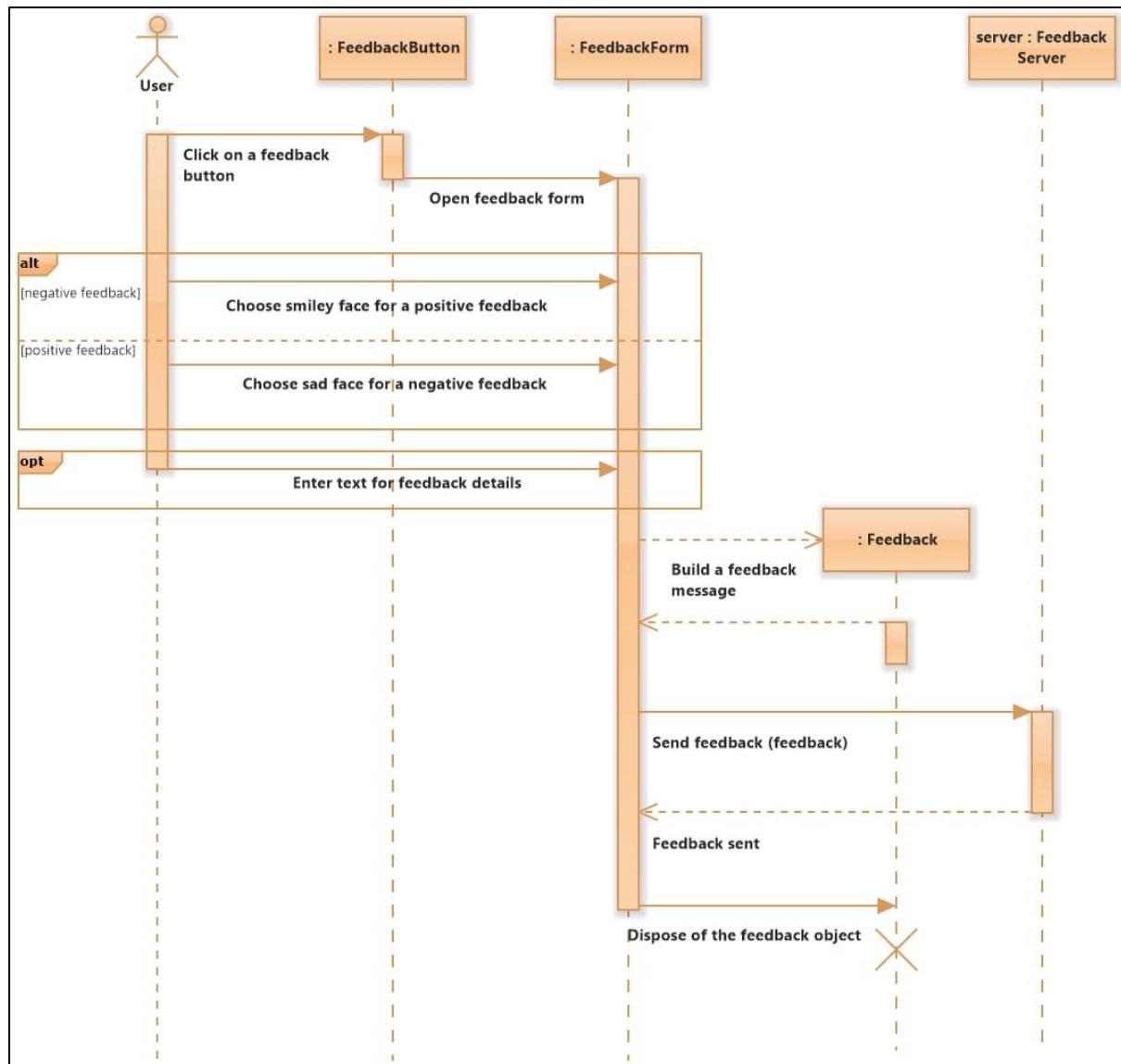


Figure 3.9 – Customer Affairs Management Sequence Diagram

Package Management - IT21378270

When we were gathering requirements for our gym management system, we identified that there is no way to handle all packages in a gym system. In current systems, all details are displayed as static content and if want to change them, have to change them by editing the source code. But adding a separate system that will ease the work and increase the maintainability of the system. The package management section is handling all package-related tasks in our gym management system.

Use Case Scenario of Package Management

Table 6 - Package Management Usecase Scenario

Name	Manage packages	
Summary	Membership Manager adds a new promo package	
Priority	4	
Pre-conditions	The user must log in to the system	
Post-conditions	The user can add a new promo package	
Primary Actors(s)	Membership Manager, Operation Manager	
Trigger	The user needs to add new promo package	
Main Scenario	Step	Action
	1	Membership Manager login to the system using his login credentials.
	2	Membership Manager goes to the “Standard Packages” page.
	3	The system displays the 3 Standard Packages.
	4	Membership Manager clicks on “Promo Packages” button.
	5	Membership Manager navigates to “Promo Packages” page.
	6	Membership Manager clicks on “Add New Package” button.
	7	System navigates Membership Manager to “Add New Promo Package” page.
	8	Membership Manager can add a package name, package details, package price, package validity time and can choose a cover photo for the new package.
	9	After that Membership Manager clicks on “Add Package” button.
	10	Membership Manager click on “Ok”, when system display “New Package Request Sent Successfully” alert.

	11	Meanwhile Operation Manager also can login to the system using his login credentials.
	12	After navigates to his home page, Operation Manager can clicks on “New Promo Package Requests” and goes to that page.
	13	System displays the received new promo package requests.
	14	Operation Manager can choose a request and can click “Approve” or “Reject” button.
	15	After clicking, system display a alert box and Operation Manager “OK” it.
	16	Operation Manager can click on “generate Report” button and can generate a report of the new promo package requests.
Extensions	Step	Branching Action
	1. a	System check whether entered login credentials are valid or invalid.
	1. b	If entered credentials are invalid, the system will show an error message and ask to re-enter login credentials.
	3. a	When necessary, Membership Manager can edit details and prices of the Standard Packages.
	5. a	If there are any existing promo packages, they will display here as well.
	5. b	Also, can search for the promo package by its name.
	10. a	Then the requests go to Operation Manager for approval.
	10. b	Operation Manager can approve/reject the new promo package request.
	11. a	System check whether entered login credentials are valid or invalid.
	11. b	If entered credentials are invalid, the system will show an error message and ask to re-enter login credentials.
	14. a	If only approves that promo package display on the “Promo Packages” page.

Use case diagram of Package Management.

Link for high-resolution diagram:

https://drive.google.com/file/d/1PdEC3uks24tjUr_TrhliNQDN_JYFXWe/view?usp=sharing

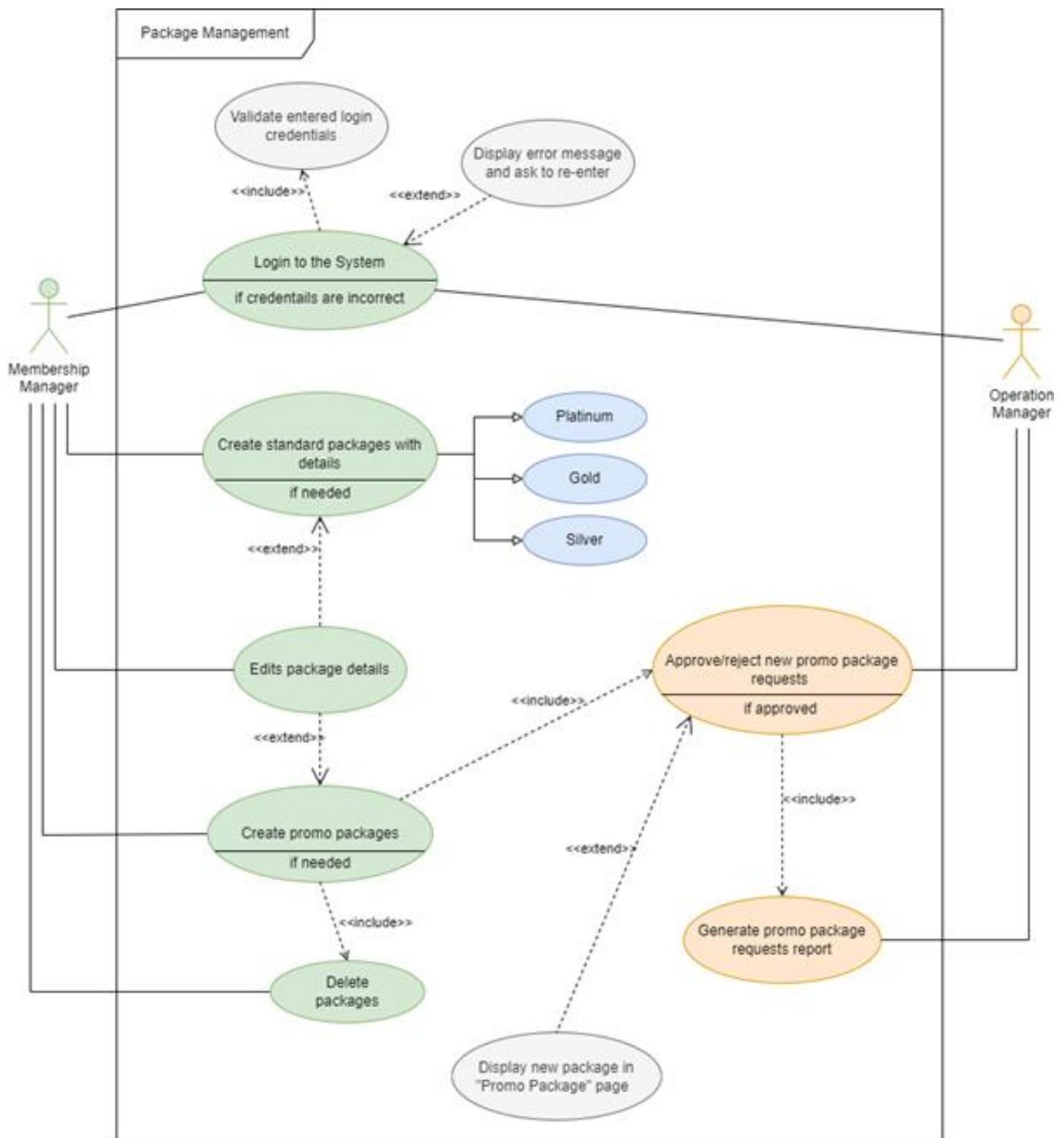


Figure 3.10 – Package Management Usecase Diagram

Activity diagram of Package Management.

Link for high resolution diagram:

<https://drive.google.com/file/d/1VlIRWfiVPouFEvvuSuDrZvzUB--ECQjM/view?usp=sharing>

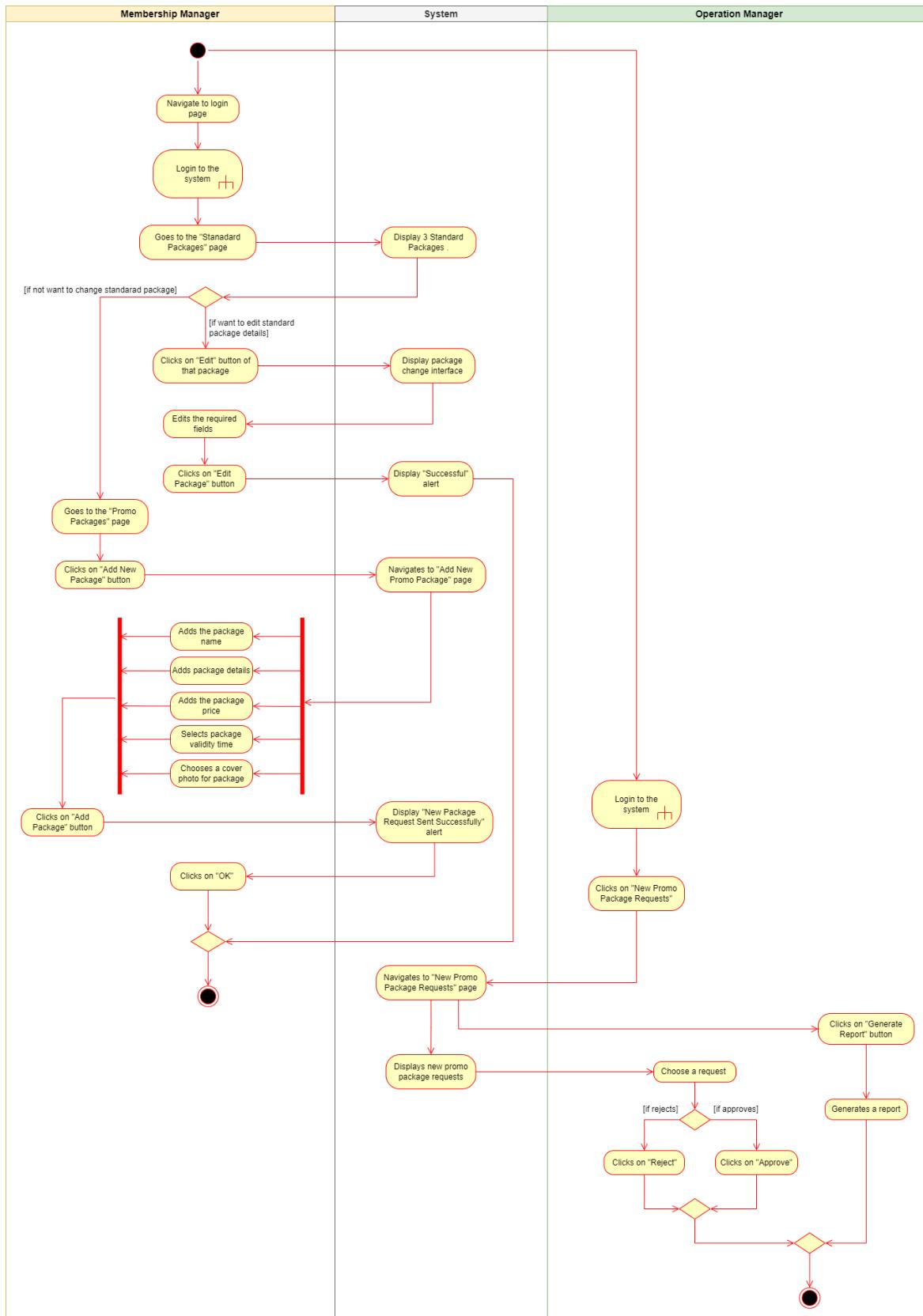


Figure 3.11 – Package Management Activity Diagram

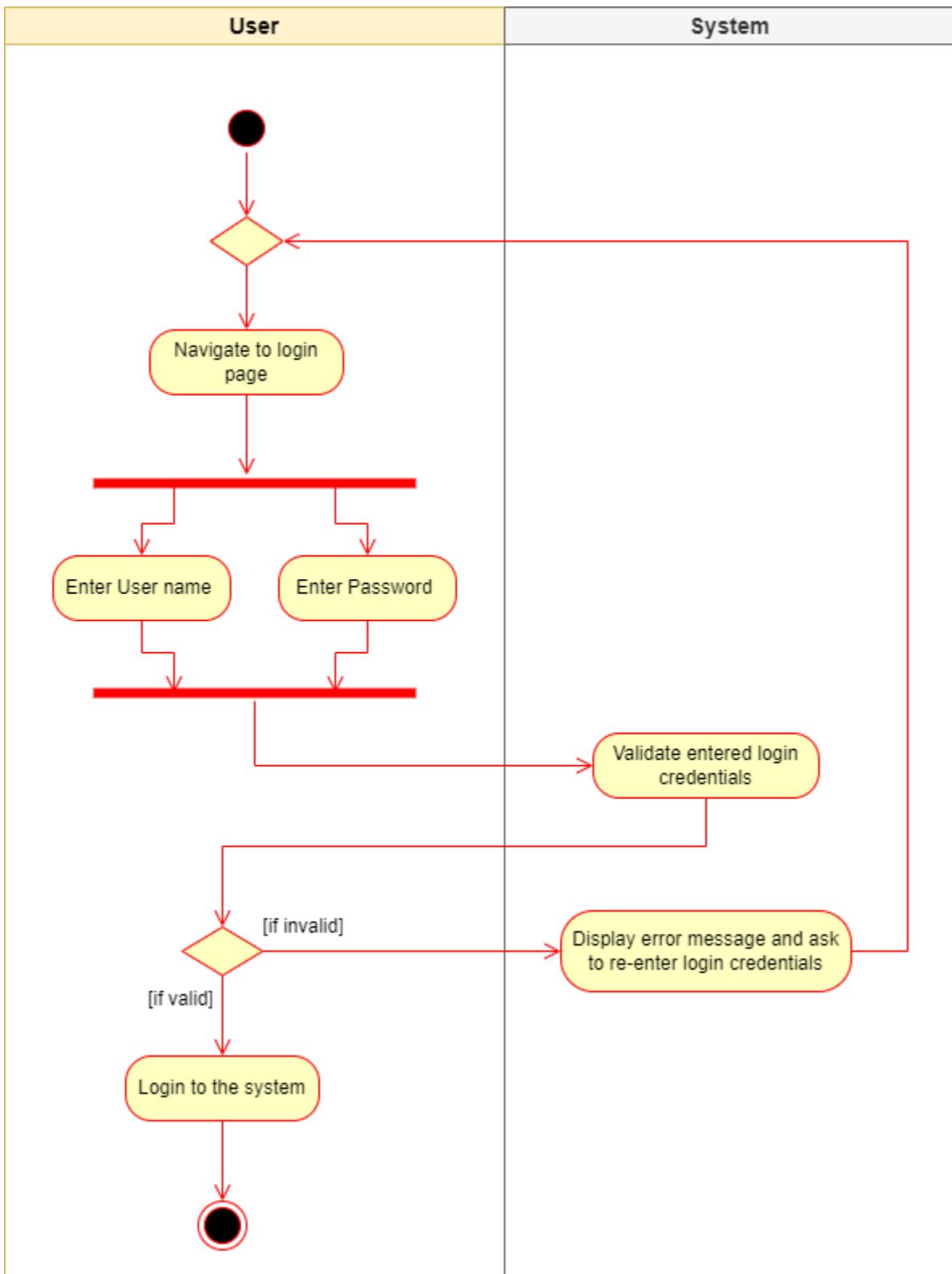


Figure 3.12 – Package Management Activity Diagram (login)

Sequence diagram of Package Management.

[Link for high resolution diagram:](#)

https://drive.google.com/file/d/1HPhWZXnrl1scV_DWaV6xYJV9Crlzc_2W/view?usp=sharing

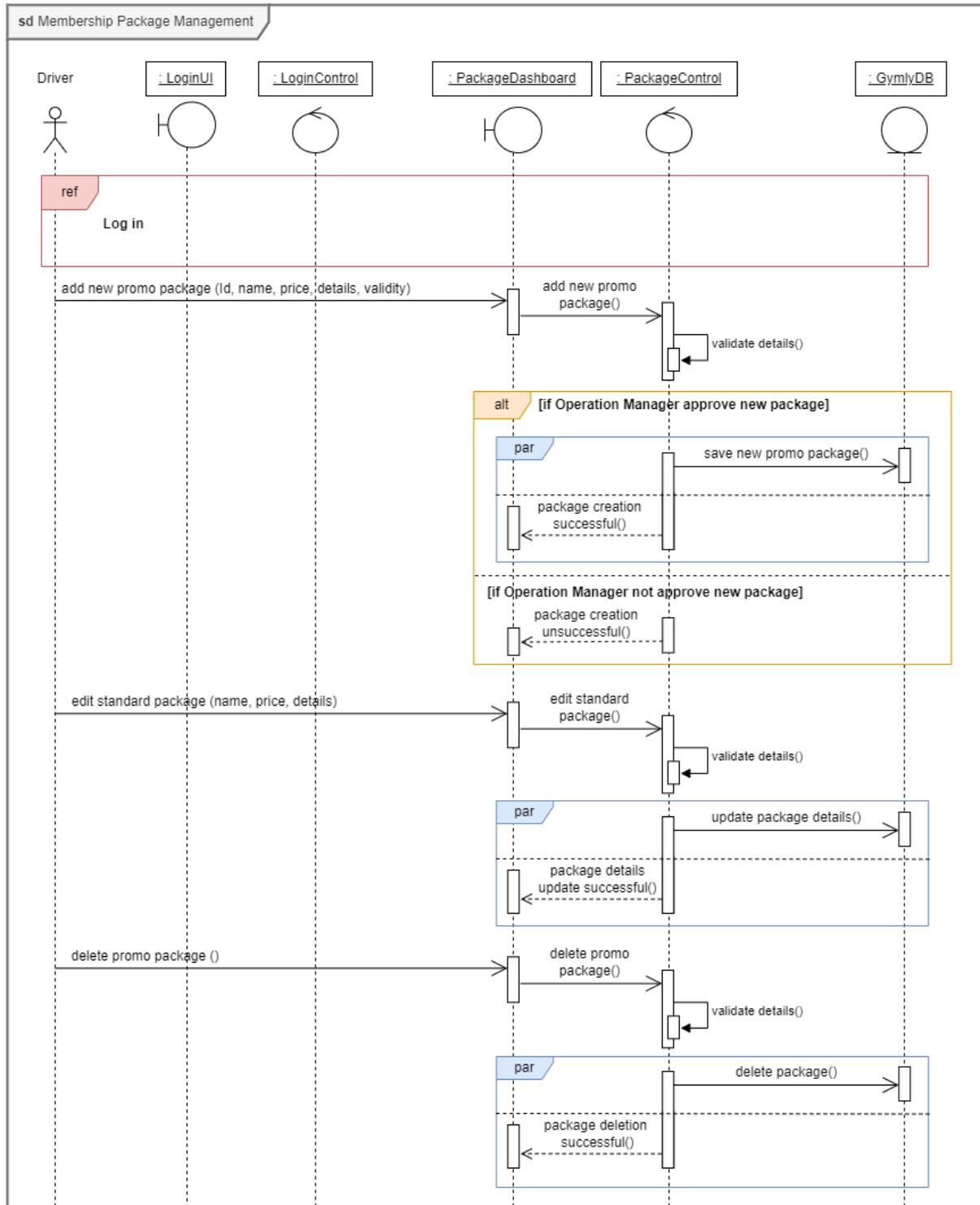


Figure 3.13 – Package Management Sequence Diagram

Employee Management - IT21349560

The employee management section can be identified as another important section in our gym management system. When gathering requirements, we found that an employee management system should be included in our gym management system. This section handles all employee-related tasks in our system including employee registration, leave evaluation, and salary management. The operation manager is the main actor in this section and is the one who has the responsibility to manage all employees of the system.

Use Case Scenario of Employee Management

Table 7 - Employee Management usecase scenario

Use Case ID	GMS-02	
Use Case Name	Register Employee	
Use Case Summary	The operation manager register employee in the system	
Primary Actor	Operation Manager	
Pre-Conditions	The operation Manager should be logged into the system.	
Post Conditions	The employee should receive an email with the registration number	
Trigger	Hiring a new employee to the gym	
Main Success Scenario	Step	Action
	1	The operation manager log in to the system using his username and password
	2	The system validates login credentials by connecting with its user database
	3	The system displays a notification as 'Log in successful'
	4	The system displays the employee management dashboard
	5	The operation manager clicks register employee button
	6	The system displays employee registration form
	7	The operation manager selects the type of employee (Trainer, Cleaner, Manager, etc.)
	8	The system displays relevant fields according to the employee type

	9	The Operation manager enters employee details (Name, Address, NIC, Gender, etc.) and uploads the employee image
	10	The system validates provided details
	11	The operation manager clicks on “register” button
	12	Upon successful validation system stores employee details in the employee database along with a registration number (employee ID)
	13	The system displays a message as successfully registered
	14	The operation manager clicks on “OK” button
	15	The system directs to the employee management dashboard
	16	A record of the newly registered employee which contains two buttons edit and delete is displayed at the top with his details (registration no, name, role, salary, etc.) along with other employee records.
	Step	Branching action
	2a	The system displays the ‘Login failed’ message and asks the user to re-login.
	10a	The system displays ‘Incorrect details’ and asks the user to re-fill the form
	10b	The system displays ‘Please upload images less than 5MB’
	11a	The system displays ‘Please fill out all fields’
	16a	The operation manager clicks the edit button, and the system directs to the update employee page
	16b	The operation manager clicks the delete button and the system asks the reason for removing employee details.

Use case diagram of Employee Management.

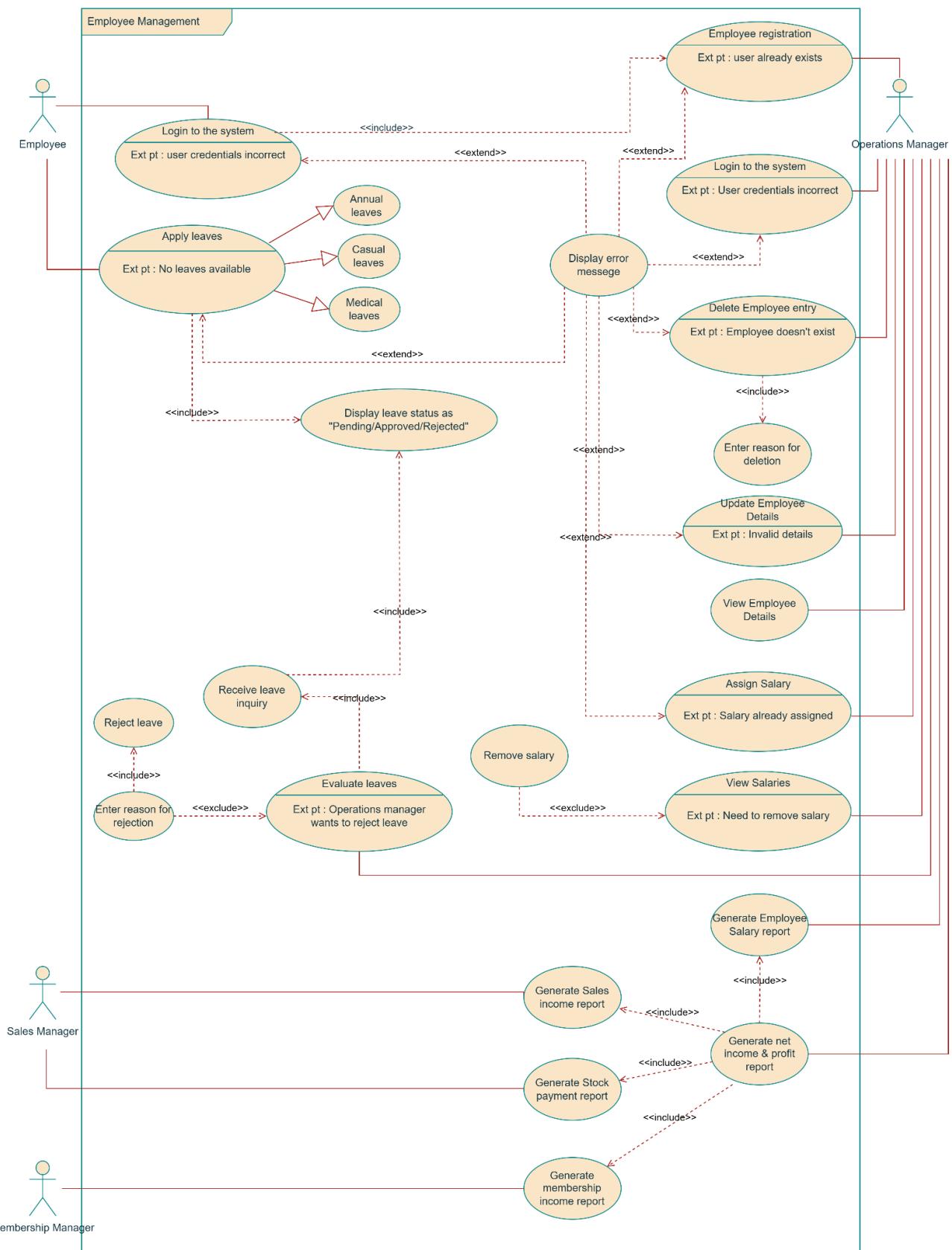


Figure 3.14 – Employee Management Usecase Diagram

Activity diagram of Employee Management.

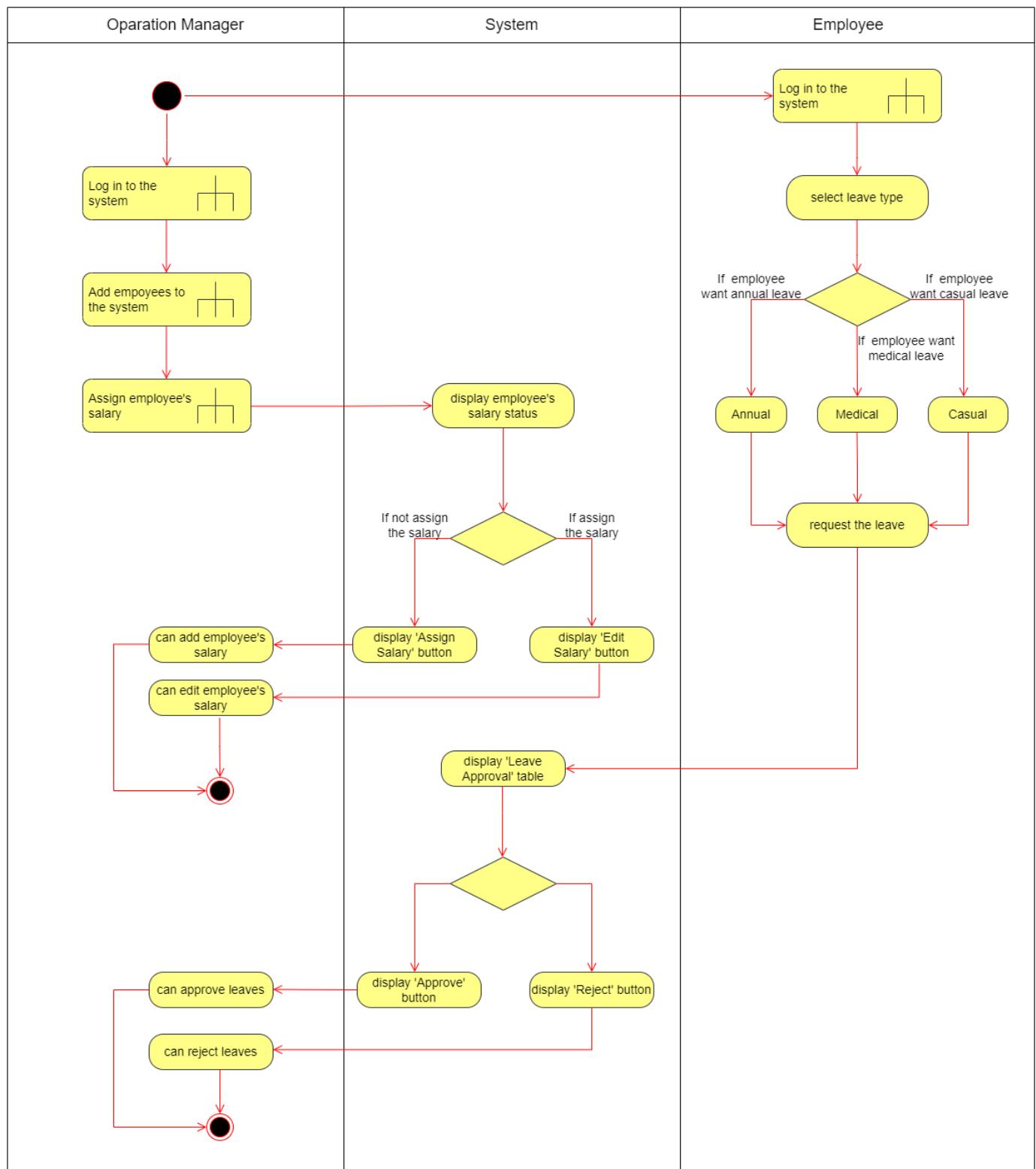


Figure 3.15 – Employee Management Activity Diagram

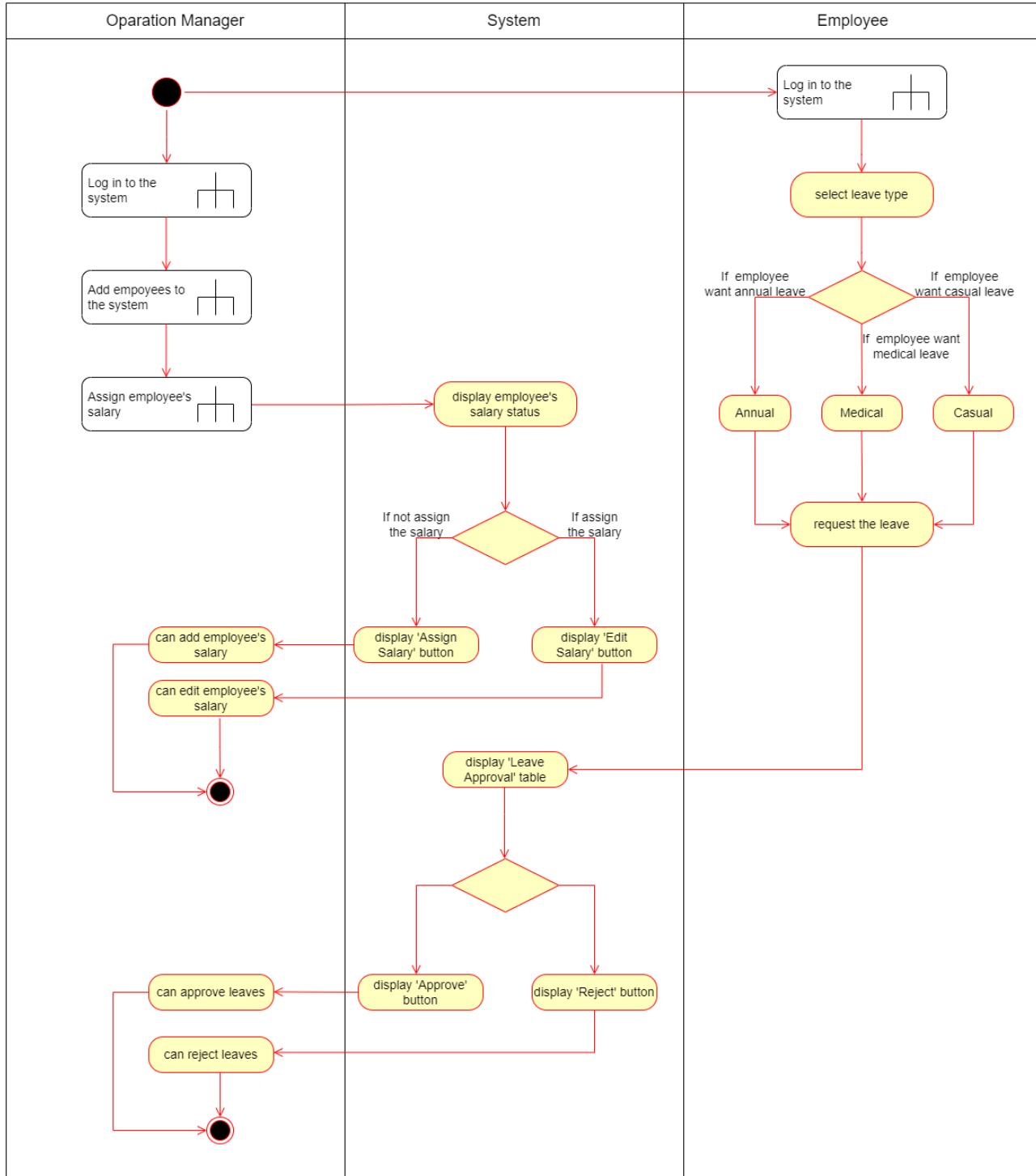
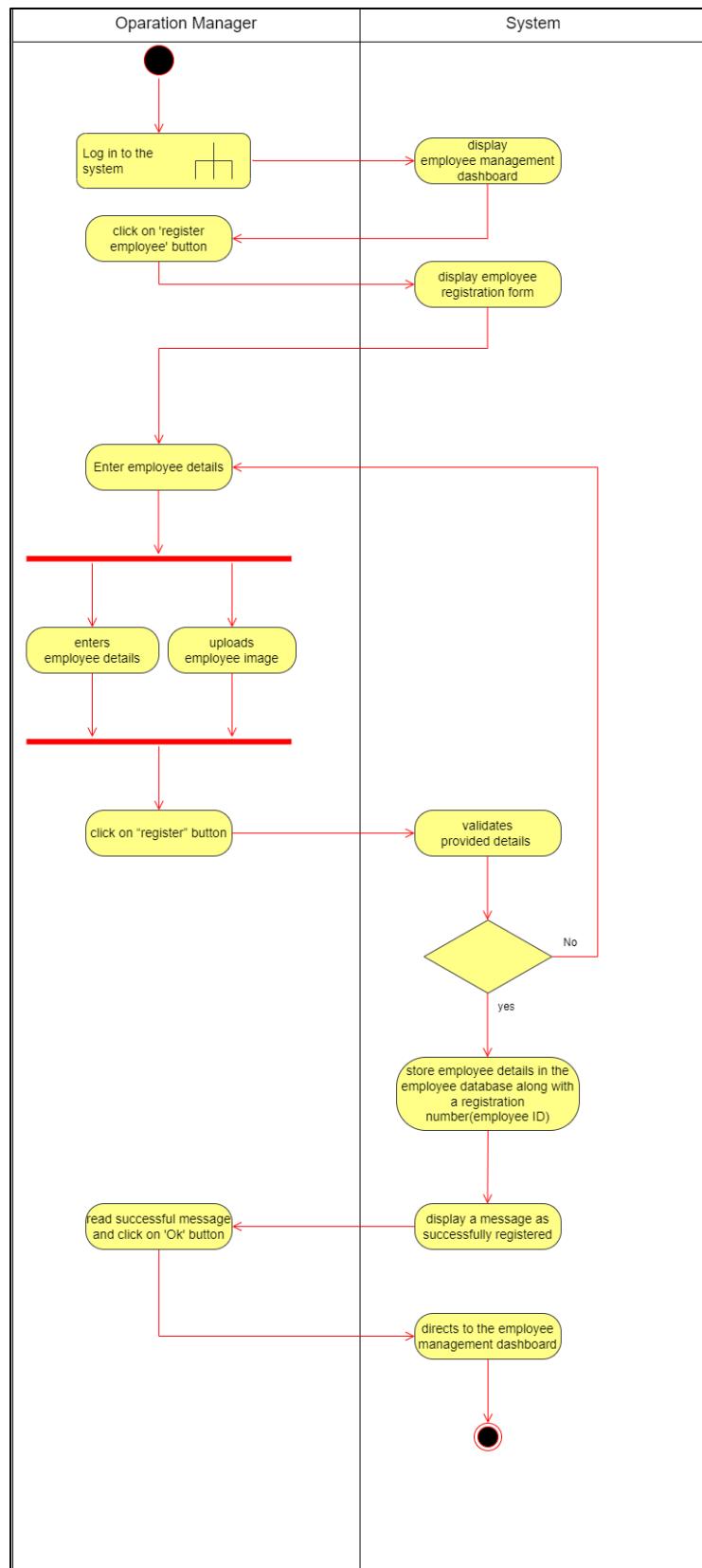


Figure 3.16 – Employee Management Activity Diagram

Figure 3.17 – Employee Management Activity Diagram



Sequence Diagram of Employee Management

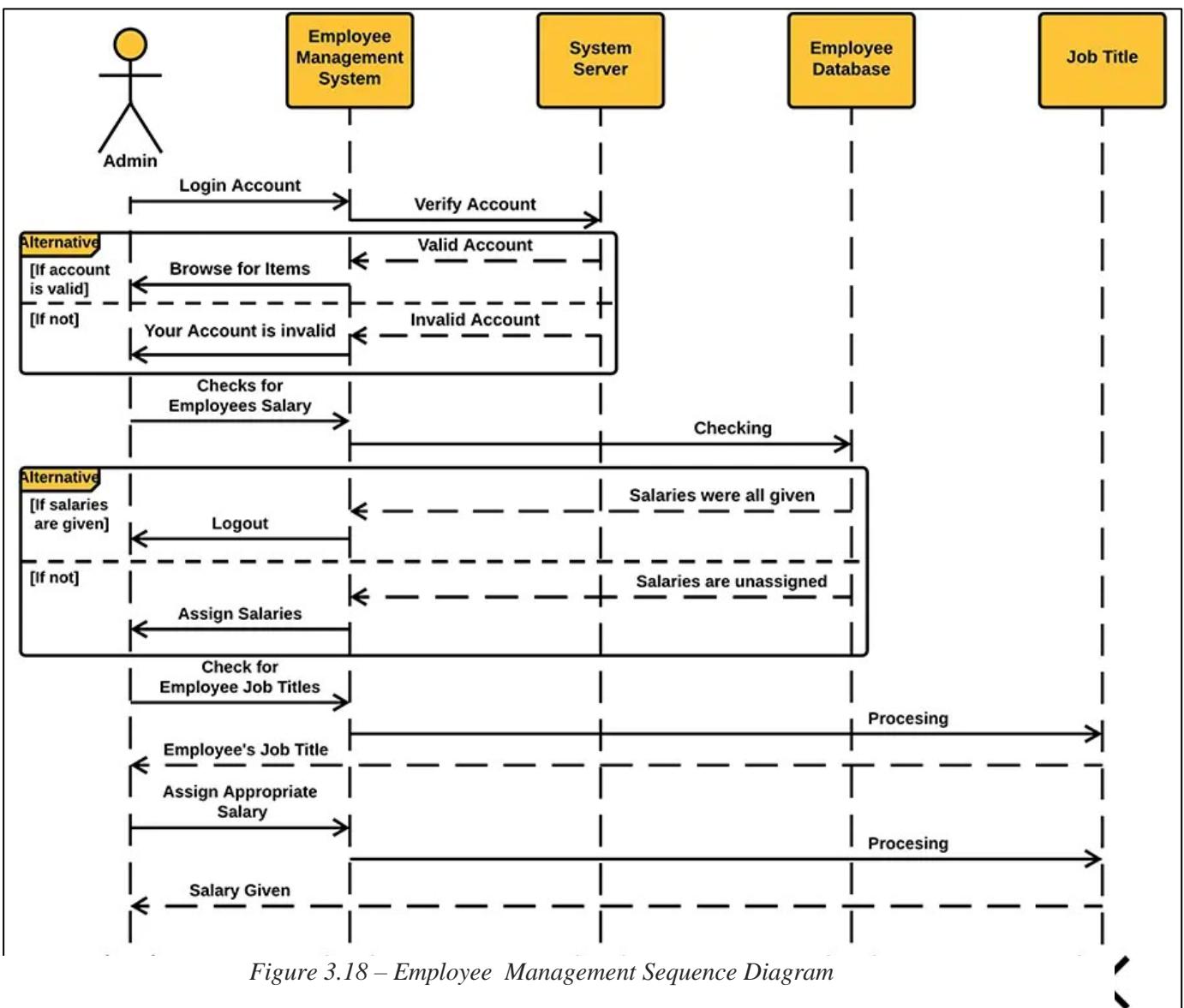


Figure 3.18 – Employee Management Sequence Diagram

Payment Management - IT21362958

This part handles user payments, payment reports, and member-exclusive offers made through our web app. It also keeps track of registered users' package purchases transactions made through our web app. Also, when logging into the system, Managers have access to all payment reports for all system categories.

Use Case Scenario of Payment Management.

Table 8 - Payment Management usecase scenario

Name	Payment Management	
Summary	Handle user's package payment transactions and all financial reports in the system.	
Priority	6	
Pre-conditions	Customers and Managers must register to the system.	
Post-conditions	Customers can get their payment report and Managers can check all payment reports.	
Primary actor(s)	Customer, Payment Manager	
Secondary Actor(s)	Manager	
Trigger	If a Customer is registered to the system they must keep their payments. If a financial report is generated in the system, it should be stored in the payment page.	
Main Scenario	Step	Action
	1	The user chooses the payment token.
	2	The user clicks on the 'submit' button.
	3	After that, the user can enter the payment page.
	4	The user should select payment type (hourly, monthly and annually).
	5	Then, the user can select the payment method cash or card.
	6	If users select the hourly payment, they want to pay daily because the system counts their playing hours per day. So, they should pay their payment and leave the gym.
	7	If the user selects the cash payment, they should go to the gym and pay with cash.
	8	If the user selects the card payment, they can go to the gym and pay with a card and they can use an online card payment method.
	9	If users select a payment type monthly or annually with card payment for the payment method, they should save their card in our system.

	10	When users save their card in the system, they can edit, update and delete.
	11	However, after the user selects payment type and method, they want to click on the ‘submit’ button.
	12	After the user gets the verification code and enters the code.
	13	If the verification code is correct, The system generates a token at this time.
	14	The user gets a successful message with a token including a token number, some instructions about the token, payment date and some other details.
	15	The second primary actor payment manager handles the whole payment page.
	16	The payment manager gets customer package payment details and generates a final report.
	17	Payment manager collects all financial reports in the system and uploads them to the payment page.
	18	Payment has a secondary actor who is manager and managers part is the admin part in payment management can handle all financial reports in the whole system.
	19	The managers can click on the button ‘payment’ on the system homepage.
	20	Then they enter the payment homepage, and they can login to the report page.
	21	The managers should enter their employee ID and NIC to login to the report page.
	22	After they login to the report page, they can select the report category (income reports, outgoing reports, and net income reports).
	23	The managers can search and check which report wanted them.
	24	After they check the reports, they can update, print, or delete the reports but they never can edit reports.
Extension	Step	Branching Action
	12a	If the verification code is incorrect, the user can not successfully make the payment.
	21a	If the manager’s employee ID and NIC are incorrect they can not enter the report page.

Use case diagram of Payment Management.



Figure 3.19 – Payment Management Usecase Diagram

Activity diagram of Payment Management.

Link for high-resolution diagram:

https://drive.google.com/file/d/1HPhWZXnrlIscV_DWaV6xYJV9Crlzc_2W/view?usp=sharing

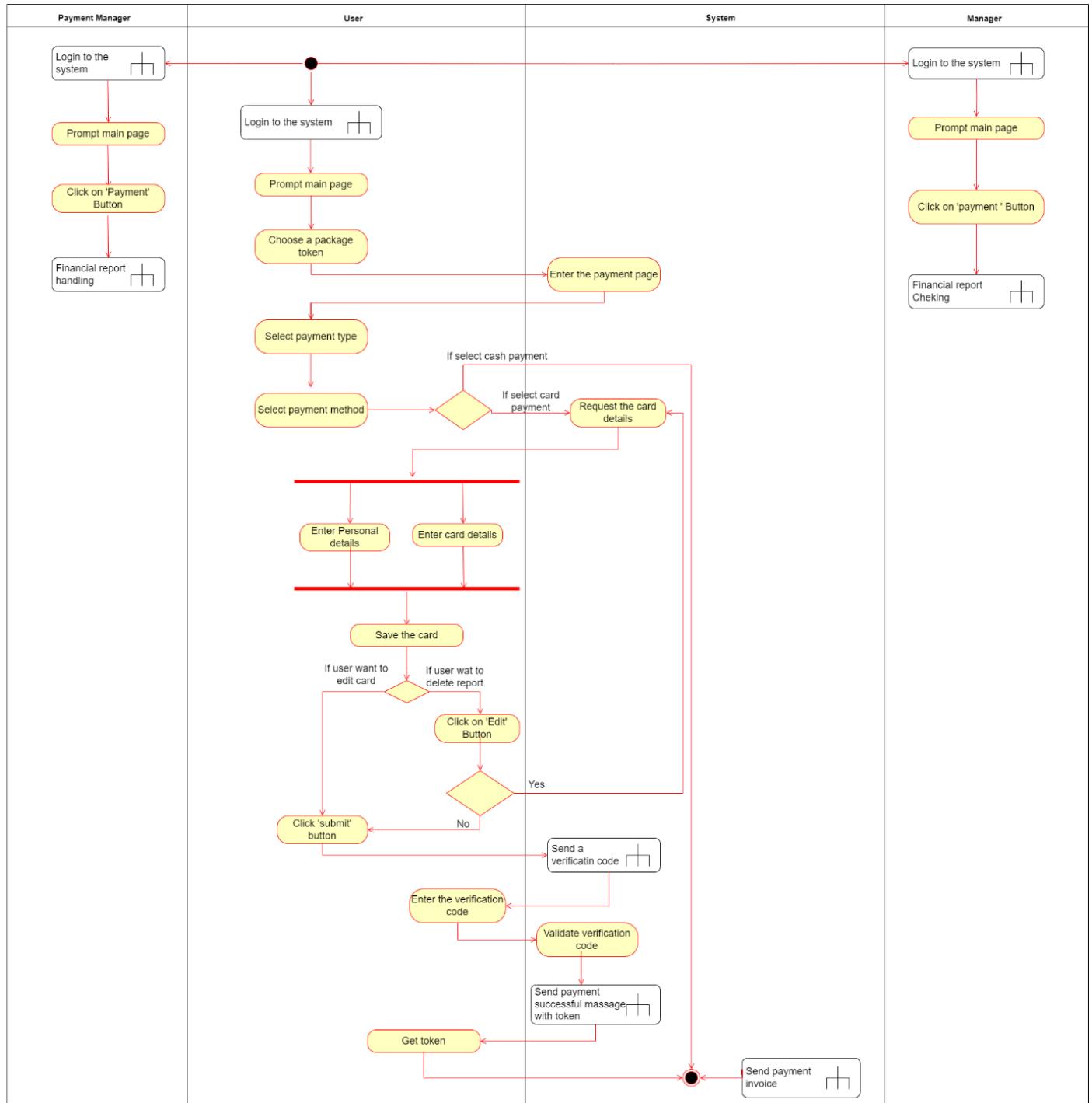


Figure 3.20 – Payment Management Activity Diagram

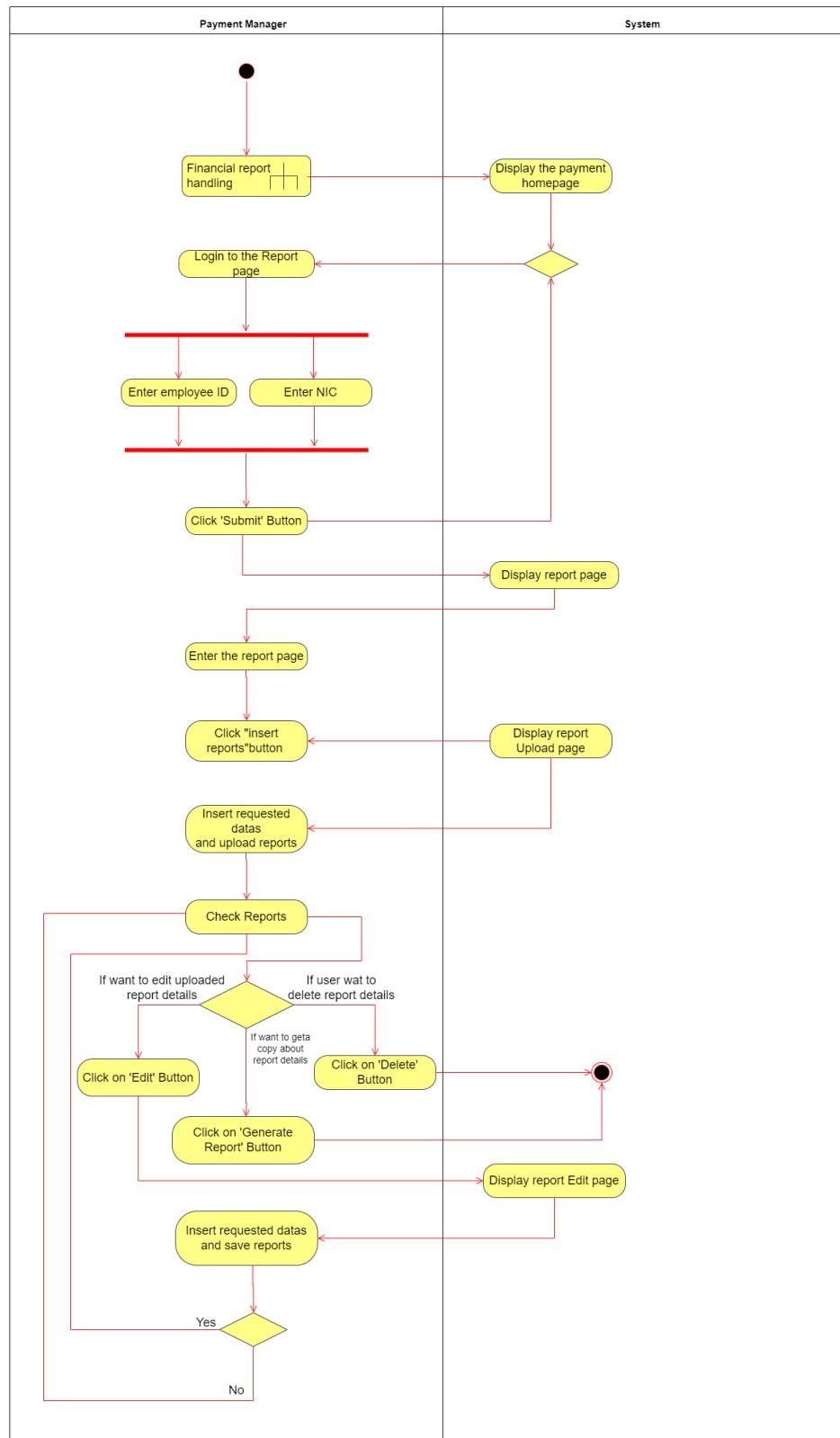


Figure 3.21 – Payment Management Activity Diagram

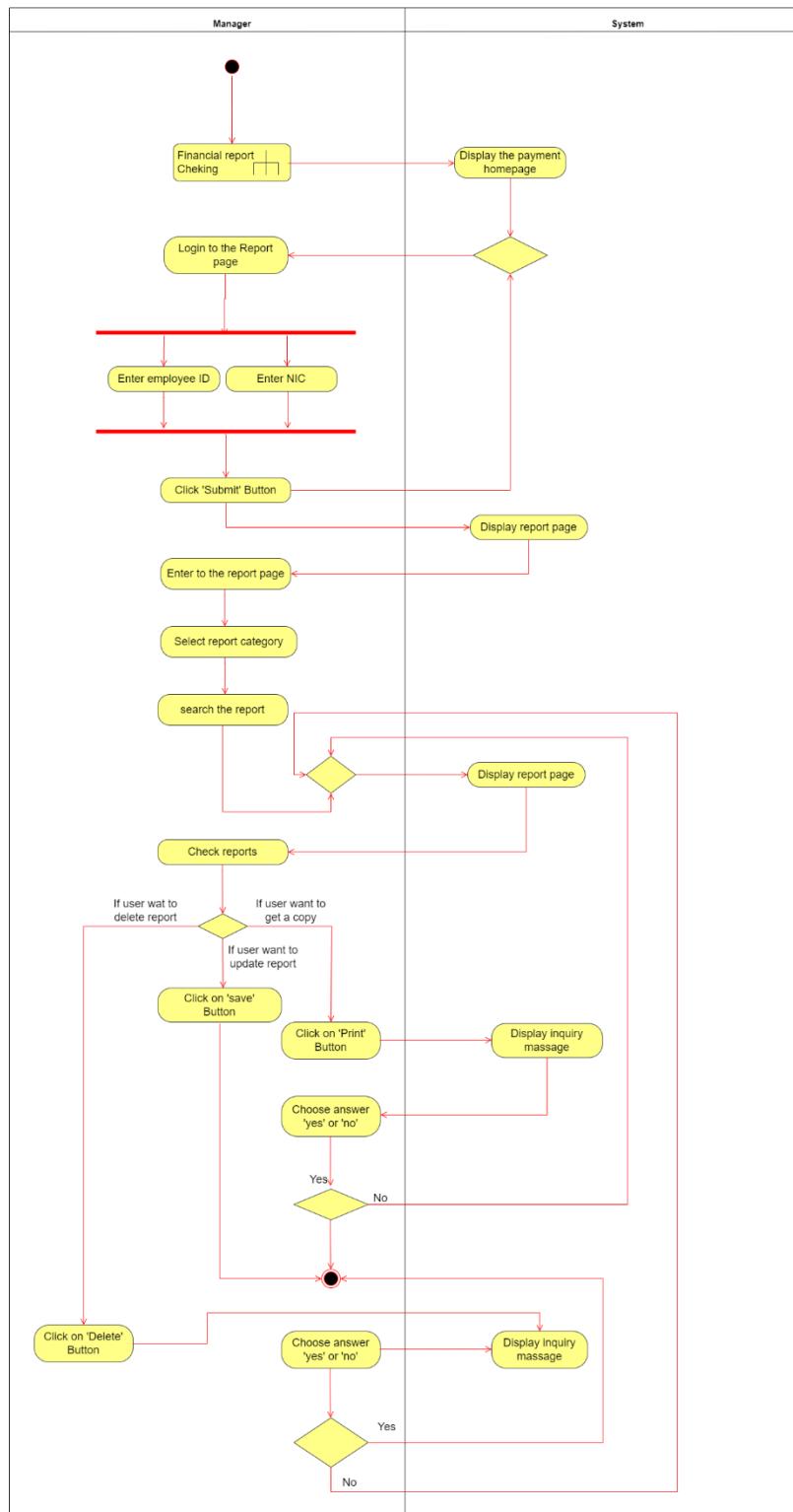


Figure 3.22 – Payment Management Activity Diagram

Sequence diagram of Payment Management.

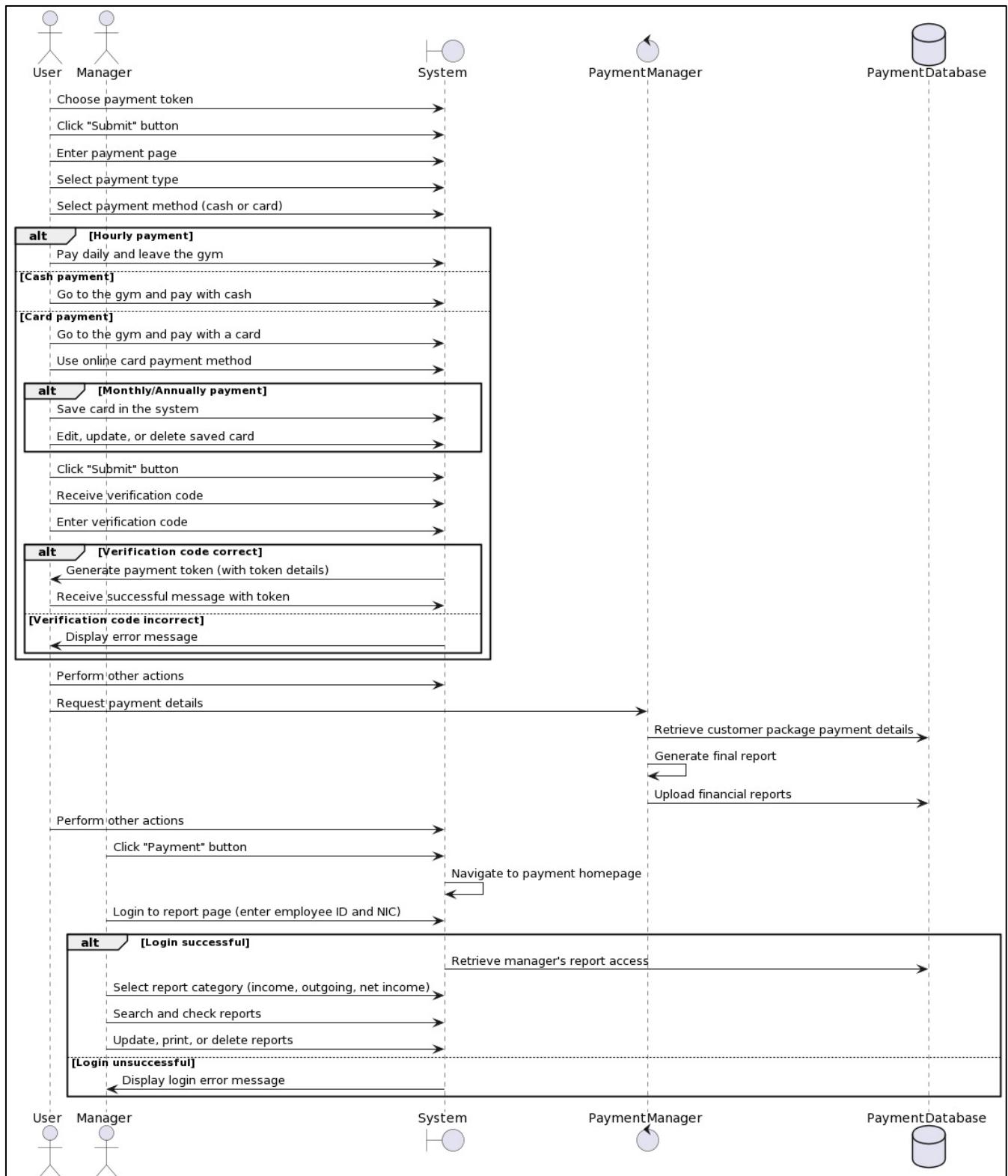


Figure 3.23 – Payment Management Sequence Diagram

Supplements Management - IT21329456

The Supplement Management section can be identified as a special section in our gym management system. All supplement-related tasks are handled through this section. In current systems, there is no way for users to order or buy their required supplements, so they have to buy them from the market sometimes paying a higher amount of money. Apart from providing the opportunity to order supplements, this section can make recommendations depending on clients' demands and requirements

Use Case Scenario of Supplements Management.

Table 9 - Supplements Management usecase scenario

Number	002	
Name	Place Orders	
Summary	Customer plays an order	
Priority	07	
Preconditions	Users view the page	
Postconditions	User has placed an order and received an invoice	
Primary actor	Customer	
Main scenario	Step	Action
	01	User visits supplement buying page
	02	User creates user account
	03	User login to the system
	04	User enters login credentials
	05	User requests supplements through "supplements" button
	06	User chooses the "supplement type" option
	07	User navigates the "order" option
	08	User place order clicking "ok" button
	09	User view invoices through "mailbox" option
	10	User visit payment portal through "payment" button
	11	User chooses payment type
	12	User clicks "ok" to confirm
	13	User makes the payment
	14	User receives payment verification in "mailbox"

	15	User clicks “exit” button
Extensions	Step	Branching Actions
	04.a	System notifies wrong credentials
	08.a	Edit order list
	08.b	System notifies not enough stocks
	11.a	Payment options prompts

Use case diagram of Management.

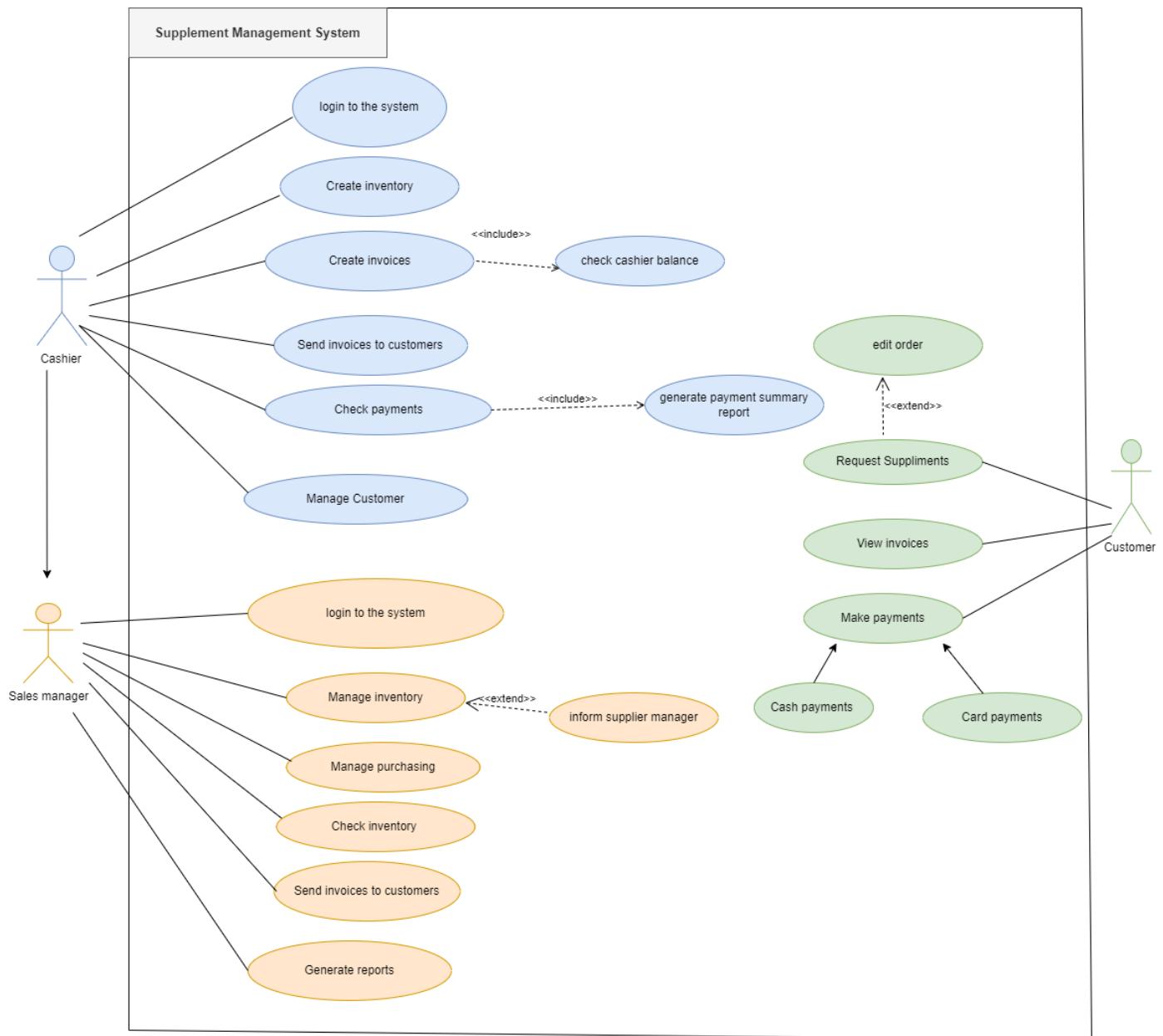


Figure 3.24 – Supplements Management Usecase Diagram

Activity diagram of Supplements Management.

Link for high-resolution diagram:

<https://drive.google.com/file/d/1EgT0yt9COVgSsWwN7cVwbOFd4wKGPBvb/view?usp=sharing>

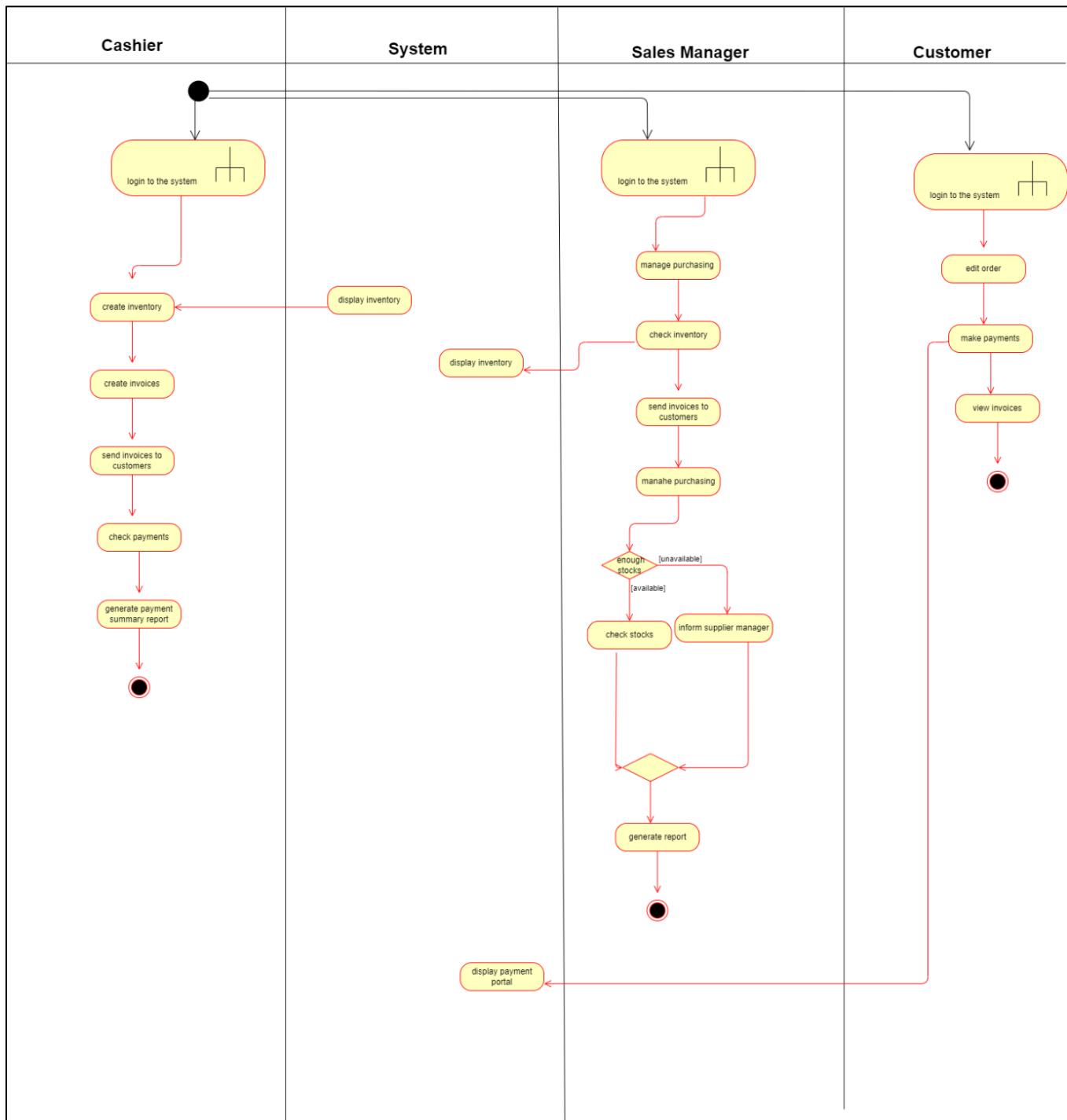


Figure 3.25 – Supplements Management Activity Diagram

Sequence diagram of Supplements Management.

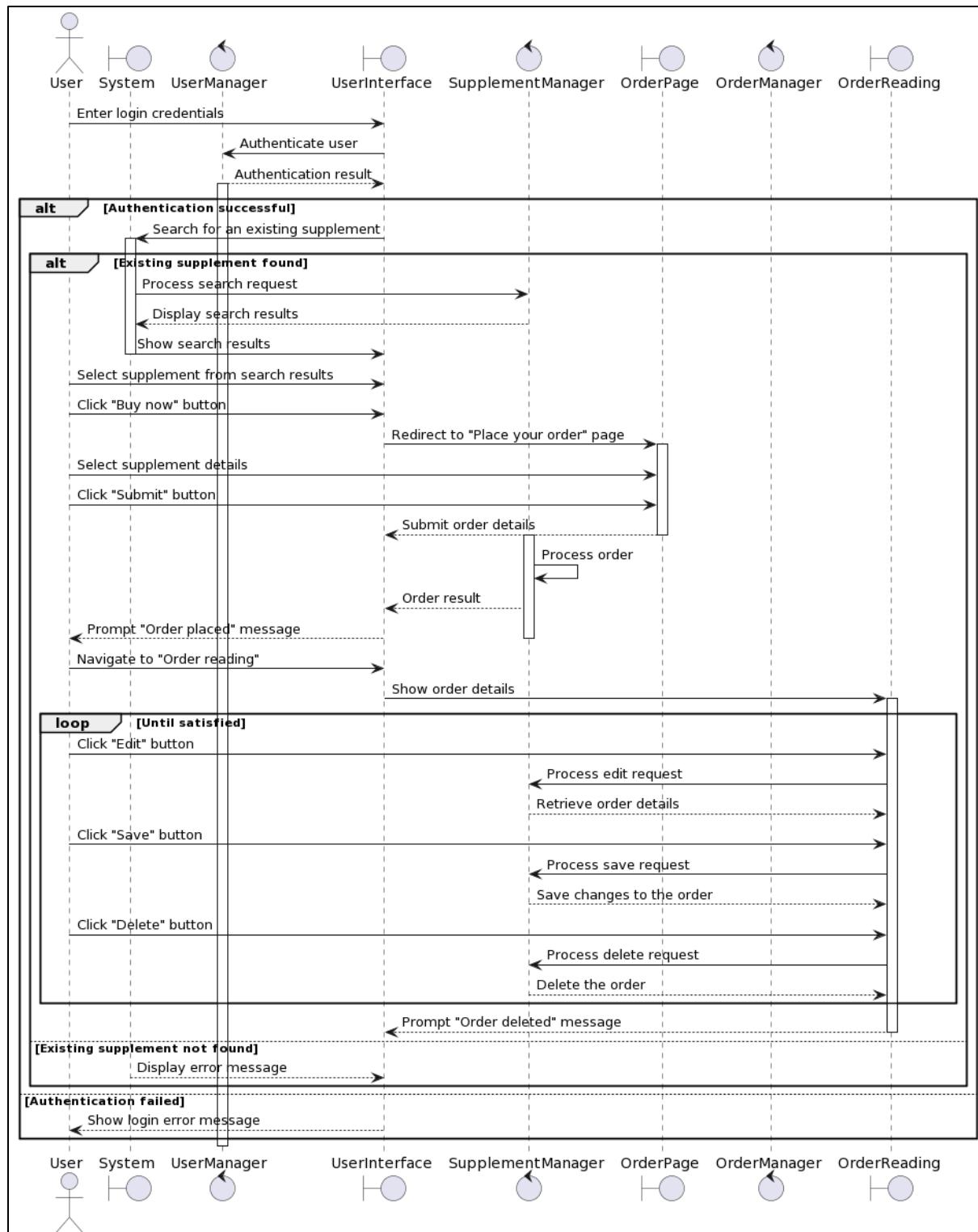


Figure 3.26 – Supplements Management Sequence Diagram

Supplier Management - IT21181160

When analyzing the requirements for a gym management system we have identified that current gym management systems do not have a separate place to buy supplements for users. For that, we provide a solution by facilitating users to order their required supplements through our system. After that, there is a problem with handling supplement stocks, because there is no way to manage supplement stocks and suppliers. As a solution, we included a supplier management section in our gym management system. This section handles all supplement stock and supplier-related tasks.

Use Case Scenario of Supplier Management.

Table 10 - Supplier Management usecase Scenario

Name	Manage stocks	
Summary	Stock manager place orders	
Priority	08	
Pre-conditions	The user must login to the system	
Post-conditions	User can place orders as he want	
Primary Actors(s)	Stock Manager	
Secondary Actors(s)	Supplier	
Main Scenario	Step	Action
	1	Stock manager login to the system using his username and password.
	2	Manager navigates to the “place order” section.
	3	User click on “new order” button.
	4	User can choose a supplier and a brand.
	5	Then enter quantity.
	6	Click on “place order” button.
	7	User navigates to “Orders” option.
	8	User can see previous and upcoming orders.
	9	User navigates to “upcoming orders” option.
	10	User select an order and click on “Edit order” button and edits it and then click “OK”.

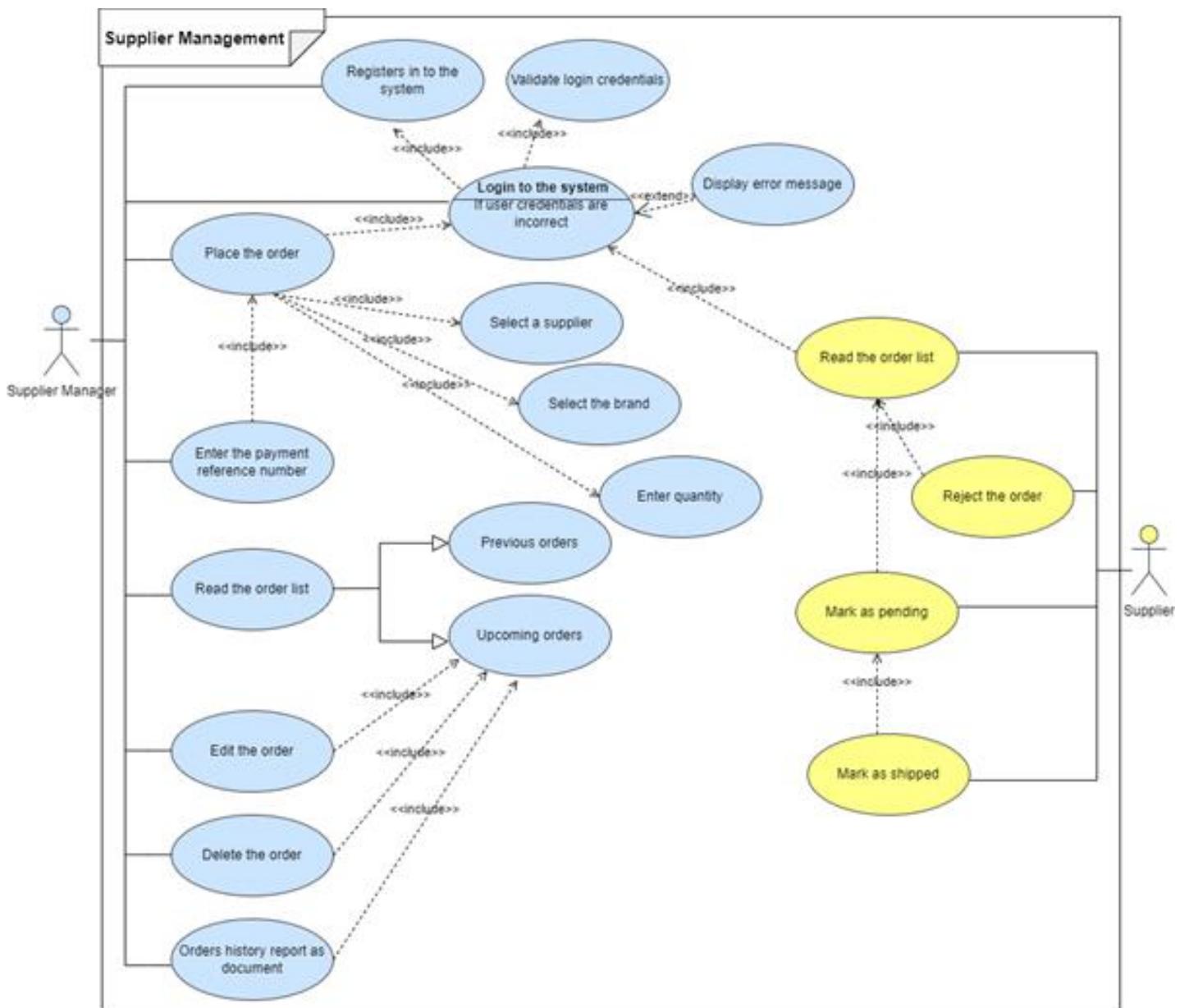
	11	Then user click on another order and click on “delete” option and then click on “OK”.
	12	User selects the “download orders report” and downloads the orders report.
	13	Supplier can login to the system by entering his username and password.
	14	Supplier navigates to the ‘orders’ page and reads the list of orders received.
Extensions	Step	Action
	1. a	System check whether entered username and password are valid or invalid.
	1. b	If invalid, the system will show an error message and ask to re-enter login credentials.
	3. a	System display a new screen to enter order details.
	6. a	User should made payment and should get a reference number before placing an order.
	9. a	Upon navigate, user can select a particular order and can delete or modify the order.
	13. a	System check whether entered username and password are valid or invalid.
	13. b	If invalid, the system will show an error message and ask to re-enter login credentials.
	14. a	User can reject the order if there’s no stock.
	14. b	User can accept the order and mark it as pending if there’s stock.
	14. c	After shipping, user can mark it as shipped.

Use case diagram of Supplier Management.

Link for high resolution diagram:

<https://drive.google.com/file/d/1hUyOBINI0lpvy62ccY-tl1pdnKU-xJwg/view?usp=sharing>

Figure 3.27 – Supplier Management Usecase Diagram



Activity diagram of Supplier Management.

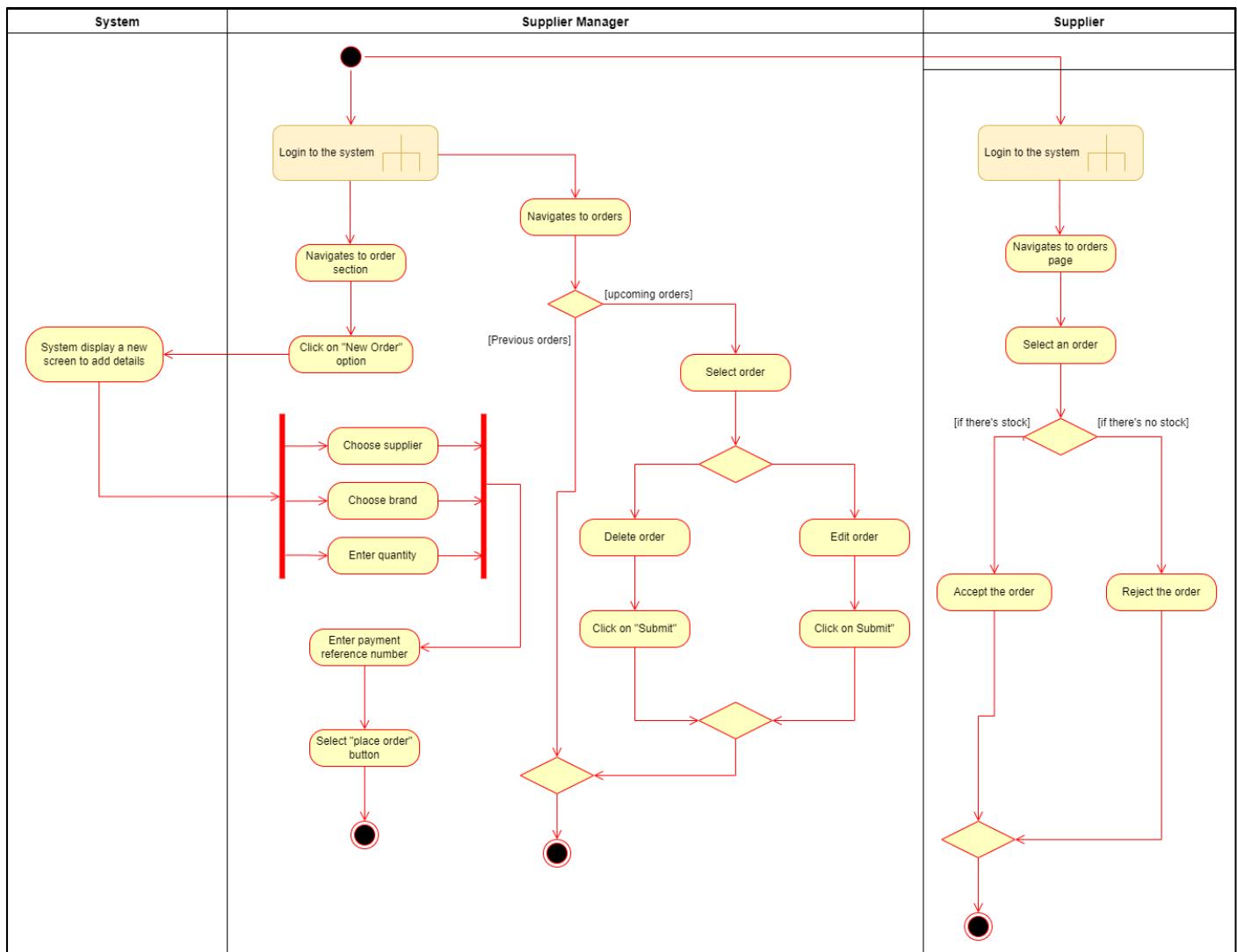


Figure 3.28 – Supplier Management Activity Diagram

Sequence diagram of Supplier Management.

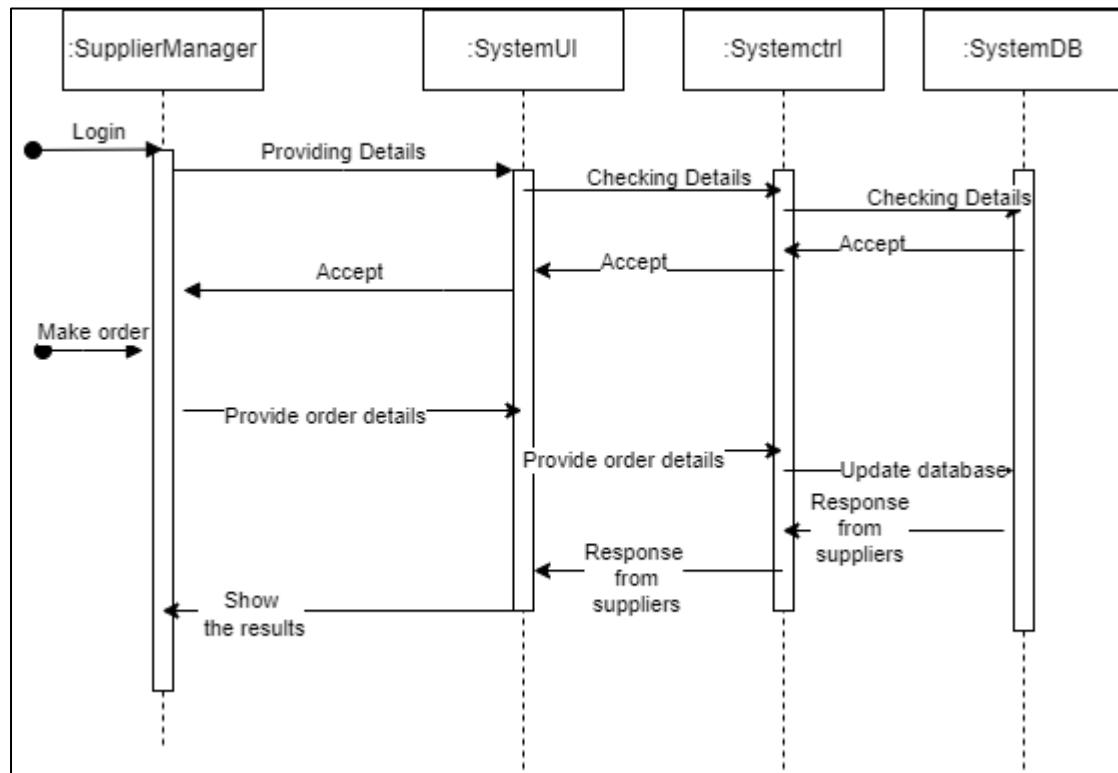


Figure 3.29 – Supplier Management Sequence Diagram

NON-FUNCTIONAL REQUIREMENTS

Functionality:

The system must meet the functional requirements of the users, which may include specific features or capabilities that the system must have in order to meet the needs of the user.

Performance:

The system must be able to perform its intended functions in a timely and efficient manner, with fast response times and minimal downtime.

Scalability:

The system must be able to scale to handle increasing amounts of data, users, or transactions without sacrificing performance or stability.

Reliability:

The system must be reliable and able to operate continuously without failure or unexpected downtime.

Compatibility:

The system must be compatible with other systems or software that the user may use, with the ability to exchange data or integrate with other systems, as necessary.

Usability:

The system must be easy to use and navigate, with an intuitive interface that is accessible to users with varying levels of technical expertise.

Cost:

The system must be cost-effective, with a reasonable cost that is commensurate with the value that it provides to the user.

PERFORMANCE REQUIREMENTS

In performance requirements, we take into consideration the request time and the response time between the client side to the server side and other only client-side functions that operate in the browser.

- Components should load within a second
- Database objects should retrieve the results within 2 seconds
- User authentications should be done in less than 2 seconds

High-level Architecture Diagram

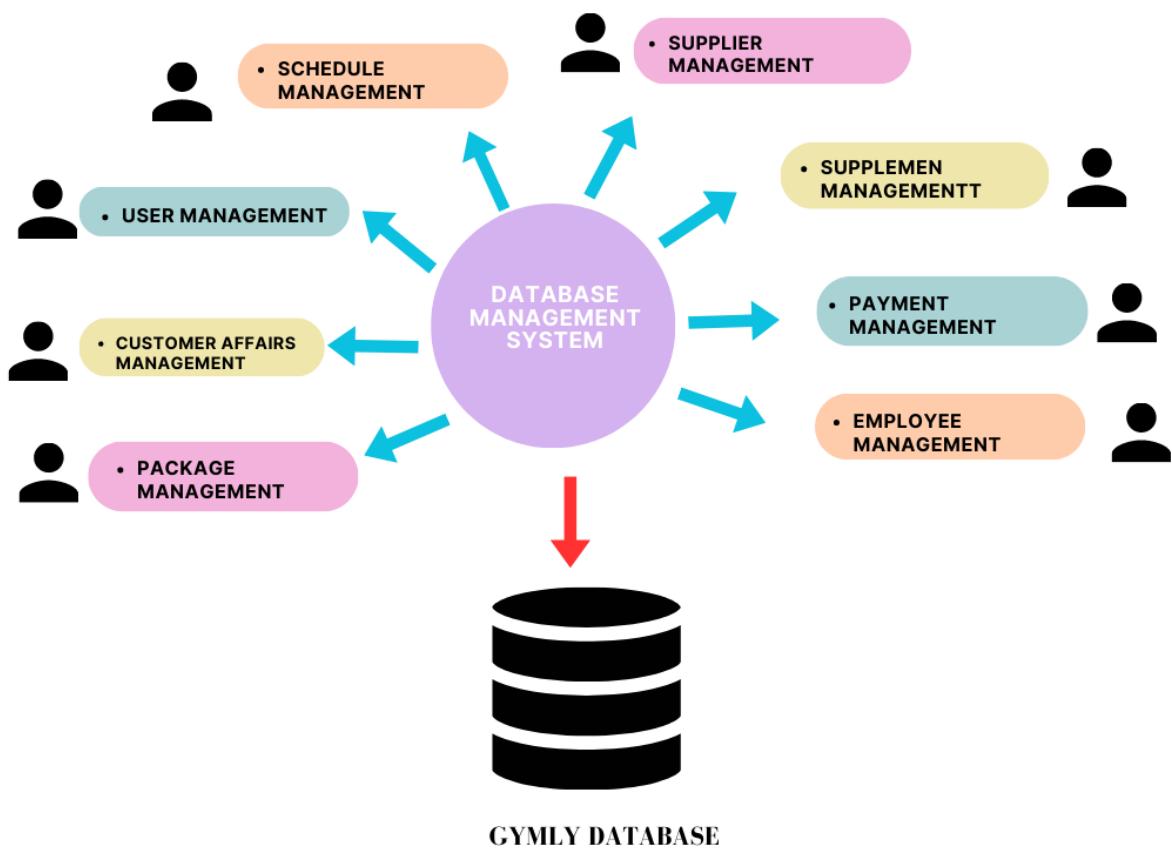


Figure 4 - High-level Architecture Diagram

Class Diagram

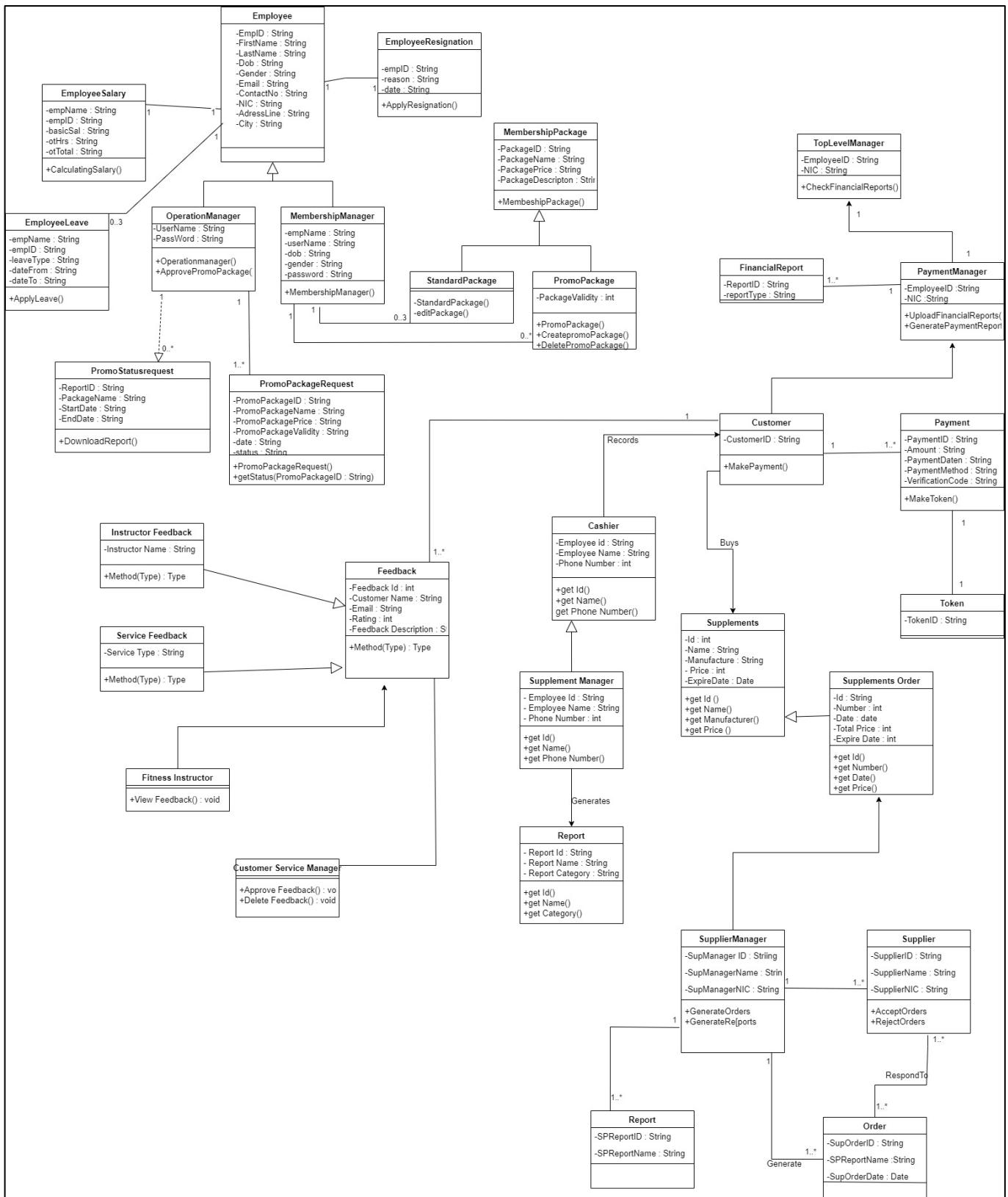


Figure 5 - Class Diagram

ER Diagram

Link for high resolution diagram:

<https://drive.google.com/file/d/1U6l4GwEjA3ZV6PbxEnxYtF8qDCDEauKP/view?usp=sharing>

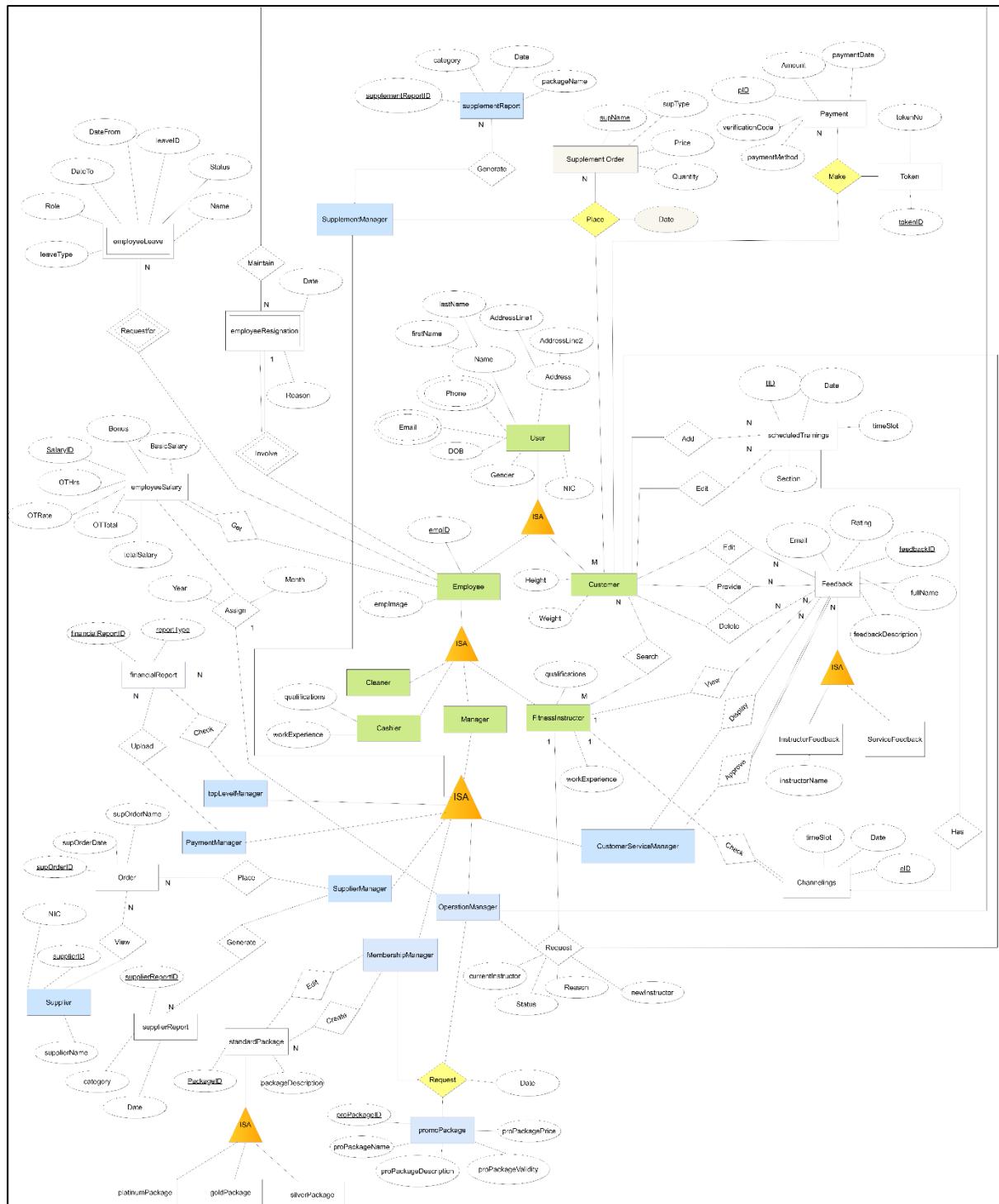


Figure 6 - EER Diagram

DATABASES

Database schema

Link for high resolution diagram:

https://drive.google.com/file/d/15PxCS5xUeKU_VoLhfXhhJEyMtEU-UI4i/view?usp=sharing

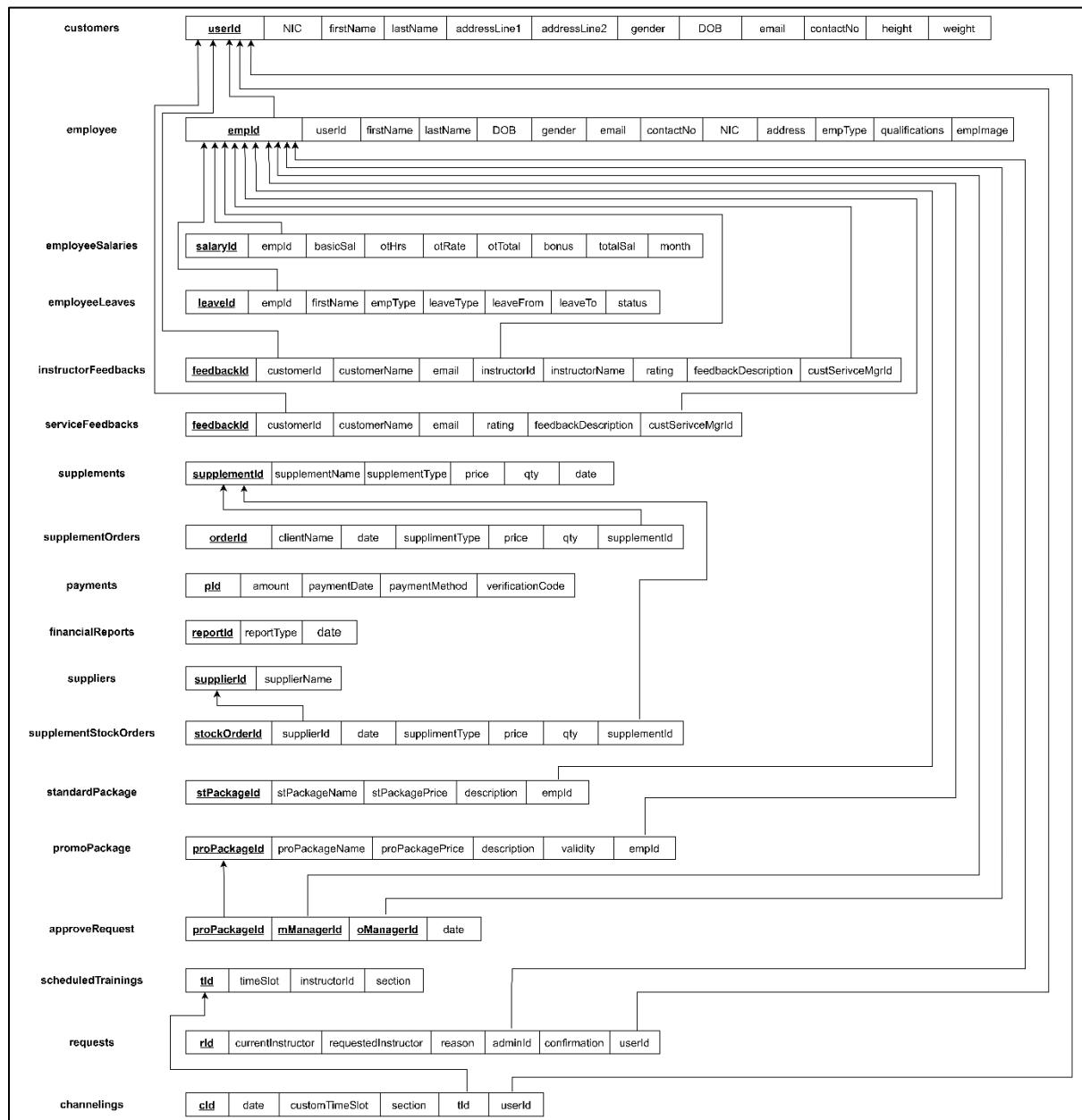


Figure 7 - Database Schema

PROCESSES

- Member Registration: Allow individuals to register as gym members by providing their personal information, contact details, and membership preferences. Validate and store the registration data in the system.
- Membership Management: Provide functionality to manage memberships, including options for different membership types (e.g., monthly, yearly), membership upgrades or downgrades, membership renewal reminders, and cancellation processes.
- Training Scheduling: Implement a process to schedule and manage gym classes, training sessions, and appointments. Allow administrators to define class schedules, trainers to assign themselves to specific classes, and members to book or cancel their class sessions.
- Payment Processing: Establish a payment process to handle membership fees, class fees, and other payments. Integrate with payment gateways to securely process online payments. Generate invoices and receipts, track payment history, and handle recurring billing.
- Employee Management: Establish processes for managing gym staff, including trainers, instructors, and administrators. Handle staff onboarding, training, scheduling, and performance tracking. Provide access levels and permissions based on staff roles.
- Reporting and Analytics: Set up processes to generate various reports and analytics for gym management, such as member statistics, revenue analysis, class utilization, attendance trends, and equipment usage. Provide customizable report templates and scheduling options.
- Communication and Notifications: Implement communication channels for sending notifications, reminders, and updates to members and staff. Send automated messages for membership renewals, class changes, special offers, and other important information.
- Feedback and Complaint Handling: Establish a process for collecting member feedback and handling complaints or issues. Provide channels for members to submit feedback, suggestions, or complaints and ensure prompt responses and resolutions.

WORKFLOWS

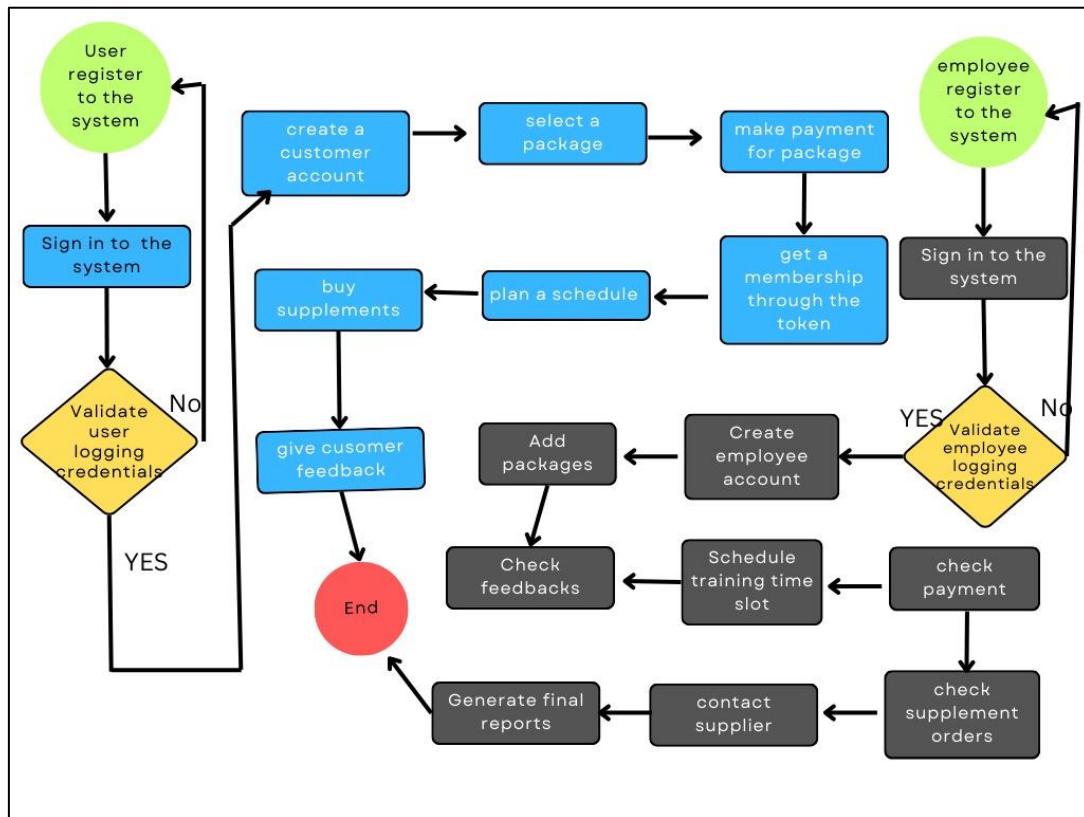


Figure 8 - Workflows

- ❖ The workflow begins with a user registering to the system by providing their details and creating a unique username and password. Once registered, the user can sign into the system using their credentials. The system validates the user's logging credentials to ensure the information is correct.
- ❖ After signing in, the user has the option to create a customer account by providing additional information such as contact details and fitness goals. Once the customer account is created, the user can browse and select a package that suits their needs. Upon selecting a package, the user proceeds to make payment for the package using a preferred payment method.
- ❖ Upon successful payment, the user receives a membership token that grants access to various features and services within the system. Using the token, the user can plan a schedule for their training sessions by selecting available time slots provided by the system. Additionally, the user has the option to purchase supplements from the system's inventory.
- ❖ After completing training sessions or receiving supplement orders, the system prompts the user to provide feedback on their experience. The user can give feedback regarding the quality of service, trainers, and overall satisfaction.
- ❖ In addition to customers, employees can also register to the system by providing their relevant details and creating a unique username and password. Similar to customers, employees can sign into the system using their credentials, and the system validates their logging credentials.
- ❖ Once logged in, employees can create an employee account, which includes information such as contact details and job roles. Employees with appropriate privileges can add packages to the system, specifying the details, pricing, and benefits associated with each package. They can also check feedback provided by customers to monitor satisfaction and improve services.

- ❖ Furthermore, employees can schedule training time slots for customers, ensuring proper allocation of trainers and facilities. They can also check payment statuses to verify successful transactions and monitor supplement orders. If necessary, employees can contact suppliers to replenish stock or address any issues related to supplements.
- ❖ As the system operates, it generates final reports based on various parameters such as customer feedback, package popularity, sales, and inventory management. These reports provide valuable insights for business analysis and decision-making purposes.
- ❖ The workflow continues as customers and employees interact with the system based on their respective roles and privileges. Finally, when the workflow is completed or at a designated time, the system performs the necessary operations to close the session gracefully.
- ❖ In summary, this workflow description outlines the steps involved in the user and employee interactions with the system, covering tasks such as registration, sign-in, account creation, package selection, payment, membership token usage, scheduling, supplement purchase, feedback provision, employee registration, package management, feedback monitoring, scheduling, payment and supplement order verification, supplier communication, report generation, and system closure.

DEVELOPMENT ASPECTS



Figure 9 - Development Aspects

User Interfaces

Training Schedule Management – IT21377280

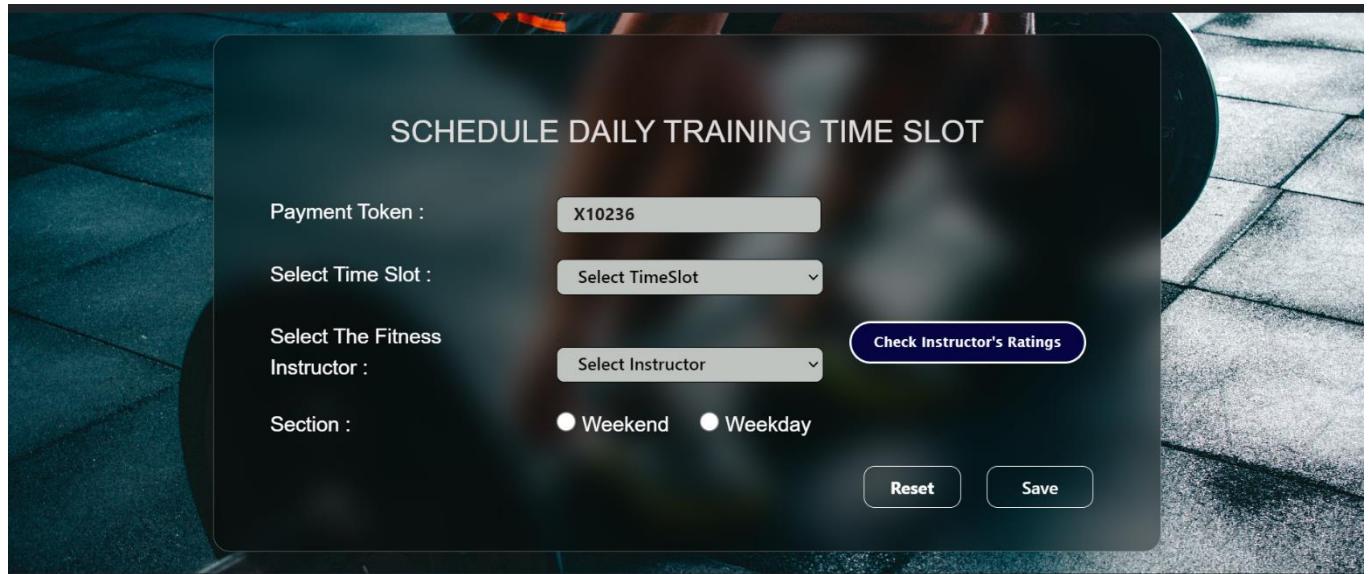


Figure 10.1 – Schedule Management Sequence Diagram (user view)

The screenshot shows a table titled "SCHEDULE DAILY TRAINING TIME SLOT" with a "Generate A Report" button and a search bar. The table has columns: No, TimeSlot, Date, Instructor, Section, Edit, and Delete. The data in the table is as follows:

No	TimeSlot	Date	Instructor	Section	Edit	Delete
4	10.00pm - 12.00pm	2023-06-09	Mahinda Rajapaksha	Weekend	<button>Edit</button>	<button>Delete</button>
3	9.00pm - 11.00pm	5/14/2023	Mahinda Rajapaksha	Weekday	<button>Edit</button>	<button>Delete</button>
1	8.00pm - 10.00pm	5/14/2023	Ranil Wimalasiri	Weekday	<button>Edit</button>	<button>Delete</button>
3	10.00pm - 12.00pm	5/14/2023	Namal Wijerathna	Weekend	<button>Edit</button>	<button>Delete</button>
5	10.00pm - 12.00pm	5/14/2023	Namal Wijerathna	Weekend	<button>Edit</button>	<button>Delete</button>
3	10.00pm - 12.00pm	5/14/2023	Vije Kulasuruya	Weekend	<button>Edit</button>	<button>Delete</button>

Figure 10.2 – Training Schedule Management Timetable (user view)

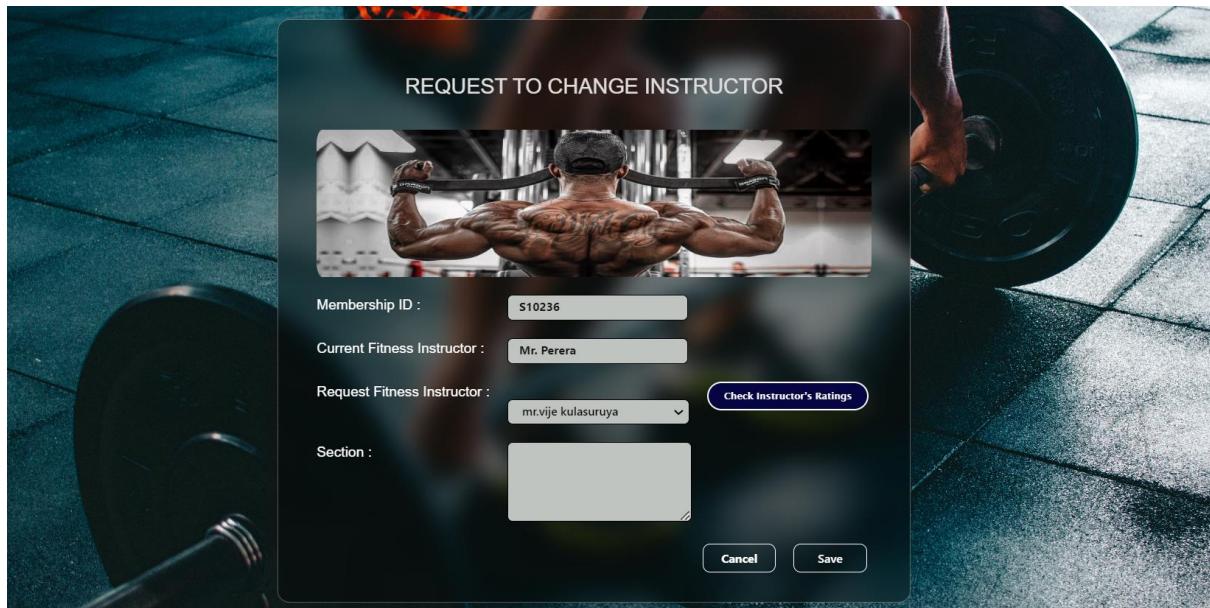


Figure 10.3 – Training Schedule Management Request to change Instructor (user view)

INSTUSTOR CHANGE REQUESTS					
Client Name	Current Trainer Name	Requested Trainer Name	Reason	Approve	Reject
Chalani Rajapaksha	Namal Wimalasiri	Mahinda Rajapaksha	He is not for yoga	<button>Approve</button>	<button>Reject</button>
Sithum Senadira	Vraj Jayakodi	Randika Ukuwela	He is not for yoga	<button>Approve</button>	<button>Reject</button>
Madusha Senasinghe	Kamal Rathnayake	Banuka Wimaladarma	He is not for yoga	<button>Approve</button>	<button>Reject</button>

Figure 10.4 – Training Schedule Management Instructor change requests (admin view)

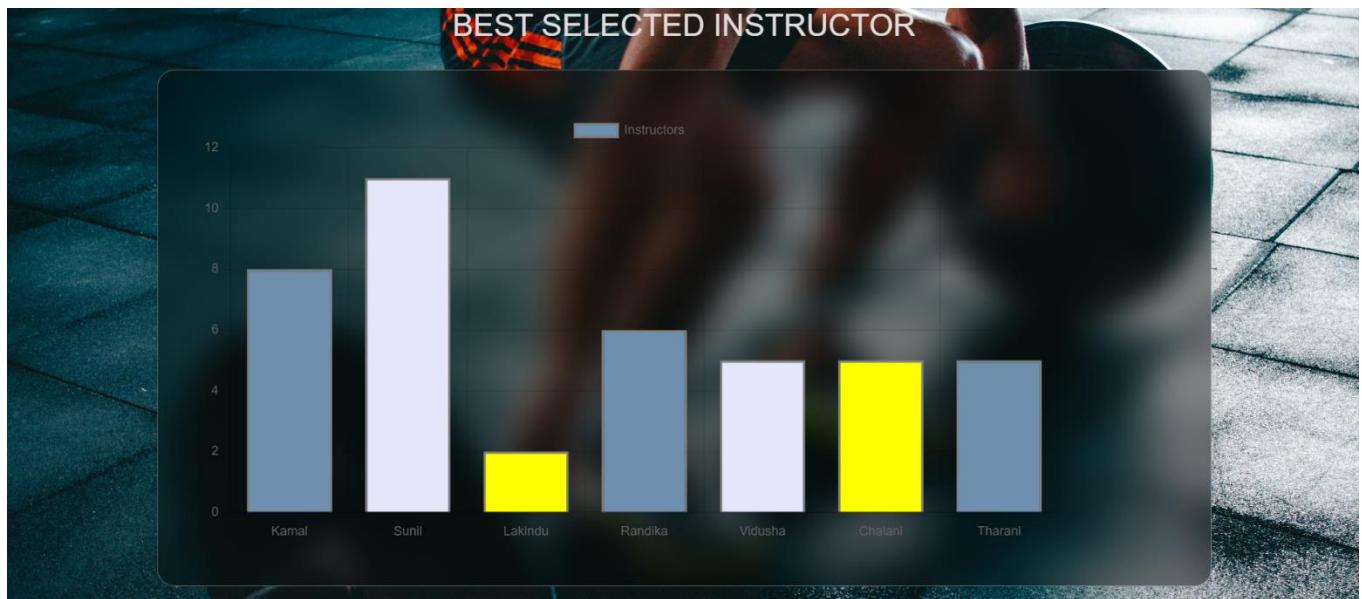


Figure 10.5 – Training Schedule Management Best selected instructors static view (admin view)

The dashboard features a top navigation bar with the GYMLY logo, 'About Us', 'Supplement Store', 'Contact Us', and a 'Sign in' button. Below the navigation is a large banner with the text 'SCHEDULE DAILY TRAINING TIME SLOTS' overlaid on a background image of a muscular man in a gym. At the bottom of the dashboard are four dark grey rectangular buttons:

- Employee Details
- Instructor Change Requests
- Employee Leave Requests
- Promo Package Requests

Figure 10.6 – Training Schedule Management Operation Manager dashboard (admin view)

User Management - IT21281778

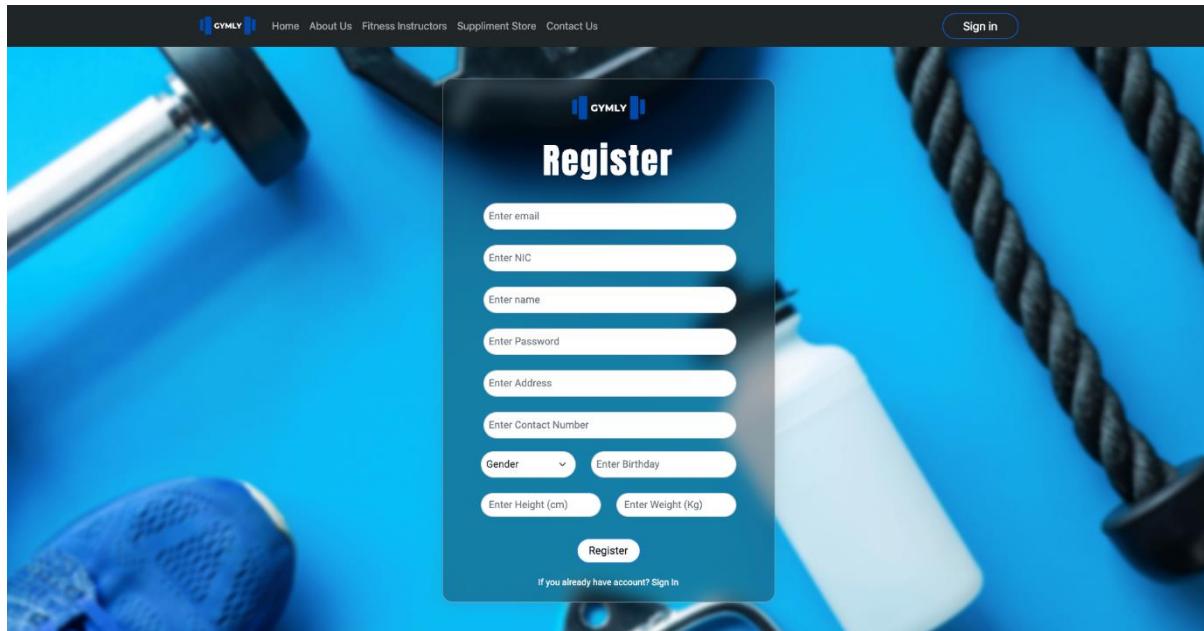


Figure 10.7 – User Management Sign Up (user view)

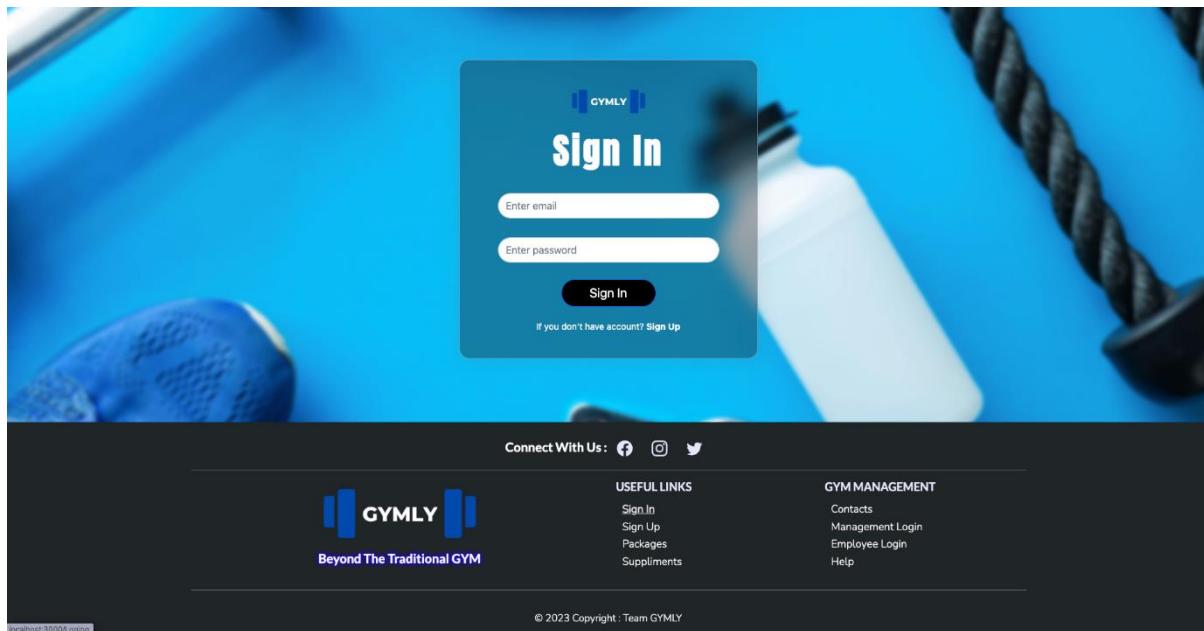


Figure 10.8 – User Management Sign In (user view)

Name	Gender	Email	Package	Phone Number	
Peshala Welangalla	Male	peshala@gmail.com	Basic	0769111111	<button>delete</button>
Vidu Samanaga	Male	vidu@outlook.com	Basic	0769114371	<button>delete</button>
Dhanushi Piyarathne	Female	dhanu@outlook.com	Basic	0769114371	<button>delete</button>
Tharusha Gunawardhena	Male	tharusha@outlook.com	Basic	0769114371	<button>delete</button>
Lakindu Widuranga Alwis	Male	lakindu@outlook.com	Basic	0769114371	<button>delete</button>
Hashan	Male	hasan@gmail.com	Basic	0444444444	<button>delete</button>

Connect With Us: [Facebook](#) [Instagram](#) [Twitter](#)

GYMLY
Beyond The Traditional GYM

USEFUL LINKS

- [Sign In](#)
- [Sign Up](#)
- [Packages](#)
- [Supplements](#)

GYM MANAGEMENT

- [Contacts](#)
- [Management Login](#)
- [Employee Login](#)
- [Help](#)

Figure 10.9 – User Management All users (admin view)

Good Morning, Lakindu Widuranga

Profile

Go >

BMI

Go >

Trainers

Go >

Notification

Go >

Payment

Go >

Packages

Go >

Connect With Us: [Facebook](#) [Instagram](#) [Twitter](#)

Figure 10.10 – User Management User dashboard (user view)

The screenshot shows a user profile page for 'Lakindu Widuranga Alwis'. At the top, there's a navigation bar with links for Home, About Us, Fitness Instructors, Suppliment Store, and Contact Us. On the right is a 'Sign in' button. Below the navigation is the user's name, 'Lakindu Widuranga Alwis', followed by several profile details: email (lakindu@outlook.com), phone number (0769114371), address (119 / E / 1 Weragolla), gender (Male), height (178Cm), and weight (77Kg). A 'Edit Profile' button is located below these details. At the bottom of the page, there's a 'Connect With Us:' section with social media icons for Facebook, Instagram, and Twitter. The footer contains the GYMLY logo and the tagline 'Beyond The Traditional GYM'. It also includes sections for 'USEFUL LINKS' (Sign In, Sign Up, Packages, Supplements) and 'GYM MANAGEMENT' (Contacts, Management Login, Employee Login, Help).

Figure 10.11 – User Management User profile (user view)

The screenshot shows the BMI Tracker page. At the top, it displays the user's weight (77 kg) and height (178 cm). Below this is a 'How is my BMI?' button. The page then shows the user's BMI is 24.3. Following this, there is a list of 7 health tips: 1. Eat a balanced diet that includes plenty of fruits, vegetables, whole grains, and lean proteins. 2. Exercise regularly, aiming for at least 30 minutes of moderate-intensity physical activity most days of the week. 3. Limit your intake of processed and sugary foods. 4. Drink plenty of water throughout the day. 5. Get adequate sleep each night. 6. Manage stress levels with relaxation techniques such as yoga or meditation. 7. Avoid smoking and excessive alcohol consumption. At the bottom, there's a 'Connect With Us:' section and a footer with the GYMLY logo, 'USEFUL LINKS' (Sign In, Sign Up, Packages, Supplements), and 'GYM MANAGEMENT' (Contacts, Management Login, Employee Login, Help).

Figure 10.12 – User Management BMI Tracker (user view)

Customer Affairs Management - IT21489914

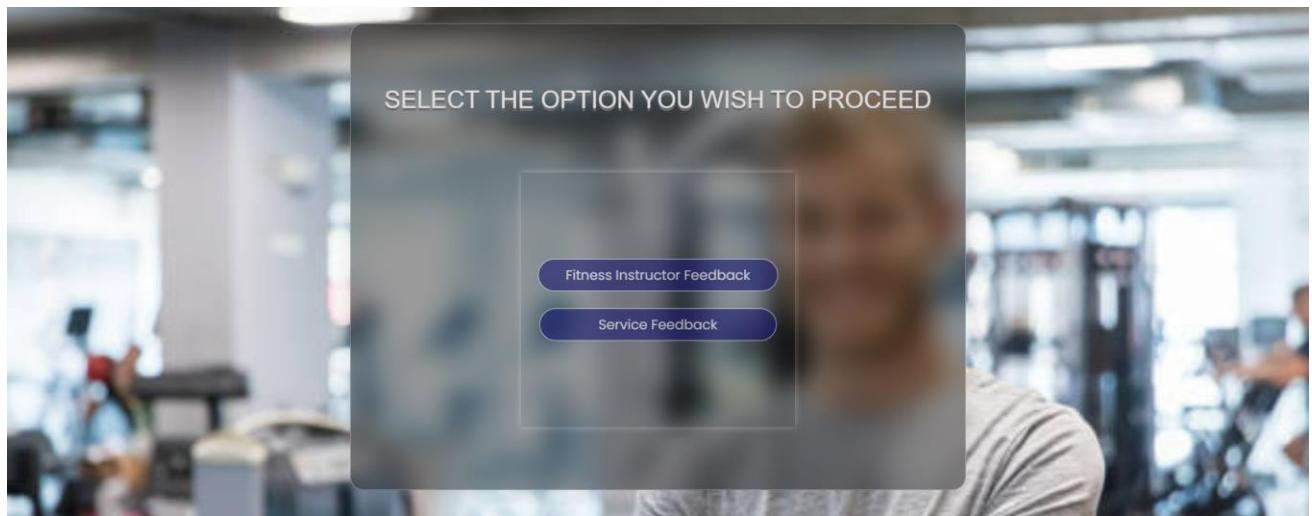


Figure 10.13 – Customer Affairs Management – Feedback Options UI (user view)

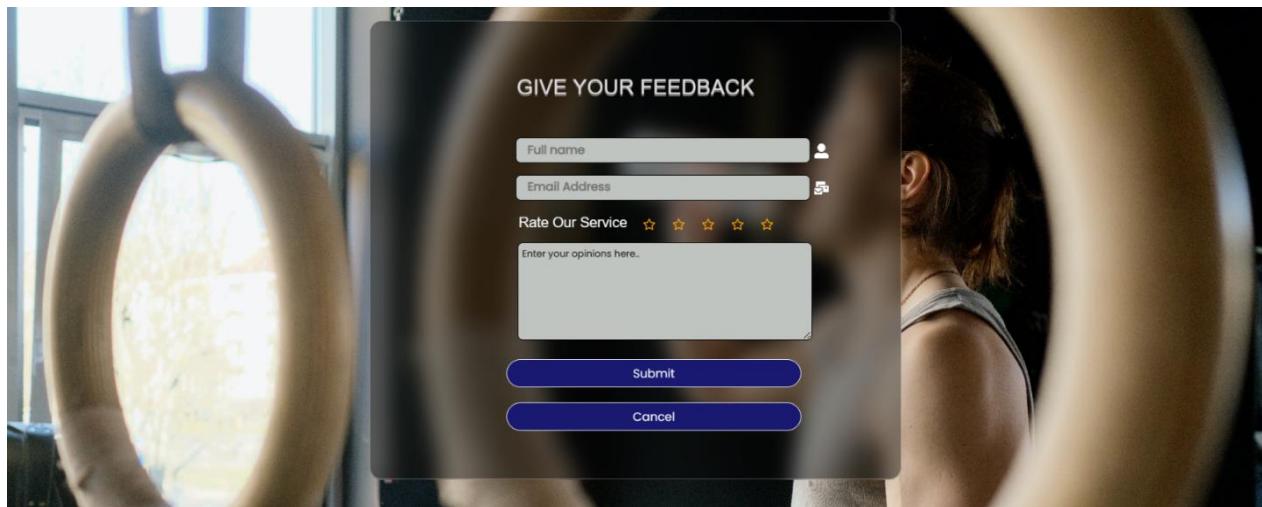


Figure 10.14 – Customer Affairs Management - service feedback form (user view)

INSTRUCTOR FEEDBACK LIST							
Date	Customer Name	Email	Instructor Name	Rating	Feedback	Approve	Reject
2023-05-19	Wijedasa H.A.S.A	it21489914@my.sliit.lk	Mr. Leanne Graham	5	Well satisfied and highly recommended	Accept	Reject
2023-05-14	Tharushika Subashini Kavindya	kavindya@gmail.com	Mr. Leanne Graham	4	Thumbs up	Accept	Reject
2023-05-12	Saumya	saumya@gmail.com	Mr. Leanne Graham	4	Great coach	Accept	Reject
2023-04-23	Chalani Saumya	chalani@gmail.com	Mr. Leanne Graham	3	Medium coach	Accept	Reject

8

Figure 10.15 – Customer Affairs Management - Instructor feedback Approval (admin view)

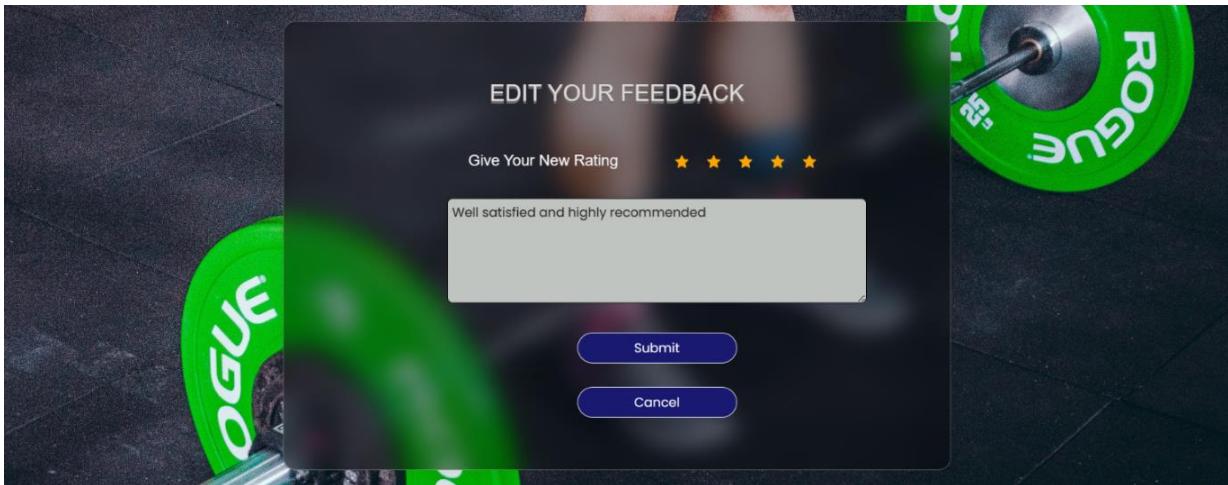


Figure 10.16 – Customer Affairs Management - Instructor feedback edit UI (user view)

A screenshot of a mobile application interface titled "SERVICE FEEDBACK LIST". It shows a table of feedback entries with columns for Date, Customer Name, Email, Rating, Feedback, Approve, and Reject. Each row has a "View Instructor Feedback List" button and a "Generate Feedback Report" button. The table data is as follows:

Figure 10.17 – Customer Affairs Management - service feedback Approval UI (Admin view)

A screenshot of a mobile application interface titled "GIVE YOUR FEEDBACK". It includes fields for "Full name" (with a person icon), "Email Address" (with an envelope icon), "Select Your Fitness Instructor" (with a dropdown menu showing "Select"), "Rate Your Fitness Instructor" (with five yellow stars), and a text input field for "Enter your opinions here.". At the bottom are two buttons: "Submit" and "Cancel". The background shows a person working out on a machine.

Figure 10.18 – Customer Affairs Management - Instructor feedback Insert UI (user view)

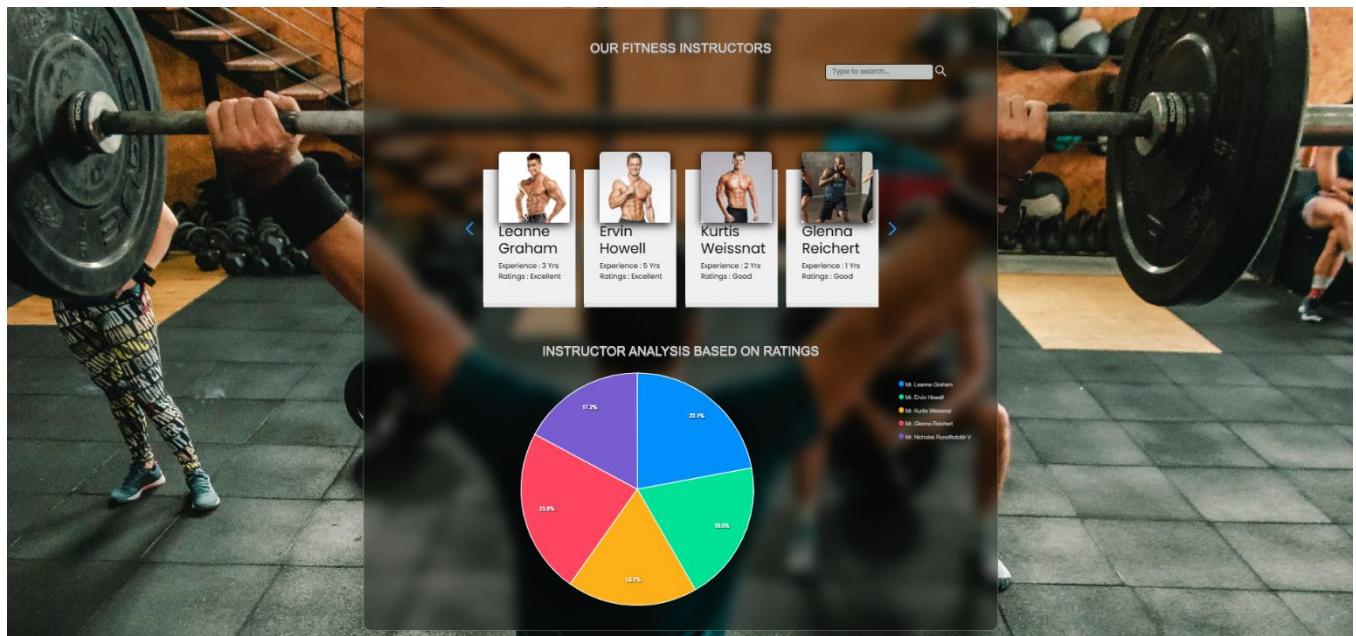


Figure 10.19 – Instructor feedback static view and search instructor UI (User view)

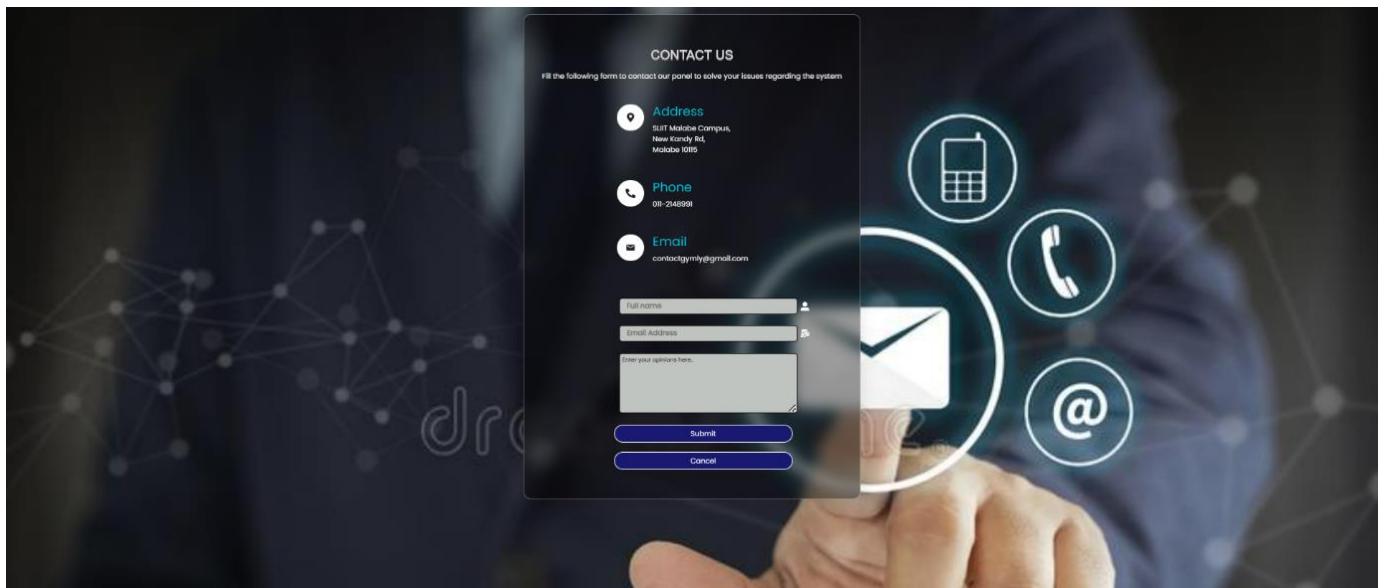


Figure 10.20 – Customer Affairs Management – Contact Us UI (User view)

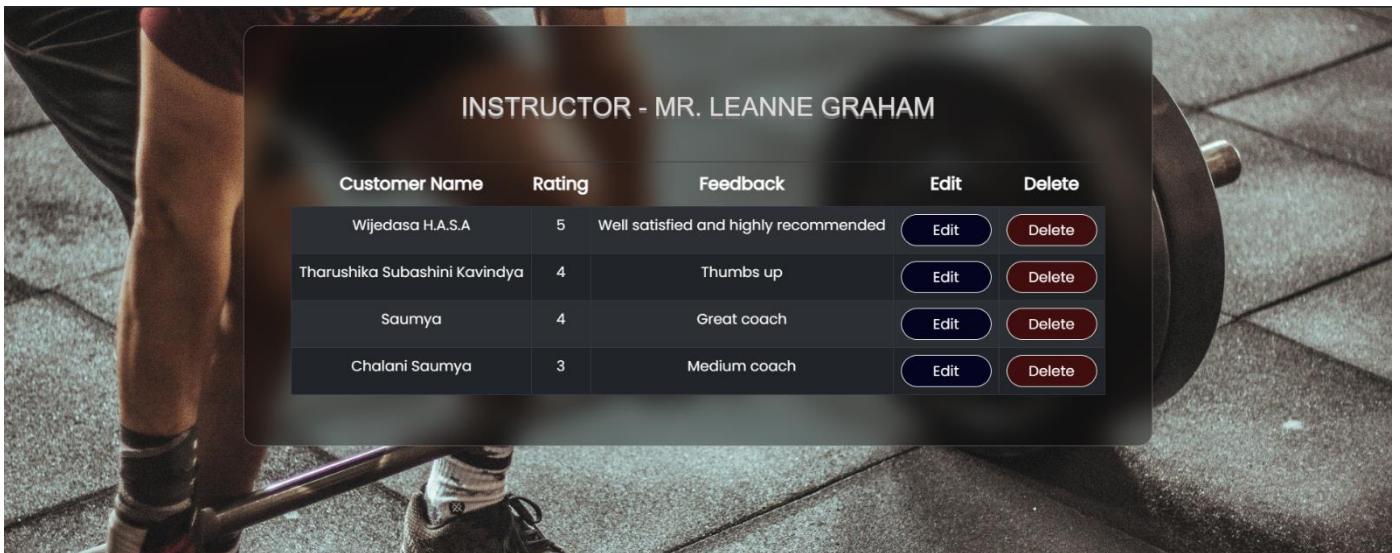


Figure 10.21 – Customer Affairs Management - Instructor profile UI (User view)

Package Management - IT21378270

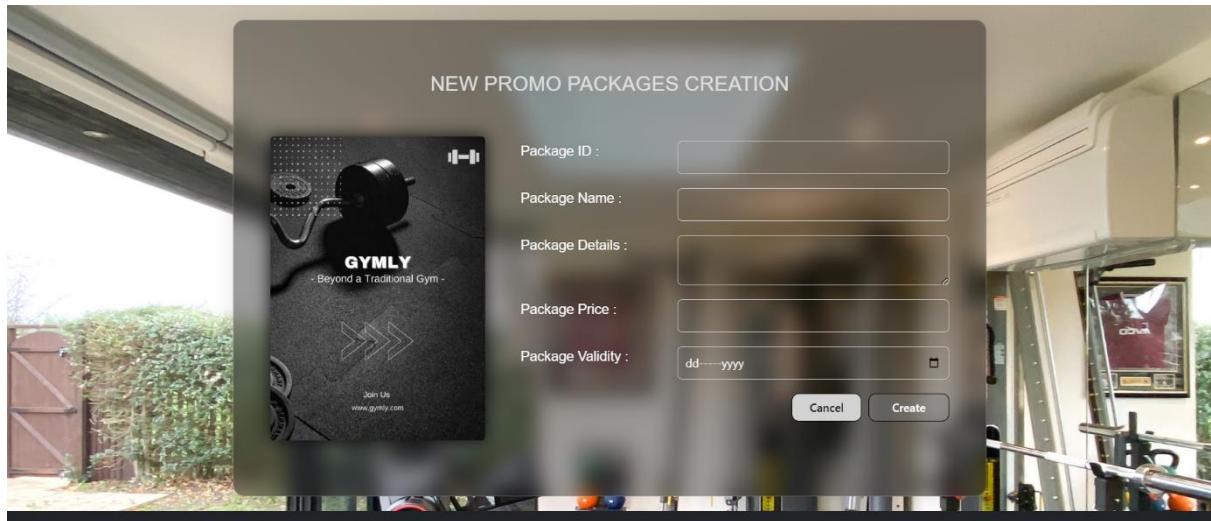


Figure 10.22 – Package Management : New promo package insert page (Manager view)

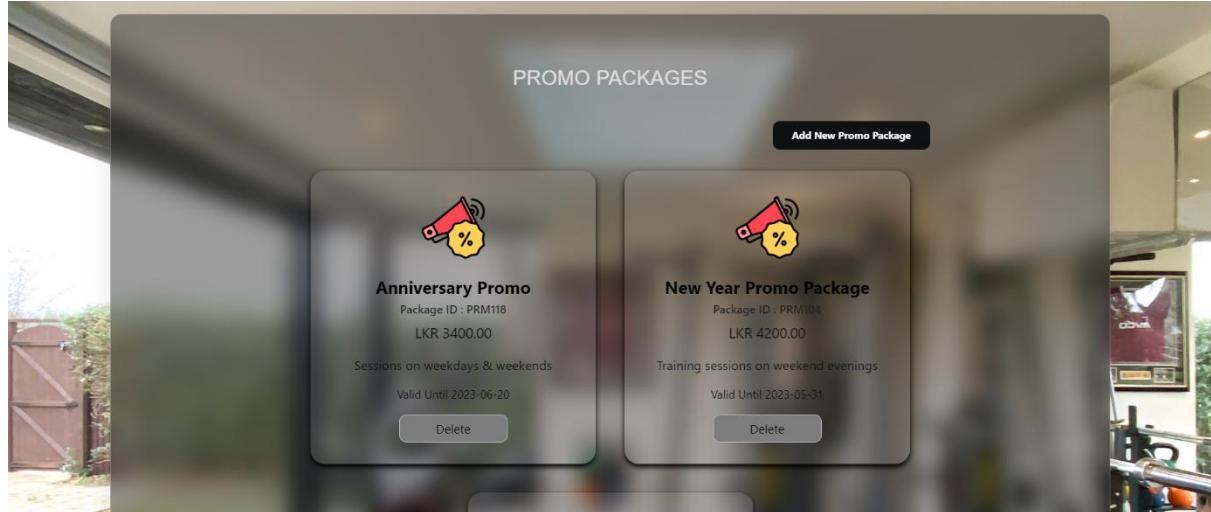


Figure 10.23 – Package Management : promo package display page (Manager view)

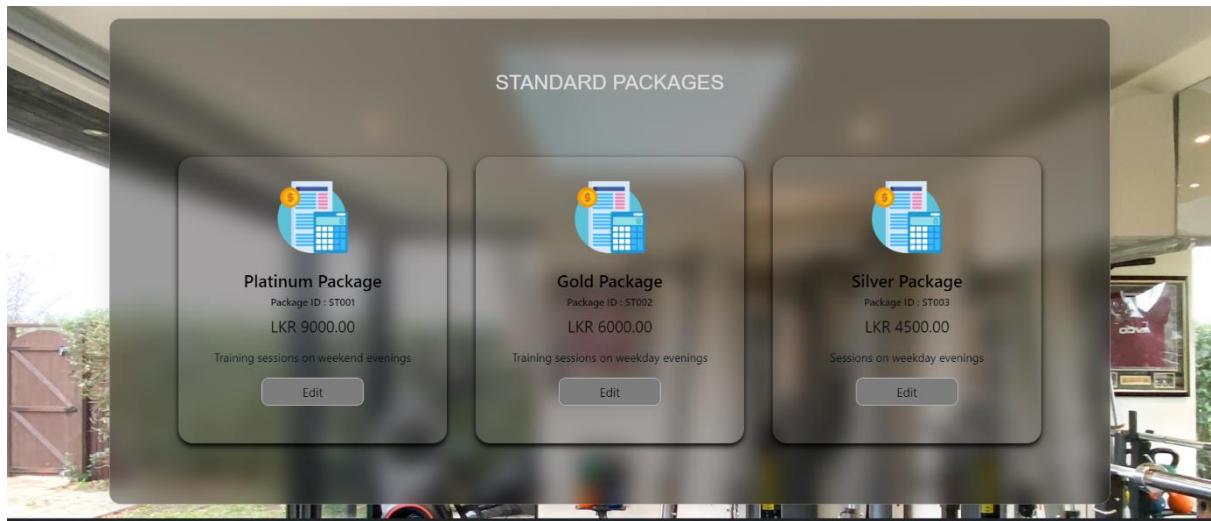


Figure 10.24 – Package Management : standard package display page (Manager view)

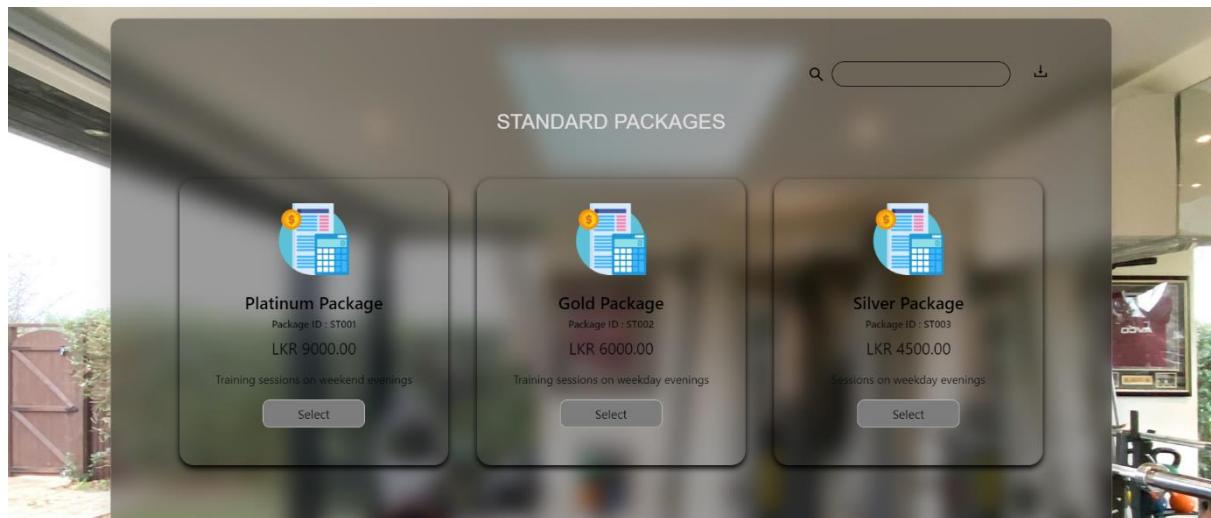


Figure 10.25 – Package Management : Standard package display page (User view)

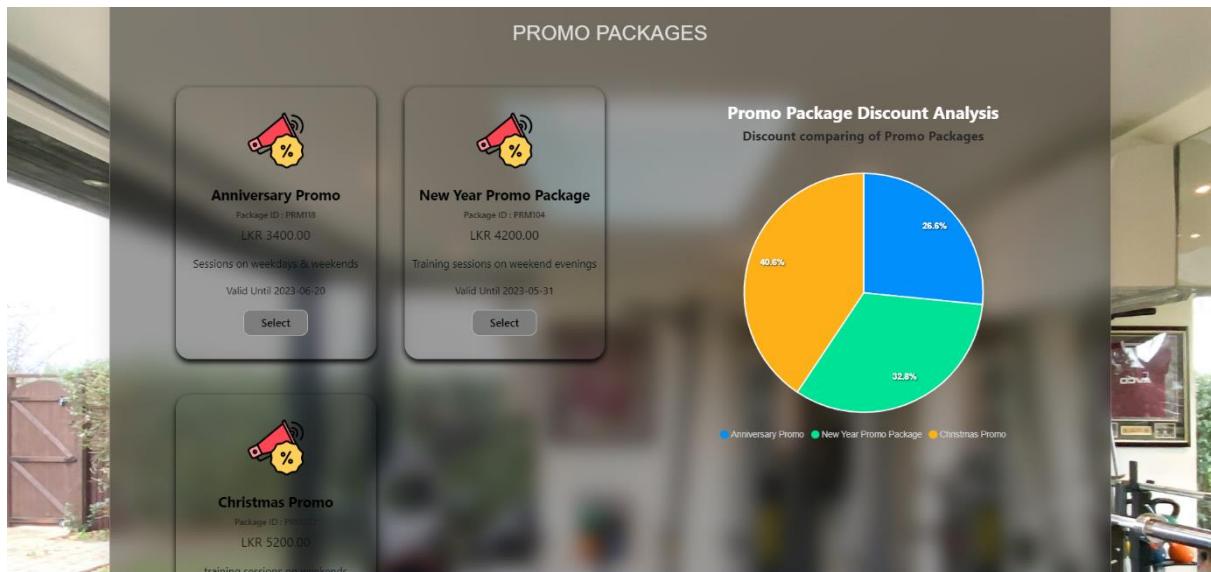


Figure 10.26 – Package Management : promo package graphical representation in chart (User view)

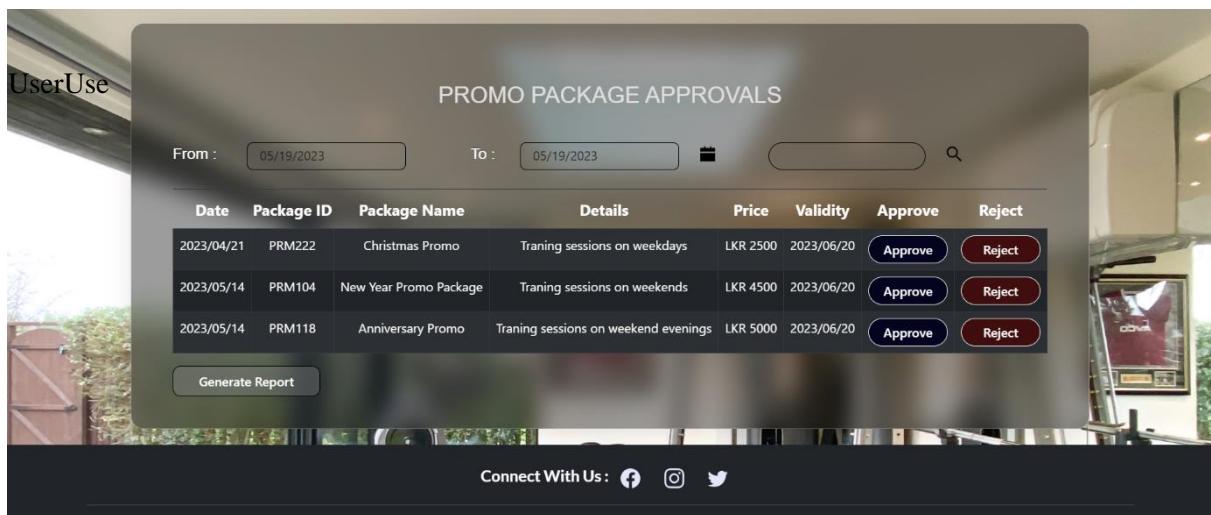
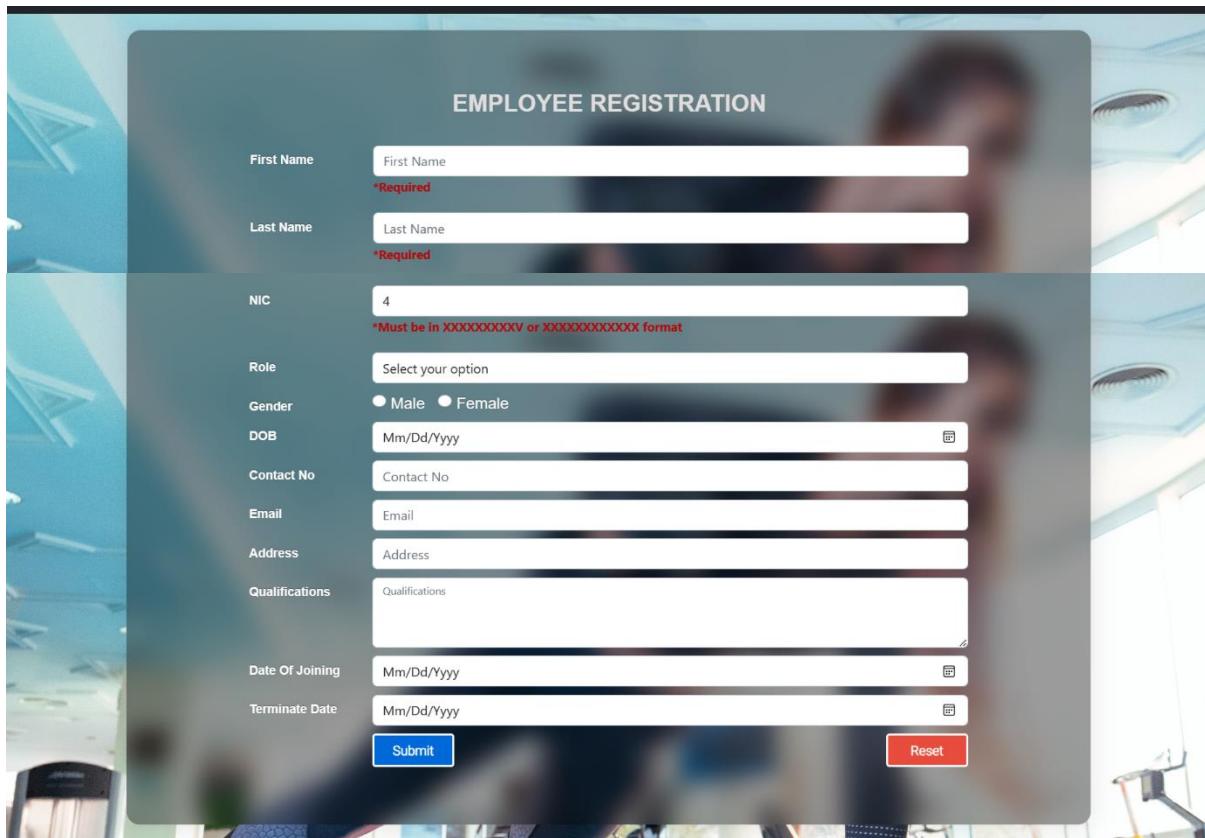


Figure 10.27 – Package Management package approval list UI (Admin view)

Employee Management - IT21349560



The image shows a screenshot of an Employee Registration form titled "EMPLOYEE REGISTRATION". The form is displayed on a computer screen with a blurred background showing an office environment. The form fields include:

- First Name:** Text input field labeled "First Name" with a red asterisk indicating it is required.
- Last Name:** Text input field labeled "Last Name" with a red asterisk indicating it is required.
- NIC:** Text input field containing the value "4" with a validation message below stating "Must be in XXXXXXXXXV or XXXXXXXXXXXX format".
- Role:** A dropdown menu labeled "Select your option".
- Gender:** Radio button group with options "Male" and "Female".
- DOB:** Text input field labeled "Mm/Dd/Yyyy".
- Contact No:** Text input field labeled "Contact No".
- Email:** Text input field labeled "Email".
- Address:** Text input field labeled "Address".
- Qualifications:** Text input field labeled "Qualifications".
- Date Of Joining:** Text input field labeled "Mm/Dd/Yyyy".
- Terminate Date:** Text input field labeled "Mm/Dd/Yyyy".

At the bottom of the form are two buttons: a blue "Submit" button and a red "Reset" button.

Figure 10.28 – Employee Management – Employee Registration form UI (Admin view)

Employee ID ↑	Name	Email	Job Role	Salary	Actions
645df7d8e83f7305fa431f91	Nimna	nimnacekanayake@gmail.com	fitness instructor	LKR 106,000.00	
645fe64889e2ddb9c685c090	Chamalka	chamalka123@gmail.com	cashier	LKR 75,000.00	
645fe69a89e2ddb9c685c094	J.A.Vidusha	vidushatjayaweera@gmail.com	operation manager	LKR 0.00	
645fe79589e2ddb9c685c098	Devinda	devinda456@gmail.com	membership manager	LKR 0.00	
645fecfd989e2ddb9c685c09c	Sewmini	sewminiadhikari@gmail.com	cleaner	LKR 0.00	

Figure 10.29 – Employee Management – Employee details List UI (Admin view)

Employee ID	645fe69a89e2ddb9c685c094
Select Month	-----
Basic Salary	Basic Salary
OT Hours	OT Hours
OT Rate	OT Rate
OT Total	OT Total
Bonus	Bonus
Total Salary	Total Salary

Figure 10.30 – Employee Management – Employee salary assign UI (Admin view)

Employee Leaves						
Employee ID ↑	Name	Job Role	Leave Type	Leave From	Leave To	Actions
CL010	Lakindu	Cleaner	Casual	4/12/2023	4/12/2023	<button>Approve</button> <button>Reject</button>
CL010	Lakindu	Cleaner	Medical	4/12/2023	4/12/2023	<button>Approve</button> <button>Reject</button>
CL010	Lakindu	Cleaner	Medical	4/12/2023	4/12/2023	<button>Approve</button> <button>Reject</button>
CM001	Sithum	Customer Affairs Manager	Casual	4/12/2023	4/12/2023	<button>Approve</button> <button>Reject</button>
OM001	Vidusha	Operation Manager	Annual	4/12/2023	4/12/2023	<button>Approve</button> <button>Reject</button>

Figure 10.31 – Employee Management – Employee leave confirmation UI (Admin view)

EMPLOYEE SALARY UPDATE	
Employee ID	645fe64889e2ddb9c685c090
Select Month	August 2023
Basic Salary	65000
OT Hours	5
OT Rate	1000
OT Total	5000
Bonus	5000
<input type="button" value="Update"/> <input type="button" value="Cancel"/>	

Figure 10.32 – Employee Management – Employee Salary update UI (Admin view)

Payment Management - IT21362958

The screenshot shows a user interface for managing payment details. At the top center, it says "Payment". Below that, there are two sets of radio buttons: "Payment type" (Monthly, Annually) and "Payment method" (Cash, Card). A large input field labeled "Enter Card Number" is below the payment type section. Another input field labeled "Enter Month" is below the payment method section. A dropdown menu labeled "Choose Year.." is next to the month field. To the right of the year dropdown is a field labeled "CVV". At the bottom of the form, a note reads "If You Select Monthly Or Annually Payment With Card, You Must Save Your Card". There are three buttons at the bottom: "Delete", "Edit", and "Submit".

Figure 10.33 – Payment Management – payment details form UI (User view)

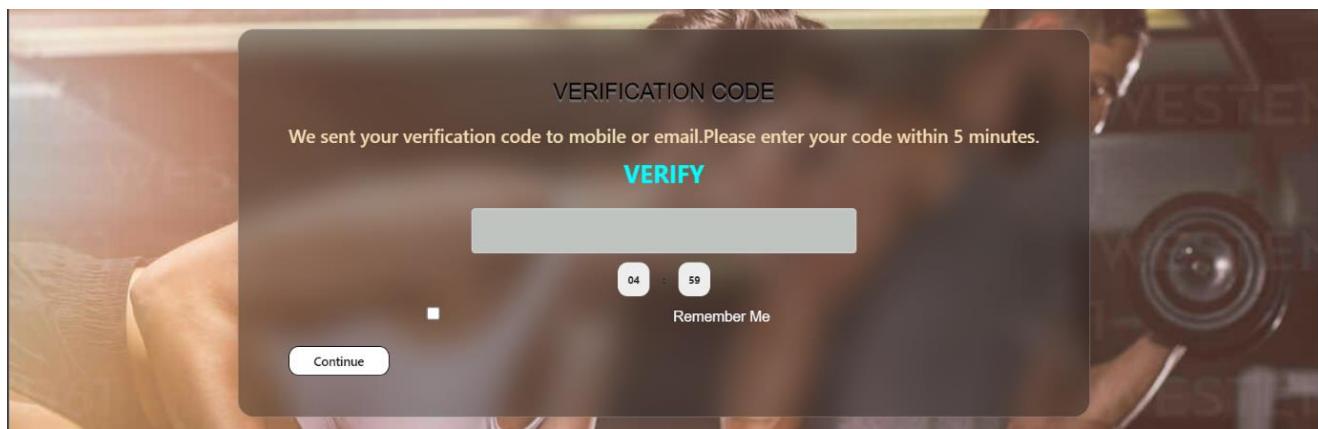


Figure 10.35 – Payment Management – payment membership token UI (user view)

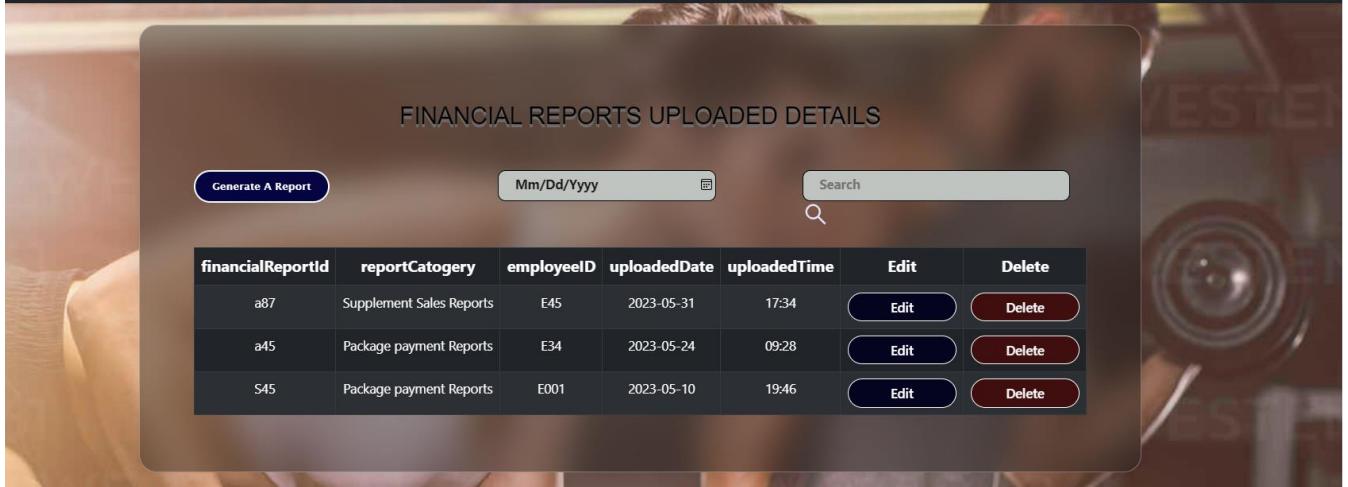


Figure 10.35 – Payment Management – payment membership token UI (user view)

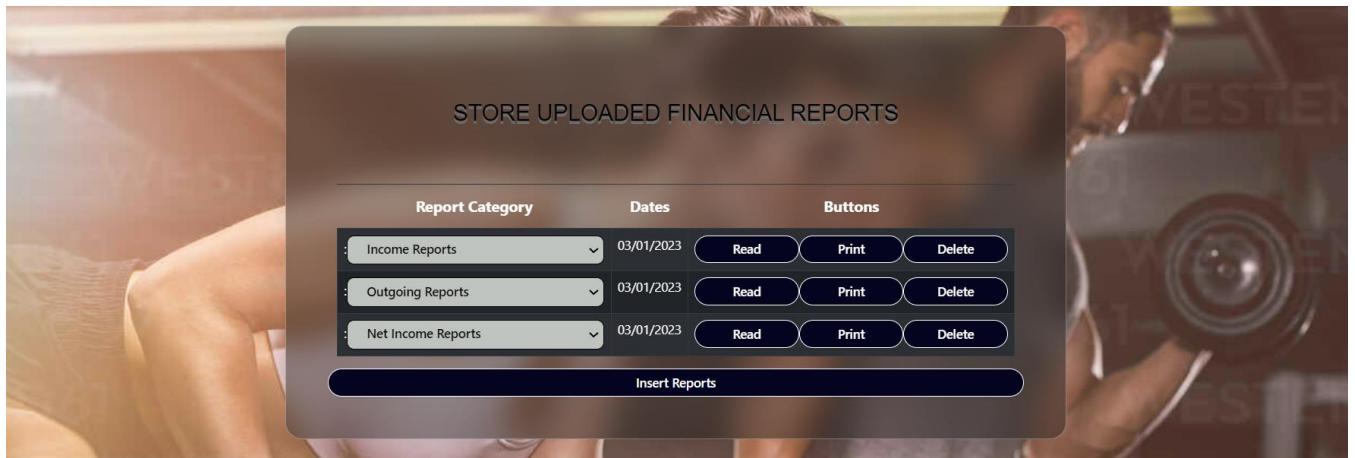
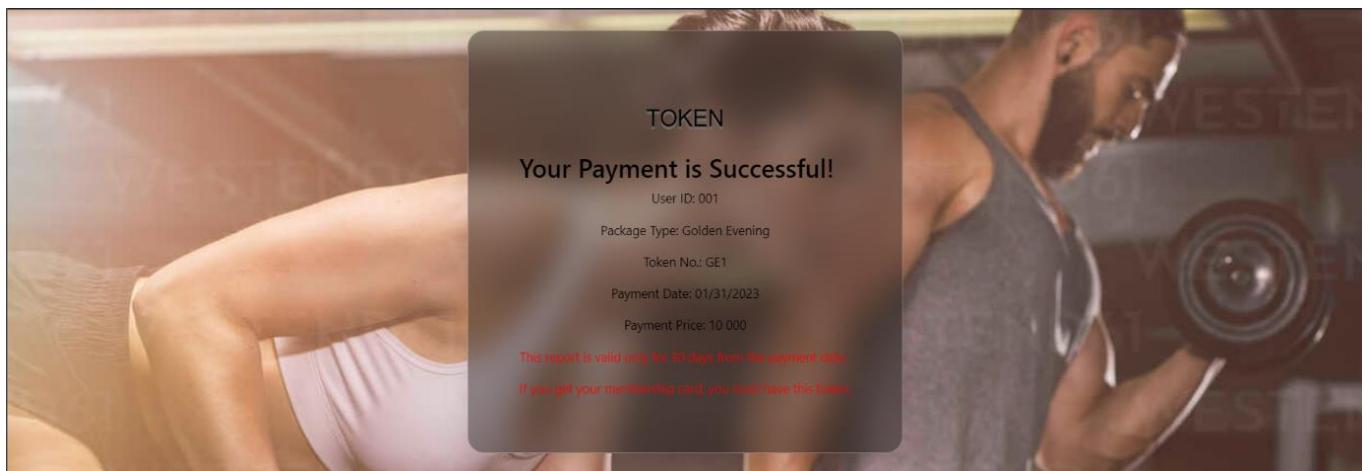


Figure 10.16 – Payment Management – payment upload UI (Admin view)

Supplements Management - IT21329456

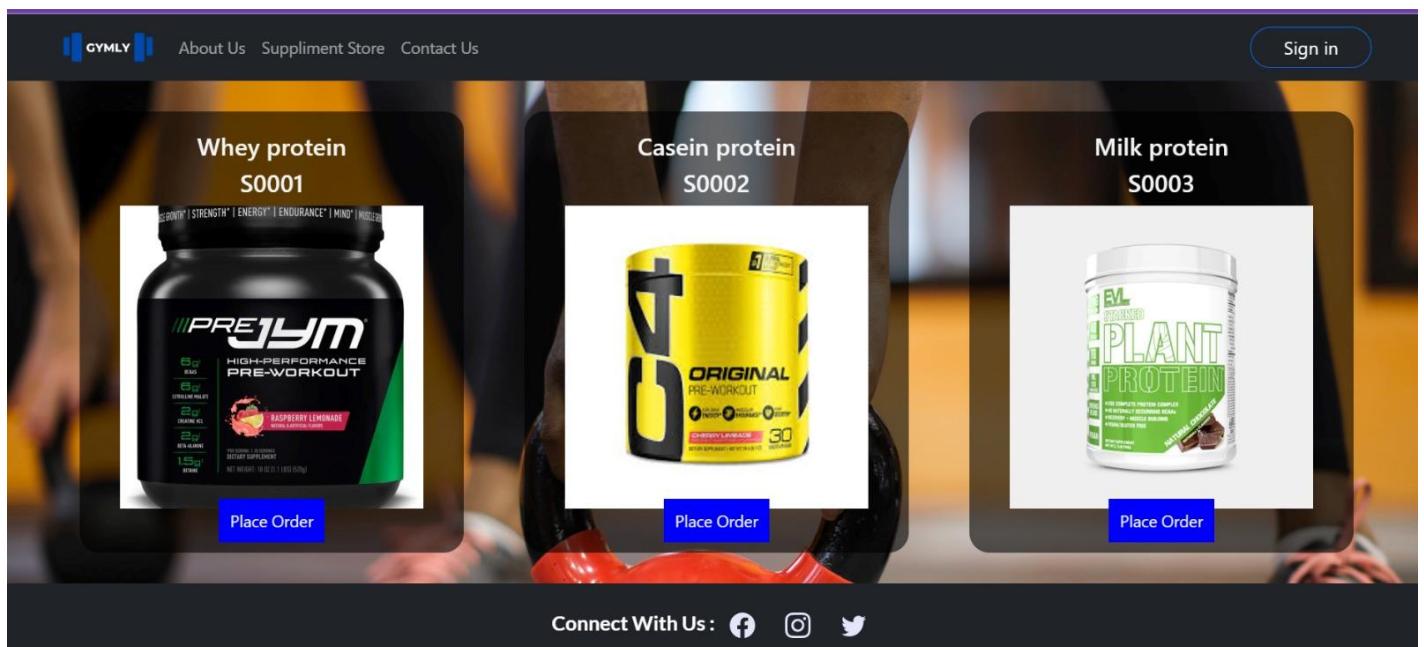


Figure 10.40 – Supplements Management – Supplements store UI (User view)

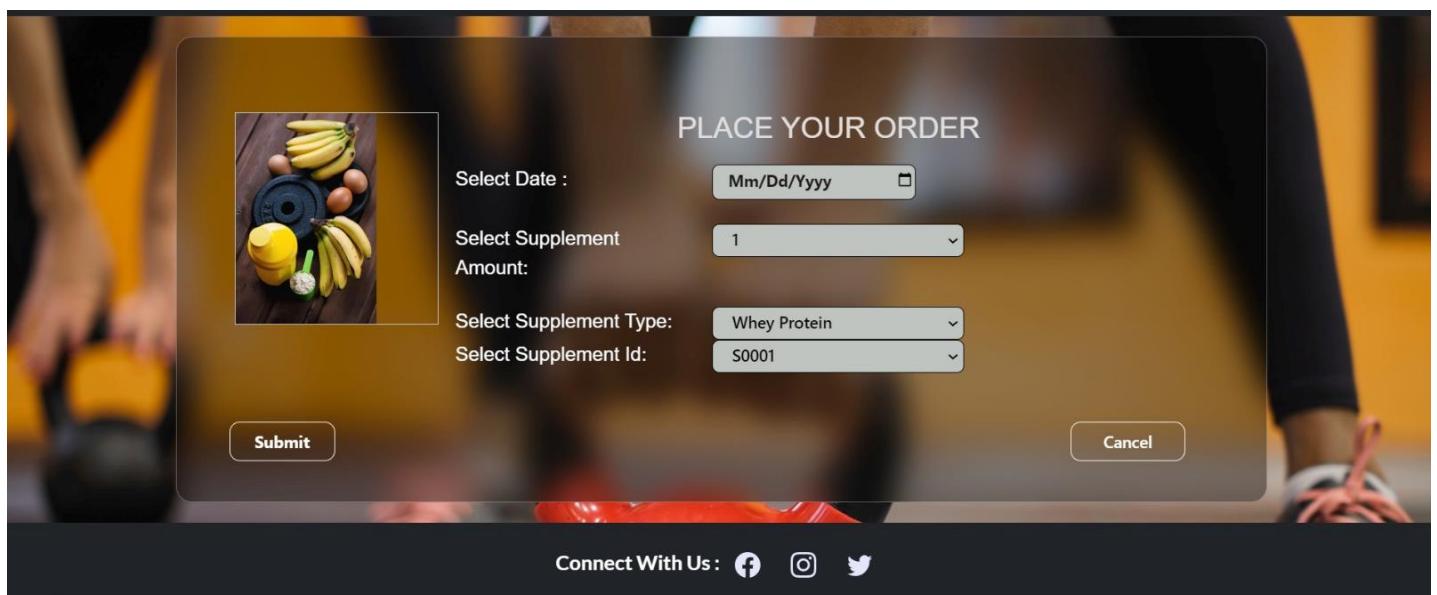


Figure 10.41 – Supplements Management – Supplements place order UI (User view)

YOUR SUPPLEMENT ORDER

Supplement Id	Supplement Date	Supplement Type	Supplement Quantity	Edit	Delete
S0002	2023-05-17	Casein protein	6	Edit	Delete
S0002	2023-05-15	Casein protein	6	Edit	Delete
S0002	2023-05-10	Casein protein	4	Edit	Delete
0003	2023-05-11	Casein protein	6	Edit	Delete
S0003	2023-05-17	Casein protein	6	Edit	Delete

Figure 10.43 – Supplements Management – Supplements order list (User view)

EDIT YOUR ORDER

Select Date :

Select Supplement Amount:

Select Supplement Type:

Select Supplement Id:

Connect With Us :
f
i
t

Figure 10.44 – Supplements Management – Edit supplement order (User view)

Supplier Management - IT21181160

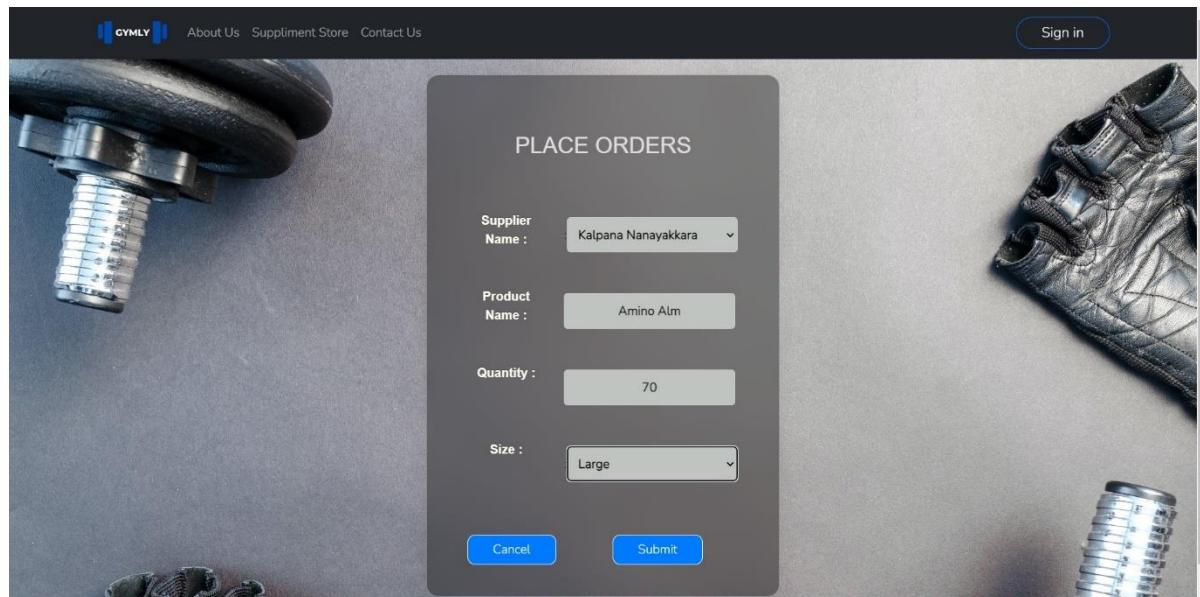


Figure 10.45 – Supplier Management – place order to supplier (Admin view)

The screenshot shows a table titled "RECEIVED ORDERS" listing six pre-orders. The columns are UserId, SupplierName, Product Name, Quantity, Size, Edit, and Delete. Each row includes a "Generate A Report" button, a date input field, and a search bar.

UserId	SupplierName	Product Name	Quantity	Size	Edit	Delete
45821463#23669545	Denuwan Asitha	Amino Alm	25	Large	<button>Edit</button>	<button>Delete</button>
45821463#23669545	Lakmal Withanage	Caffeine	18	Large	<button>Edit</button>	<button>Delete</button>
45821463#23669545	Denuwan Asitha	Mignite	7	Large	<button>Edit</button>	<button>Delete</button>
45821463#23669545	Kalpana Nanayakkara	Manganese	5	Large	<button>Edit</button>	<button>Delete</button>
45821463#23669545	Vishwajith Kasthoori	Metaline	8	Large	<button>Edit</button>	<button>Delete</button>
45821463#23669545	Kalpana Nanayakkara	Amino Alm	70	Large	<button>Edit</button>	<button>Delete</button>

Figure 10.16 – Supplier Management – Supplement pre-order list (Admin view)

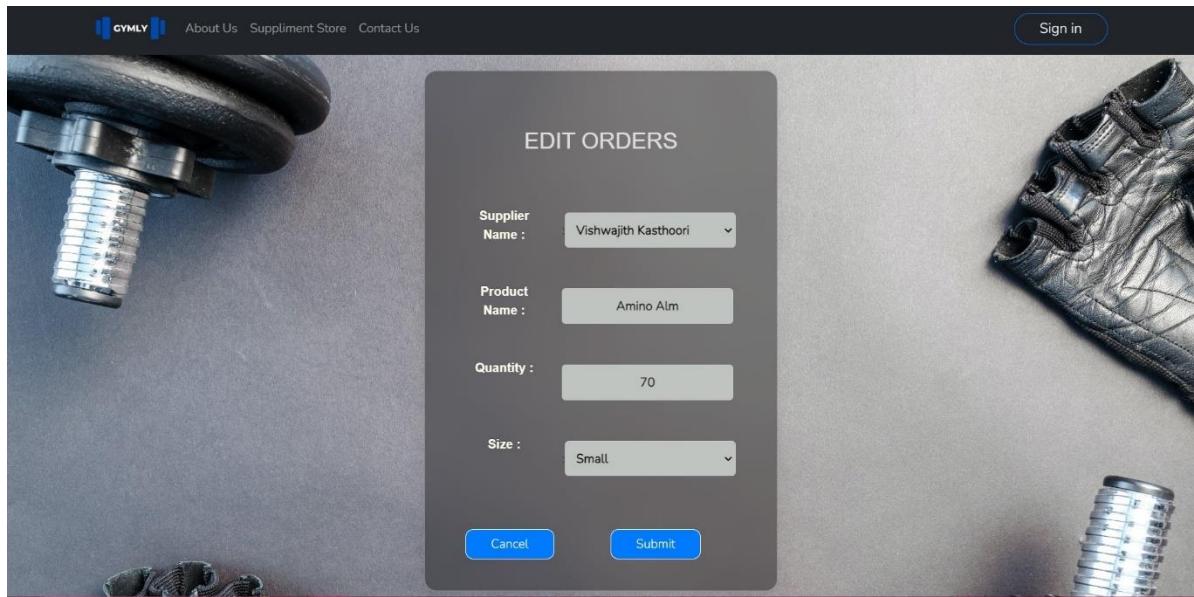


Figure 10.16 – Supplier Management – Edit Supplement pre-order list (Admin view)

CHAPTER 4 - TESTING

TEST CASES AND RESULTS

Training Schedule Management – IT21377280

Table 11 - Test case for create schedule

Project ID: ITP2021_S2_B01_G07	
Project Name: GYMLY - Gym Management System	
Testing Function: Create new training schedule request	
Test ID: Test_001	Test case designed and executed by: Reg No. - IT21377280 Name - Rajapaksha C.S.
Test Priority	Medium
Test Description: Create a request for workout session by a gym user with fitness instructor	
Pre-Conditions: Gym user must be a registered member & must be sign in to the system Fitness Instructor must be a registered fitness instructor with the gym	
Test Steps: Step 1: Login to the system and navigate to the Schedule Daily Training Timeslot page. Step 2: Fill all fields in the request page and complete all relevant validations. Step 3: Click on “Save” button.	
Pass-Conditions: All the fields in the form are required to create new schedule request	

Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass/Fail)	Comment
Test_001a	Payment token (as this can be done after doing payment, payment token is disabled by default), time slot, Fitness instructor, and training section is required. Inputs :- Default schedule time : 04.00pm-06.0pm Fitness Instructor: Namal Wijerathne Section: Weekend	A new training timeslot request should be added	A new training schedule is added, and all the request details are stored in the database. Both newly added request and existing requests can be seen in the Schedule Training Timeslot Page.	Pass	New training schedule adding was executed successfully.

User Management - IT21281778

Table 12 - Test case for Registering a User

Project ID: ITP2021_S2_B01_G07	
Project Name: GYMLY	
Testing function: User Management – User Registration	
Test case ID: Test_02	Test case designed and executed by: Reg. No- IT21281778 Name- Alwis P.K.D.L.W
Test Priority (High/Medium/Low):	High
Test description: An unregistered user visits the website of a GYMLY and navigates to the user registration Page. The unregistered user fills out the registration form and pays an admission fee. User Get a membership.	
Preconditions: <ul style="list-style-type: none">• The GYMLY Gym Management System is installed and accessible.• The user should be a Registered User.	
Test Steps: Step 1: Unregistered user Navigate to the GYMLY Gym Management System website. Step 2: Locate the registration button on the homepage. Step 3: Click the registration button to access the registration form. Step 4: Fill in the required fields with valid information, ensuring uniqueness for the email address and username. Step 5: Click the check box to agree to the terms and conditions. Step 6: Click the next page button to proceed to the payment section. Step 7: Select a valid payment method. Step 8: Enter payment details. Step 9: Submit the registration form. Step 10: Verify that the user receives a receipt for the payment and a registration details report.	
Pass-conditions: <ul style="list-style-type: none">• The user is successfully registered in the GYMLY Gym Management System.	

- The user receives a receipt for the payment.
- The user receives a registration details report.
- The admin approves the new user's registration in the system.

Table 13 - Test case results for Registering an Unregistered User

Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass / Fail)	Comment
Test_02a	<p>1. Registration form filled with valid information:</p> <p>Full Name: Lakindu Widuraga</p> <p>Email: Lakindu@gmail.com</p> <p>Username: Lakindu123</p> <p>NIC:200119203416</p> <p>Password: test123</p> <p>Gender: Male</p> <p>Birthday: 2001-07-10</p> <p>Height: 178Cm</p> <p>Weight:89Kg</p> <p>Address: Colombo, Sri Lanka</p> <p>Phone Number:0769114371</p> <p>2. Terms and conditions checkbox checked.</p> <p>3. Click the next page button</p> <p>4.Valid payment method selected: Credit Card</p>	<p>A successful registration confirmation message</p> <p>Receipt for the payment received.</p> <p>Registration details report generated.</p>	<p>User Success Fully Registered to the System.</p> <p>User get Receipt for the payment and Registration details Report</p>	Pass	Successfully registered without errors

	<p>5. Valid payment details entered:</p> <p>Card Number: 1234 5678 9012 3456 Expiry Date: 05/25 CVV: 123</p>				
Test_02 b	<p>The registered User going to create a new account.</p> <p>1. Registration form filled with valid information:</p> <p>Full Name: Lakindu Widuraga</p> <p>Email: Lakindu@gmail.com</p> <p>Username: Lakindu</p> <p>NIC:200119203416</p> <p>Password: test123</p> <p>Gender: Male</p> <p>Birthday: 2001-07-10</p> <p>Height: 178Cm</p> <p>Weight:89Kg</p> <p>Address: Colombo, Sri Lanka</p> <p>Phone Number:0769114371</p> <p>2. Terms and conditions checkbox checked.</p> <p>3. Click the next page button</p>	<p>Error message displayed indicating that the chosen Email that is already in the system.</p> <p>User registration is not successful.</p> <p>No receipt for the payment received.</p> <p>No registration details report was generated.</p>	<p>Error message to show email address is already in the system.</p> <p>User can not redirect to the next page.</p>	Fail	<p>Can not register with the same email address again.</p>

Customer Affairs Management - IT21489914

Table 14 - test case customer affairs managemenet

Project ID: ITP_2023_Y2_S2_WE7
Project Name: "Gymly" Gym Management System
Testing function: Customer Affairs Management System
Test case ID: Test_003
Test case designed and executed by: Reg. No- IT21489914 Name- Wijedasa H.A.S.A
Test Priority (High/Medium/Low): High
Test description: <ol style="list-style-type: none">1. Verify successful feedback form submission.2. Approve/Reject feedback provided by the customer before displaying them on the relevant fitness instructor's profile and generate instructor feedback report and service feedback report.
Preconditions: <ol style="list-style-type: none">1. Users must select a feedback option.2. Customer service manager must log in to the system with his EmployeeID and NIC.
Test Steps: <ol style="list-style-type: none">1. Step 1: The user selects a feedback option and prompt to the relevant feedback form. Step 2: Enter full name, email address, instructor name (if instructor feedback option is selected), ratings, and feedback description. Step 3: Click on the "submit" button. Step 4: System prompts "Feedback added successfully" message. Step 5: Click on the "ok" button and navigate to the relevant fitness instructor's profile. Step 6: Read the provided feedback on the relevant fitness instructor's profile. Step 7: Decide to edit the provided feedback. Step 8: Click on the "Update" button. Step 9: System prompt "Feedback updated successfully" message. Step 10: Decide to delete the provided feedback. Step 11: Click on the "Delete" button. Step 12: System prompts "Feedback deleted successfully" message.2. Step 1: The Customer service manager logs in to the system with his employee ID and NIC. Step 2: Prompt to the feedback list page. Step 3: Read the service feedback and instructor feedback provided by the user. Step 4: Validate the feedback. Step 5: Decide to approve the feedback. Step 6: Click on the "Approve" button. Step 7: System prompts "Feedback approved successfully" message. Step 8: Decide to reject the feedback Step 9: Click on the "Reject" button. Step 10: System prompts "Feedback rejected successfully" message. Step 11: Decide to generate a feedback report Step 12: Click on the "Generate feedback report" button. Step 13: Download feedback report

Pass-conditions:

Table 15test case customer affairs management confirmation

Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass / Fail)	Comment
Test_003a	1.User's full name, User's email address, Instructor's name (if instructor feedback option is selected), Rating, Feedback description .	Store user's details in the database successfully. Issue the membership token successfully. The system efficiently stores form details in the database, ensuring their information is securely stored for future retrieval. Additionally, the system successfully retrieves the data from the database to the relevant fitness instructor's profile, providing the customer to edit or delete submitted feedback for efficient user experience.	When the user submits the form, the system performs input validation and displays error messages if needed. If there are no errors, a popup message confirms successful data storage. Form details are securely stored in the database, ensuring persistence and easy retrieval. Additionally, the system successfully retrieves form data on relevant fitness instructor's profile , granting access to the customer to edit/delete the submitted feedback. This streamlined process enhances data integrity and feedback management.	Pass	Form validations are displaying successfully. Popup messages display successfully. Record inserted to the database successfully. Record retrieved from the database successfully

		<p>2.Employee ID and NIC.</p> <p>System validates employee's login credentials.</p> <p>Approve/reject feedback and generate feedback report successfully.</p> <p>When an employee attempts to log in, the system validates their login credentials, ensuring the accuracy and security of the login process. This helps protect sensitive information and restricts access to authorized personnel only.</p> <p>On the feedback list page, the system successfully approves or rejects feedback. This allows to validate the user-provided feedback before displaying it on the relevant fitness instructor's profile. This feature avoids the harm cause to the dignity of the institute due to informal feedback. Additionally, the customer service manager can generate and download the feedback reports for future use.</p>	<p>When an employee tries to log in to the system, their login credentials undergo thorough validation to ensure the authenticity and integrity of the login process. This validation mechanism safeguards sensitive information and guarantees that only authorized personnel can access the system.</p> <p>Moreover, on the feedback list page, the system efficiently handles the approval of customer feedback. This feature avoids the harm cause to the dignity of the institute due to informal feedback. Additionally, customer service manager can generate and download the feedback reports for future use.</p>	Pass	<p>Feedback approved / rejected successfully.</p> <p>Feedback reports generated successfully.</p>
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Package Management - IT21378270

Table 16 - package management

Project ID: ITP_2023_Y2_S2_WE7	
Project Name: GYMLY - Gym Management System	
Testing Function: Add new Promo package	
Test ID: Test_004	Test case designed and executed by: Reg No. - IT21378270 Name - Wimaladharma T. H. Y. B.
Test Priority	Medium
Test Description: Add a new promo package for special seasons (like Christmas and New Year....)	
Pre-Conditions: The membership Manager must be signed into the system	
Test Steps: Step 1: Log in to the system and navigate to the new promo package adding page. Step 2: Fill all fields in the Create New Promo page and complete all relevant validations. Step 3: Click on the “Submit” button. Step 4: System prompts “New Promo Package Created Successfully” message.	
Pass-Conditions: All the fields in the form are required to create a new promo package	

Table 17 - New promo package creation

Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass/Fail)	Comment
Test_004a	Package ID Package Name Package Details Package Price Package Validity	The newly created promo package should be added to the database and shown on Promo Packages and Membership Packages pages. Also, the pie chart showing promo package prices should be updated with the new package.	The database should be updated with the newly created Promo Package. Both newly created and existing promo packages should be on the Promo Packages page (admin side page) and the Membership Packages page (user page to see all packages). Also, the newly added package should be shown in the pie chart on the Membership Packages page.	Pass	New promo package creation was executed successfully.

Table 18 - Update standard package details

Project ID: ITP_2023_Y2_S2_WE7	
Project Name: GYMLY - Gym Management System	
Testing Function: Edit Standard Package details	
Test ID: Test_005	Test case designed and executed by: Reg No. - IT21378270 Name - Wimaladharma T. H. Y. B.
Test Priority	Medium
Test Description: Edit Standard Package details when need to be updated	
Pre-Conditions: The membership Manager must be signed into the system	
Test Steps: Step 1: Log in to the system and navigate to the Standard Package page. Step 2: The system loads existing values to the input fields from the database. Step 3: Edit all fields that need to be updated. Step 4: Click on the “Save” button. Step 4: System prompts “Data has been updated successfully” message.	
Pass-Conditions: All the fields in the edit form are required to update standard package details.	

Table 19 - test case update standard packages

Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass/Fail)	Comment
Test_005_a	Package ID Package Name Package Details Package Price	Updated standard package details should be shown on the Standard Packages page and Membership Packages pages.	The database should be updated with the newly added details. Updated details for the standard package should be there in the relevant package details on the Standard Packages page (admin side page) and Membership Packages page (user page to see all packages).	Pass	Update the Standard Package was executed successfully.

Employee Management - IT21349560

Table 20 - test case Employee Management

Project ID: ITP_2023_Y2_S2_WE7	
Project Name: Gymly	
Testing function: Employee Management - Register Employee	
Test case ID: Test_006	Test case designed and executed by: Reg. No- IT21349560 Name- Jayaweera J.A.V.T
Test Priority (High/Medium/Low):	High
Test description: When an employee is initially registered to the system, it should be ensured that the same employee has not been registered already.	
Preconditions: Operation manager should be logged into the system and a new employee should be available for registering.	
Test Steps: Step 1: Operation manager should be logged into the system Step 2: Operation manager has to navigate to the register employee page from the Employee dashboard Step 3: Fill in the employee details with the appropriate attributes Step 4: Click on submit button	
Pass-conditions: <ul style="list-style-type: none">• All the fields are required and validated to register a new employee.• Displays a message based on whether the registration is successful or not and if the employee cannot be registered, the database should not be updated accordingly. The vice versa should occur as appropriate	

Table 21 - Test case results for Registering an Employee

Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass / Fail)	Comment
Test_00 6a	<p>A new employee who joined the gym is undergoing the registration</p> <p>First Name: Vidusha</p> <p>Last Name: Jayaweera</p> <p>NIC: 200023700641</p> <p>Role: Cashier</p> <p>Gender: Male</p> <p>DOB: 08/24/2000</p> <p>Contact No: 0761329104</p> <p>Email: vidu@gmail.com</p> <p>Address: 128,Wepitiya,Bibiladeniya</p> <p>Qualifications: NVQ Level 4</p> <p>Date of Joining; 10/18/2022</p> <p>Terminate Date: 10/18/2025</p>	<p>Employee profile should be created automatically</p> <p>Display message “Employee has been registered!” and redirect to employee dashboard</p> <p>Database should be updated accordingly with the new employee’s details</p>	<p>Registration successful message displayed and redirected to the employee dashboard</p> <p>Respective values successfully appeared in the database</p>	Pass	Registration works without any errors
Test_00 6b	<p>Register an already registered employee into the system again</p> <p>First Name: Vidusha</p> <p>Last Name: Jayaweera</p> <p>NIC: 200023700641</p> <p>Role: Cashier</p> <p>Gender: Male</p> <p>DOB: 08/24/2000</p> <p>Contact No: 0761329104</p> <p>Email: vidu@gmail.com</p> <p>Address:</p>	<p>An employee profile should not be created as one already exists</p> <p>Display message “Employee already exists!” and reload page with empty fields</p> <p>Database should not be updated with the new records</p>	<p>Error message shown and the same page reloads with empty fields</p> <p>The database has not been altered with the new records.</p>	Pass	Test case passed with proper logic implemented

	128,Wepitiya,Bibiladeniya Qualifications: NVQ Level 4 Date of Joining; 10/18/2022 Terminate Date: 10/18/2025			
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Table 22 - Test case for Assign Employee Salary

Project ID: ITP_2023_Y2_S2_WE7	
Project Name: Gymly	
Testing function: Employee Management - Assigning employee salaries	
Test case ID: Test_007	Test case designed and executed by: Reg. No- IT21349560 Name- Jayaweera J.A.V.T
Test Priority (High/Medium/Low):	High
<p>Test description:</p> <p>Each month, the operation manager is responsible for assigning employee salaries. The system should ensure that the same employee is not assigned a salary for the same month, more than once.</p>	
<p>Preconditions:</p> <p>Operation manager should be logged into the system and the employee to whom the salary should be assigned, should be registered to the system</p>	
<p>Test Steps:</p> <p>Step 1: Operation manager should be logged into the system</p> <p>Step 2: Operation manager has to navigate to the Employee dashboard</p> <p>Step 3: Operation manager has to navigate to the Employee salary assignment page by clicking the assign salary button in the relevant employee's row in the employee summary table</p> <p>Step 4: Select the month and enter the basic salary, OT Hours, OT</p>	

Rate and bonus

Step 5: OT Total and Total Salary will be automatically calculated

Step 6: Click on the “Submit” button

Pass-conditions:

- All the fields are required and validated to assign salary
- Displays a message based on whether the salary assignment is successful or not and if the employee salary cannot be assigned, the database should not be updated accordingly. The vice versa should occur as appropriate

Table 23 - Test case for Assign Employee Salary

Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass / Fail)	Comment
Test_007a	Salary assigned to an employee for a new month which wasn't assigned previously. Month: October Year: 2023 Basic Salary: 30000 OT Hours: 5 OT Rate: 400 Bonus: 10000	OT Total and Total Salary should be calculated: OT Total: 2000 Total Salary: 42000 Display message “Salary assigned successfully!” and redirect to Employee dashboard	OT Total and Total Salary was automatically displayed as 2000 and 42000 accordingly Assigning successful message displayed and redirected to the Employee dashboard	Pass	Expectations met well as expected from the user

Test_007b	<p>Salary assigned to an employee for a month that was assigned previously.</p> <p>Month: October Year: 2023 Basic Salary: 30000 OT Hours: 5 OT Rate: 400 Bonus: 10000</p>	<p>OT Total and Total Salary should be calculated:</p> <p>OT Total: 2000 Total Salary: 32000</p> <p>Display a message “The salary for this employee has been assigned already!” and reload the form with empty fields.</p> <p>Database should not be updated.</p>	<p>OT Total and Total Salary was automatically displayed as 2000 and 42000 accordingly</p> <p>Error message shown and the same page reloads with empty fields.</p> <p>The database has not been altered with the new records</p>	Pass	Test case passed with proper logic implemented
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Payment Management - IT21362958

Table 24 - Testcase Payment Management

Project ID: ITP_2023_Y2_S2_WE7
Project Name: "Gymly" Gym Management System
Testing function: Payment Management system
Test case ID: Test_008
Test case designed and executed by: Reg. No- IT21362958 Name- Karunatileke P. T
Test Priority (High/Medium/Low): High
Test description: <ol style="list-style-type: none">1. verify package payment successfully and issue a membership token to get the gym membership.2. Upload all financial reports in the gym management system to the payment page.
Preconditions: <ol style="list-style-type: none">1. Users must select a package.2. Payment manager must log in to the payment section with his EmployeeID and NIC.
Test Steps: <ol style="list-style-type: none">1. Step 1: The user selects a package and enters the payment gateway page automatically. Step 2: Enter personal details and bank details. Step 3: Click on the "submit" button. Step 4: System prompts data insert successfully message. Step 5: Click on the "ok" button and navigate to the verification page. Step 6: Enter the verification code and click on the "Continue" button. Step 7: Users can get a membership token. Step 8: Click on the "update" button. Step 9: System prompt update successfully message. Step 10: Click on the "delete" button. Step 11: System prompts delete successfully message.2. Step 1: The payment manager logs in to the payment section with his employee ID and NIC. Step 2: Click on the "Insert Report" button. Step 3: Enters the upload financial reports page. Step 4: Enter the financial report details. Step 5: Click on the "submit" button. Step 6: System prompts data insert successfully message. Step 7: Click on the "ok" button and navigate to the financial report generation page. Step 8: Search for any report detail with the date. Step 9: Click on the "edit" button. Step 10: Enter the Edit page and insert details. Step 11: Click on the "save" button, and the system prompts update successfully message. Step 12: Click on the "delete" button. Step 13: System prompts delete successfully message. Step 14: Click on the "Generate reports" button. Step 15: Can get a report PDF.
Pass-conditions:

Table 25 - Test case payment creation

Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass / Fail)	Comment
Test_008	User's personal details and bank details. Verification code.	Store user's details in the database successfully. Issue the membership token successfully. The system efficiently stores user details in the database, ensuring their information is securely stored for future retrieval. This enables seamless user management and personalized experiences. Additionally, the system successfully issues membership tokens to users, providing them with access to exclusive benefits and privileges based on specific criteria or actions. These tokens enhance membership management and enable users to enjoy their membership perks. System validates employee's login credentials. Store the financial reports on the payment page successfully.	When the admin submits the form, the system performs input validation and displays error messages if needed. If there are no errors, a popup message confirms successful data storage. User details are securely stored in the database, ensuring persistence and easy retrieval. Additionally, the system successfully issues a membership token to the user, granting access to membership privileges and services. This streamlined process enhances data integrity, user management, and membership benefits. When an employee tries to log in to the system, their login credentials undergo thorough validation to ensure the authenticity and integrity of the login process. This validation mechanism safeguards sensitive information and guarantees that only authorized personnel can access the system. Moreover, on the payment page, the system efficiently handles the storage of financial reports. This feature enables the systematic and secure organization of critical financial data, resulting in effortless retrieval and accessibility whenever necessary. The storage of these reports significantly enhances transparency, facilitates seamless financial record-keeping,	Pass Pass	Error messages are displaying successfully. Popup messages display successfully. Record inserted to the database successfully. Error messages are displaying successfully.

	<p>Employee ID and NIC.</p> <p>Financial Report details and employee ID of who uploaded the reports.</p>	<p>When an employee attempts to log in, the system validates their login credentials, ensuring the accuracy and security of the login process. This helps protect sensitive information and restricts access to authorized personnel only.</p> <p>On the payment page, the system successfully stores financial reports. This allows for organized and secure storage of important financial data, ensuring easy access and retrieval when needed. Storing the reports enhances transparency and facilitates financial record-keeping within the system.</p>	<p>and contributes to the overall efficiency and reliability of the system.</p>	<p>Popup messages display successfully.</p> <p>The record was inserted into the database successfully.</p>
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Supplements Management - IT21329456

Table 26 - Testcase Supplements Management

Project ID: ITP_2023_Y2_S2_WE7
Project Name: "Gymly" Gym Management System
Testing function: Supplement Management system
Test case ID: Test_009
Test case designed and executed by: Reg. No- IT21329456 Name- Subawickrama N.S.P
Test Priority (High/Medium/Low): High 1. Test description: Verify supplement management functionality in the Gymly system.
Preconditions: 1. The customer must be logged in to the system
Test Steps: 1. Step 1: The user Search for an existing supplement in the system. Step 2: Select the supplement from the search results. Step 3: Click on the "Buy now" button. Step 4: System directs to "Place your order page." Step 5: Selects the details of the supplement(Type, Amount, Id, Date) Step 6: Enter "Submit" button. Step 7: System prompts "Order placed". Step 8: Users directs to "Order reading.". Step 9: Click on the "Edit" button. Step 10: System directs to "Edit your order page.". Step 11: Click on the "Save" button. Step 12: Click on the "Delete" button. Step 13: System prompts "Order deleted."
Pass-conditions:

Table 27 - testcase supplement place oder

Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass / Fail)	Comment
Test_009a	1.The user selects for an existing supplement in the system.	The system displays selected results for the entered keyword.	The system displays multiple selected results for "protein powder."	Pass	The selects functionality successfully retrieves relevant results based on the user's input. Error messages are displaying successfully. Popup messages display successfully.

					Record inserted to the database successfully.
	2.Test Input: Select keyword: "protein powder"			Pass	Error messages are displaying successfully. Popup messages display successfully. The record was inserted into the database successfully.

Supplier Management - IT21181160

Table 28 - Test Case Supplier

Project ID:	
Project Name: GYMLY	
Testing function: Make supplements orders.	
Test case ID: Test_010	Test case designed and executed by: Reg. No- IT21181160 Name- V.D. Thrimavithana
Test Priority (High/Medium/Low):	Medium
Test description: Make the supplement orders to the suppliers by the supplier manager.	
Preconditions: Supplier manager must have login to the system.	
Test Steps: Step 1: Open the system login page. Step 2: Enter the valid login credentials of the Supplier Manager. Step 3: Click on the "Login" button. Step 4: Verify that the Supplier Manager is successfully logged into the system and is redirected to the main dashboard or supplier management page.	
Pass-conditions: All the fields are required and validated to make a logi and the system maintains the security and privacy of supplier and order information.	

Table 2.4 2: Test case results for supplier manager login

Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass / Fail)	Comment
Test_010a	Supplier Manager's name, NIC, Gender, Age, ID enter to the login form	Direct to the Supplier Manager dashboard after validating all the fields of the form.	All the details were stored in the database and directed to the supplier manager dashboard.	Pass	Login to the system as a supplier manager was executed successfully

CHAPTER 5 - EVALUATION AND CONCLUSION

The implementation of a Gym Management System has proven to be an efficient and effective solution for streamlining various operations within a fitness facility. This evaluation and conclusion will provide an overview of the system's performance, its impact on gym operations, and the overall benefits it has brought to the organization.

The Gym Management System offers a comprehensive set of features that cater to the diverse needs of the fitness center. It effectively handles member registration, membership plans, and class schedules. Additionally, the system efficiently tracks member attendance, manages payments, and generates reports. Overall, the GMS successfully fulfills its intended purpose of automating and simplifying gym management tasks.

The Gym Management System implemented at Max Ladies Gym has proven to be an effective solution for automating and streamlining gym management processes. Its robust functionality, user-friendly interface, reliability, and seamless integration contribute to enhanced operational efficiency. The Gym Management System successfully handles member management, attendance tracking, billing, and reporting, allowing gym staff to focus on delivering quality services to their members.

To ensure the continued success of the Gym Management System, it is advisable to regularly update and maintain the system, addressing any identified bugs or glitches promptly. Additionally, soliciting feedback from gym staff and members can provide valuable insights for future system enhancements.

Overall, the Gym Management System has greatly improved the efficiency and effectiveness of gym operations at Max Ladies Gym. It has become an indispensable tool for managing membership data, streamlining administrative tasks, and delivering an exceptional experience to gym members.

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APPENDICES

Figure - System Diagram

A graphical representation of a system, showing the various components and their relationships. The system diagram typically includes various components, such as inputs, processes, outputs, feedback, and control mechanisms. Inputs are the data or materials that are fed into the system, and outputs are the results or products that are produced by the system.

Table - Literature Review

An essential component of research or project that provides a comprehensive analysis of existing knowledge on a given topic.