



**INSTITUTE FOR  
ADVANCED COMPUTING  
AND SOFTWARE  
DEVELOPMENT AKURDI,  
PUNE**

Documentation On

**“Fitness Club-Gym Services”**  
PG-DAC SEPTEMBER 2022

Submitted By:  
**Group No: 72**

- **Shubham Gurav (229154)**
- **Pushpdant Patil (229187)**

**Mrs. Manjiri Deshpande**  
**Project Guide**

**Mr. Rohit Puranik**  
**Centre Coordinator**

## **ABSTRACT**

The Gym Portal and Management System for Gym web application is intended to provide complete solutions for owners as well as customers through a single get way using the internet. It allows owners to manage their gym, customer to view the packages provided by gym and booking their session online as per requirement. The administrator module will able to manage branch activity, gym activity, trainer activity, facility activity.

This project is an attempt to provide an opportunity to Gym owners to expand their business online. Saves time and efforts of customers to right gym and reduces overall paper work of managing records and registers. Customers and Trainers can receive notifications via email.

## ACKNOWLEDGEMENT

I take this occasion to thank God, almighty for blessing us with his grace and taking our endeavour to a successful culmination. I extend my sincere and heartfelt thanks to our esteemed guide, **Mrs. Manjiri Deshpande** for providing me with the right guidance and advice at the crucial juncture and for showing me the right way. I extend my sincere thanks to our respected **Centre Co-Ordinator Mr. Rohit Puranik** for allowing us to use the facilities available. I would like to thank the other faculty members also, at this occasion. Last but not the least, I would like to thank my friends and family for the support and encouragement they have given me during the course of our work.

**Shubham Gurav (229154)**  
**Pushpdant Patil (229187)**

## **Table of Contents**

<b>1. Introduction.....</b>	<b>1</b>
Problem Statement.....	2
Aim & Objectives.....	3
<b>2. Overall Description.....</b>	<b>2</b>
<b>3. System Requirement Specification.....</b>	<b>3</b>
External Interface Requirements.....	3
Hardware Requirements.....	4
Functional & Non Functional requirements.....	6
<b>4. System Diagram.....</b>	<b>8</b>
Activity Diagram.....	8
Data Flow Diagram.....	9
Class Diagram.....	11
Use Case Diagram .....	12
ER Diagram .....	13
System generated ERD.....	14
<b>5. Table Structure.....</b>	<b>15</b>
User .....	15
Manager.....	15
Batch... ..	15
Trainer .....	16
Member.....	16
Branch.....	17
Packages.....	17
Payment.....	17
Report.....	18
<b>6.Screenshots.....</b>	<b>19</b>
<b>7. Conclusion.....</b>	<b>26</b>
Future Scope .....	26
<b>8. References .....</b>	<b>27</b>

**List of Figures**

Figure 1 Activity Diagram.....8

Figure 2 Level 0 Data Flow Diagram .....9

Figure 3 Level 1 Data Flow Diagram .....9

Figure 4 Level 2 Data Flow Diagram.....10

Figure 5 Class Diagram.....11

Figure 6 Use Case Diagram .....12

Figure 7 ER Diagram .....13

Figure 8 System ERD .....14

## 1.INTRODUCTION

### **Introduction:**

This document communicates the business requirements and scope for developing Gym Service for a company. The scope of this document is to define the functional and non- functional requirements, business rules and other constraints requirements.

Now a day's online service is the best competitive edge for any organization. Our fitness management website provides best platform for ease of access to the gym managers, trainers and also for customers. User can check his updates online anytime about his/her fitness, diet plan etc. There is a need for online healthcare maintenance online. This project provides user friendly customer and trainer interaction.

### **Problem Statement:**

Existing Gyms works without any website for providing services to their customers. Managers have to keep records on papers and registers. There is no any way for trainers and customers to manage their workout progress. Customers need to visit gym for checking facilities and packages provided by different gyms.

Fitness club-Gym Services is intended to provide complete solution for Gym owner, trainers & customers through a single gateway using internet. It allows owners to manage their gym, customers to view packages provided by gym ,search and choose trainers and get information about gym equipments and purchase the convenient package to get membership. It allows gym trainers to evaluate workout and diet report of gym members. Gym managers can manage their daily gym schedule and send notifications to customers about same. The administrator module will be able to manage branch activity, trainer activity and payments.

### **Aims and Objective:**

This product aimed toward a person who don't want to visit the gym to see functionalities and packages provided by that gym to get membership, he/she can use the web application for ease.

In other words, our Gym Management portal has, following objectives:

- Simple database is maintained.
- Easy operations for the user and the admin of the system.
- User interfaces are user accommodating and attractive; it takes very less time for the operator to use the system.
- This system will provide complete solution for Gym owners to take their business online.

## **2. OVERALL DESCRIPTION**

### **Proposed Methodology:**

This system brings ease in the communication and business of B2C field. It provides the complete functionality to owner This system allows gym managers to manage users and full application, manage gym shifts and the members to search gyms, apply for membership and view workouts while it allows trainer to create schedule, diet chart.

This product aimed toward a person who don't want to visit the gym to see functionalities and packages provided by that gym to get membership, he/she can use the web application for ease.

Fitness Management Website provides better users health and diet plan and workout plan maintaining their health care and taking care of all their health information.

Our System provides a very user-friendly platform where Member can easily search the gym trainer and check his updates online anytime about his/her fitness, diet plan etc.

Our system is aimed efficient management of various tasks like Generating diet and workout plan for members on weekly basis, managing fees payment. Digitally monitor daily activities along with managing all the resources and information on a single platform

### **3.SYSTEM REQUIREMENTS SPECIFICATION.**

#### **External Interface Requirements:**

##### User Interfaces:

- All the users will see the same page when they enter in this website. This page asks the users a username and a password.
- After being authenticated by correct username and password, user will be redirect to their corresponding profile where they can do various activities.
- The user interface will be simple and consistence, using terminology commonly understood by intended users of the system. The system will have simple interface, consistence with standard interface, to eliminate need for user training of infrequent users.

##### Hardware Interfaces:

- No extra hardware interfaces are needed.
- The system will use the standard hardware and data communication resources.

This includes, but not limited to, general network connection at the server/hosting site, network server and network management tools.

##### Application Interfaces:

##### **Web Browser:**

The system is a web-based application; clients need a modern web browser such as Mozilla Firebox, Internet Explorer, Opera, and Chrome. The computer must have an Internet connection in order to be able to access the system.

##### Communications Interfaces:

- This system uses communication resources which includes but not limited to, HTTP protocol for communication with the web browser and web server and TCP/IP network protocol with HTTP protocol.
- This application will communicate with the database that holds all the booking information. Users can contact with server side through HTTP protocol by means of a function that is called HTTP Service. This function allows the application to use the data retrieved by server to fulfil the request fired by the us.



**HARDWARE REQUIREMENT**

Hardware requirements for insurance on internet will be same for both parties which are as follows:

<b>RAM</b>	4 GB
<b>Hard disk</b>	320 GB
<b>Processor</b>	Dual Core

**Software Requirements**

**Client side:**

<b>Web Browser</b>	Google Chrome or any compatible browser
<b>Operating System</b>	Windows 8 or above

**Server side:**

<b>Web Server</b>	To-be-decided
<b>Server-side Language</b>	J2EE(Spring, Hibernate)
<b>Database Server</b>	MYSQL
<b>Web Browser</b>	Google Chrome or any compatible browser
<b>Operating System</b>	Windows 8 or above

## **OPERATING ENVIRONMENT:**

### **Server Side:**

**Processor:** Intel® Xeon® processor 3500 series

**HDD:** Minimum 500GB Disk Space

**RAM:** Minimum 4GB

**OS:** Windows 10

**Database:** MySQL

### **Client Side (minimum requirement):**

**Processor:** Intel Dual Core

**HDD:** Minimum 80GB Disk Space

**RAM:** Minimum 4GB

**OS:** Windows 7 or above

### **Design and Implementation Constraints:**

- The application will use ReactJS, Axios and CSS as main web technologies.
- HTTP protocol is used as communication protocol. FTP is used to upload the web application in live domain and the client can access it via HTTP protocol.
- SMTP protocol is used for Email communication
- Several types of validations make this web application a secured one and SQL Injections can also be prevented.
- Since Fitness Club is a web-based application, internet connection must be established.

**User Characteristics:**

User should be familiar with the terms like login, register etc.

**Principle Actors:**

Super admin, Gym Owners, Trainer, Members

**General Constraints:**

A full internet connection is required.

**Functional Requirements:**

This section provides requirement overview of the system. Various functional modules that can be implemented by the system will be –

**1.Registration**

If customer wants to take the membership, then he/she must be registered, unregistered user can't have access to packages. They can view the gym. The Super admin must be able to Register new gym branch details as well as the Branch manager details. The local gym branch owners can register new trainers for the gym.

**2.Login**

Each system user including Admin, Branch owners, Trainers and Customers/ Members must be able to login to application by entering valid user id and password.

**3.Packages**

Branch owners can provide different packages for customers. Customer can view and packages, trainers and choose one as per their requirements.

**4.Membership**

After choosing one of packages & making successful payment customer can avail the services provided by gym.

**5.Gym Shifts**

Branch owners can schedule different shifts for group of customers and trainers.

**6.Workout plan**

Trainers can add workout plans and diet suggestions to their respective members.

## **7.LogOut**

Application user redirected to home page after surfing the application or whenever they wanted.

## **Non-Functional Requirements:**

### **Security:**

System will assign different roles to users for authentication. Users will be allowed to access application only after authentication by entering login id and password.

### **Reliability & Maintainability:**

FCS will backup the users data after every activity using database.

### **Availability:**

24X7 availability.

### **Modularity:**

FCS will be designed and developed using independent or dependent business scenarios in the form of modules. It will contain modules such as Authentication, Package information, Branch Information, Trainers and customers data, Payment processing and Membership

### **Reusability:**

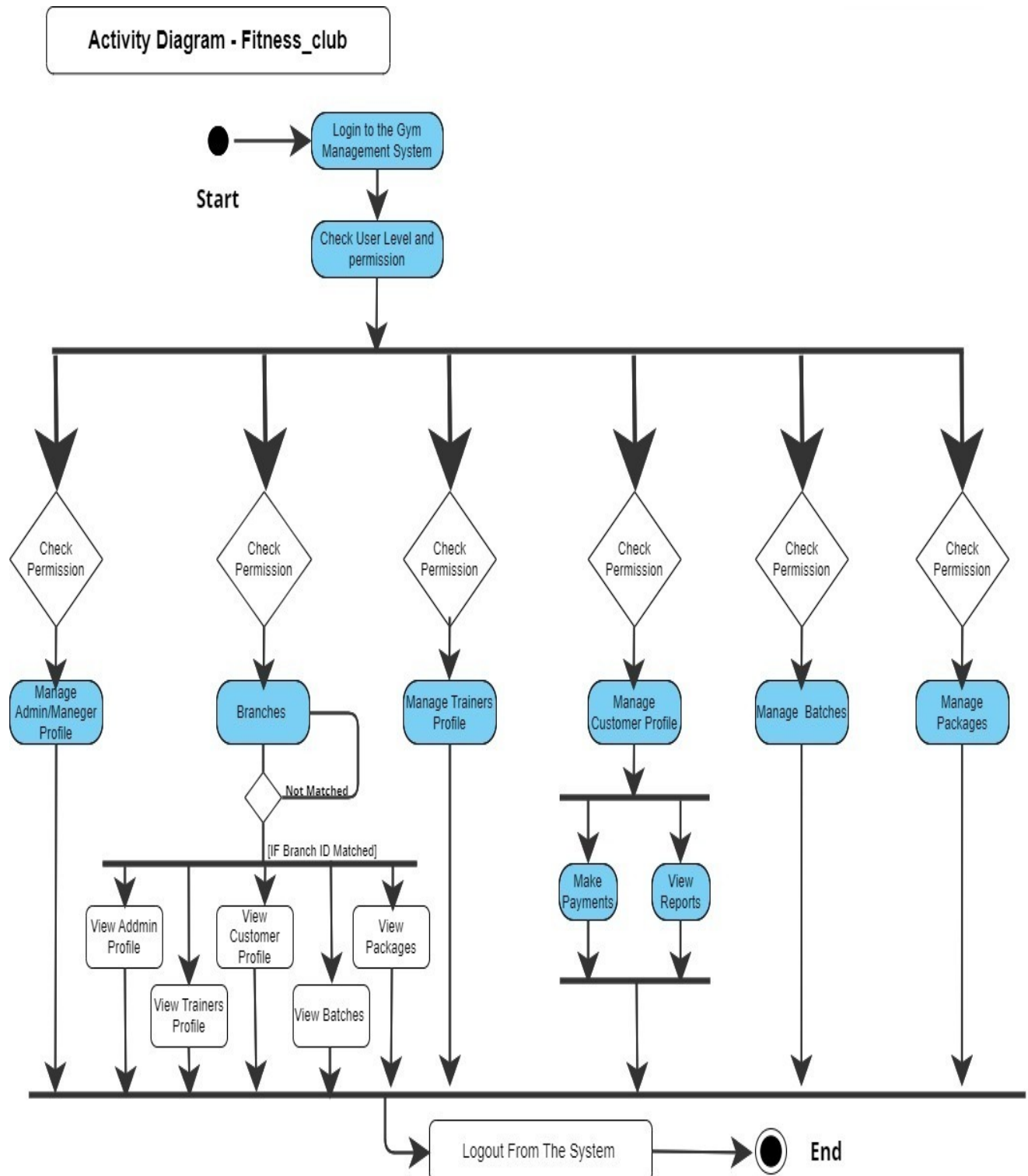
The different modules of system will be reusable and can be modified independently.

### **Scalability:**

System will be able to provide consistent user experience to users.

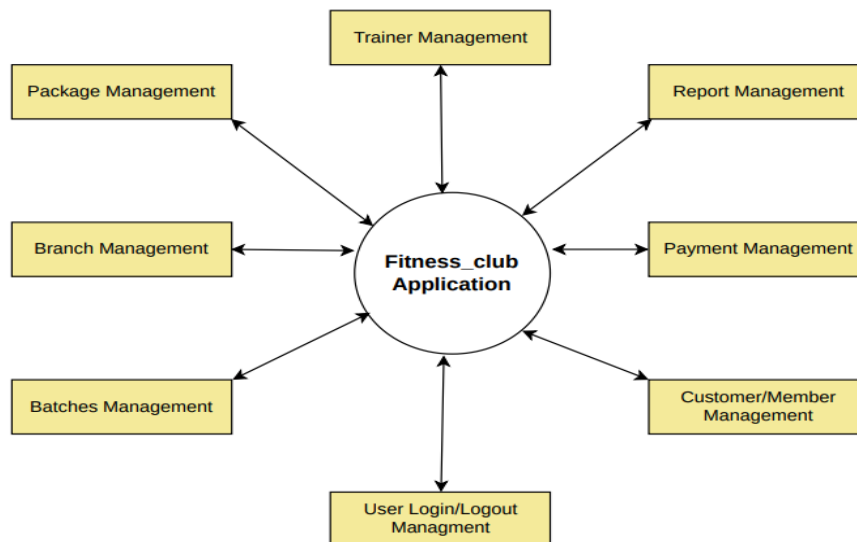
## 4. SYSTEM DIAGRAMS

### • Activity Digram

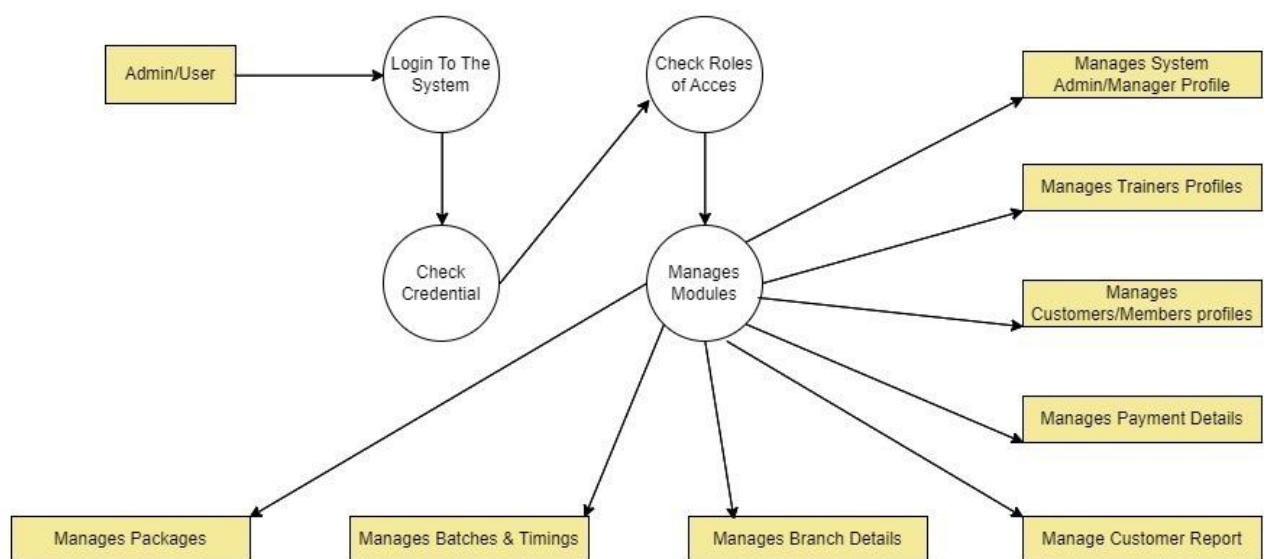


## • Data Flow Diagrams

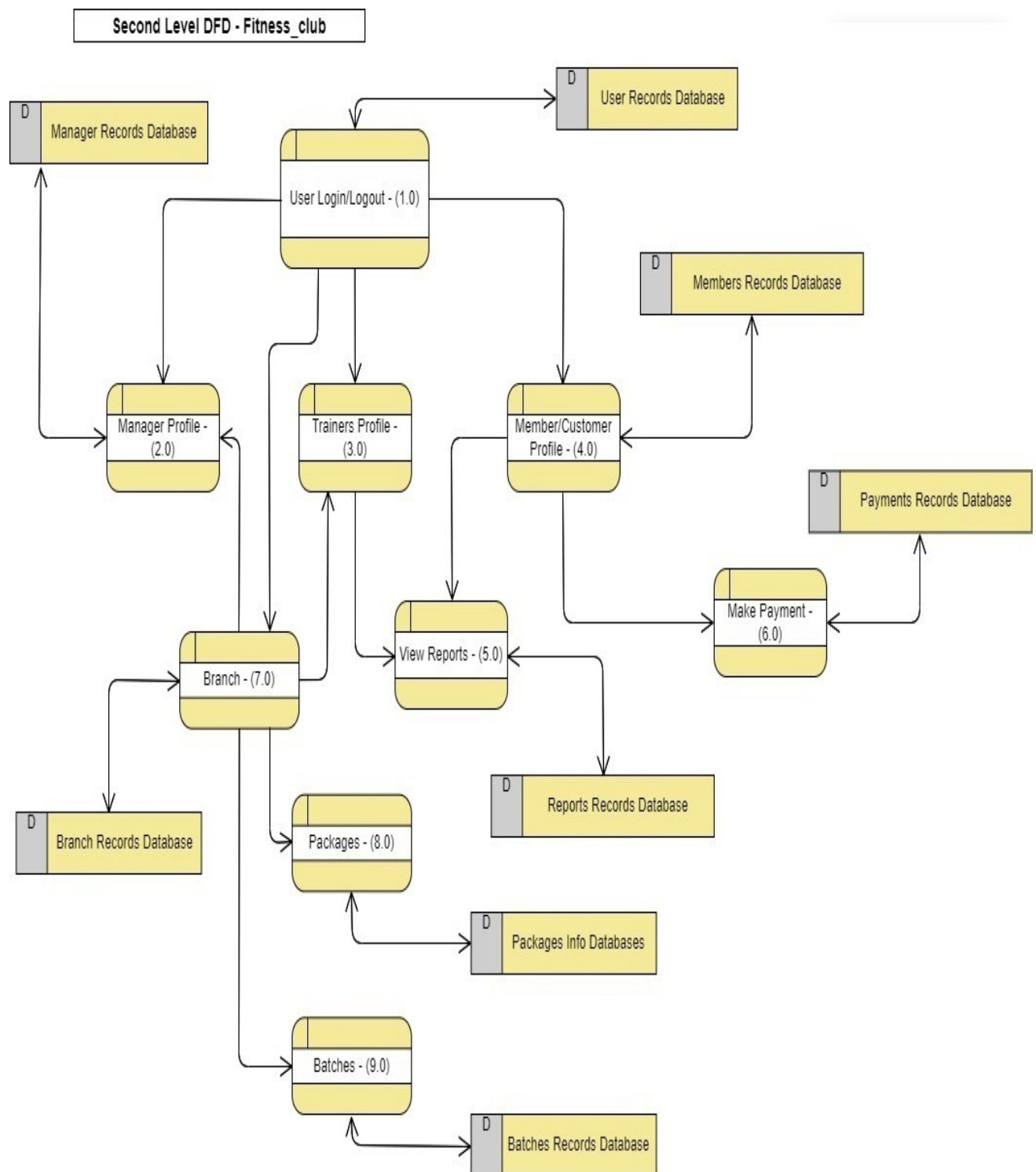
Zero Level DFD - Fitness\_Club Application



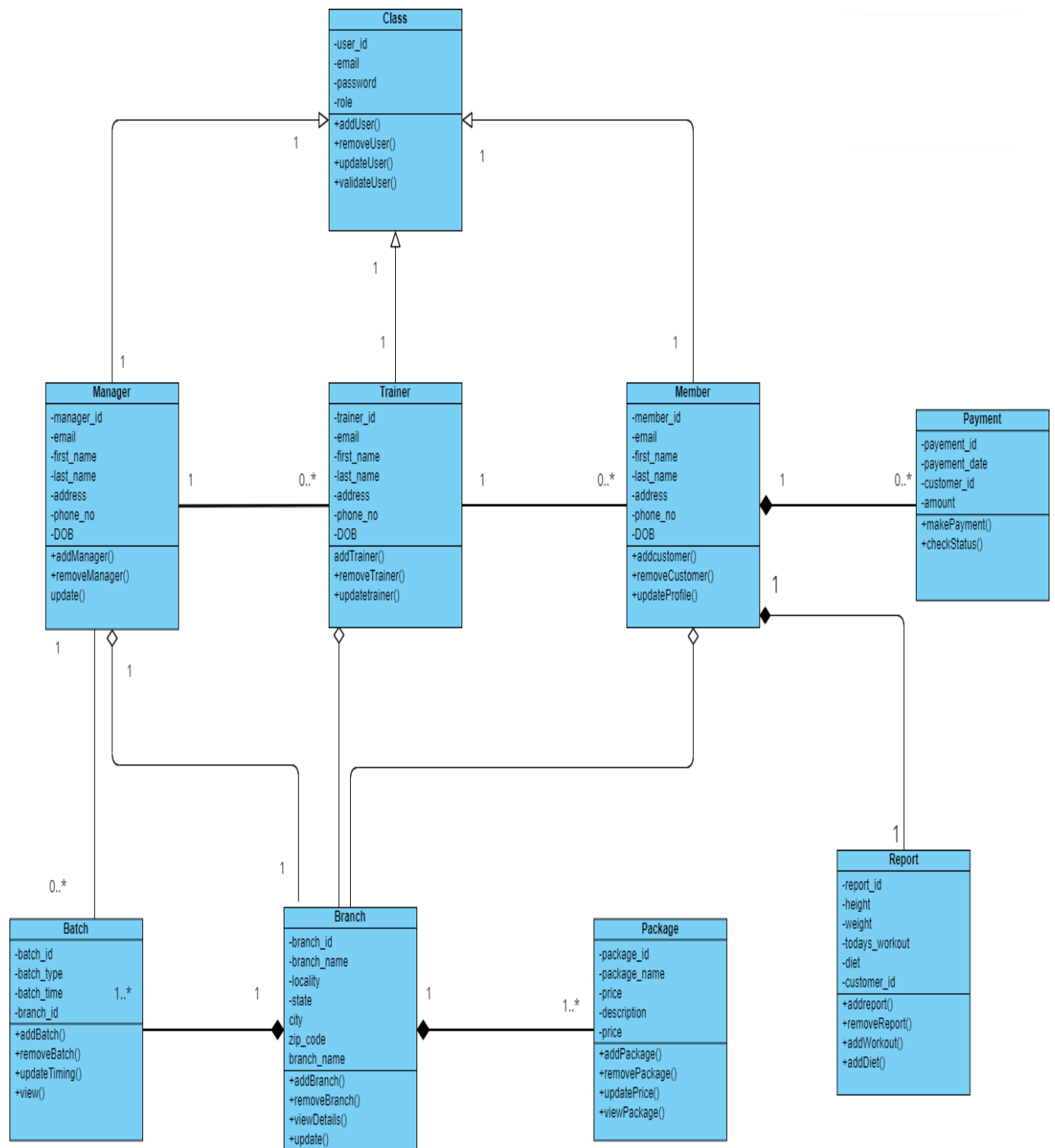
First Level DFD - Fitness\_club



- Second level DFD

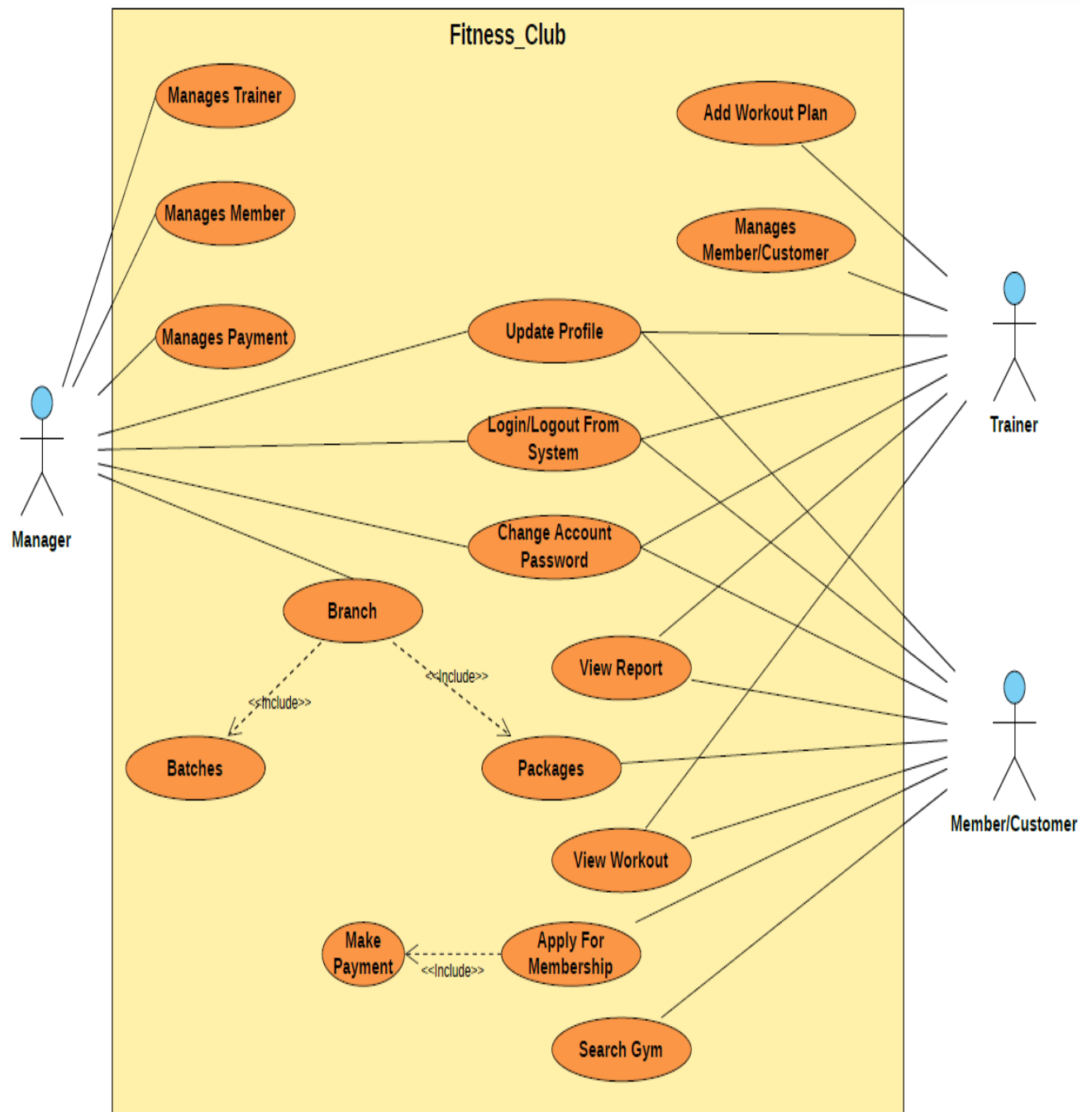


- Class Diagram

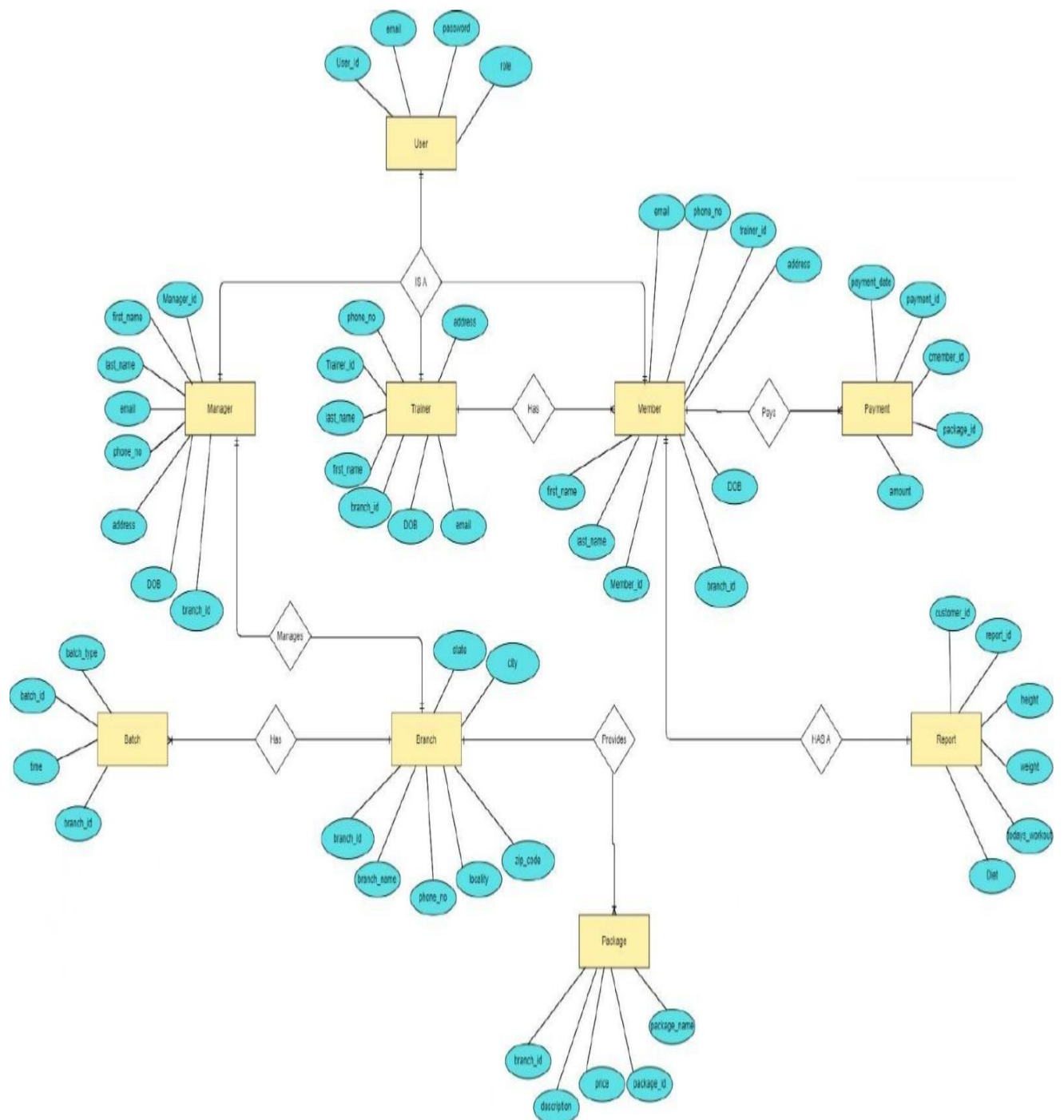




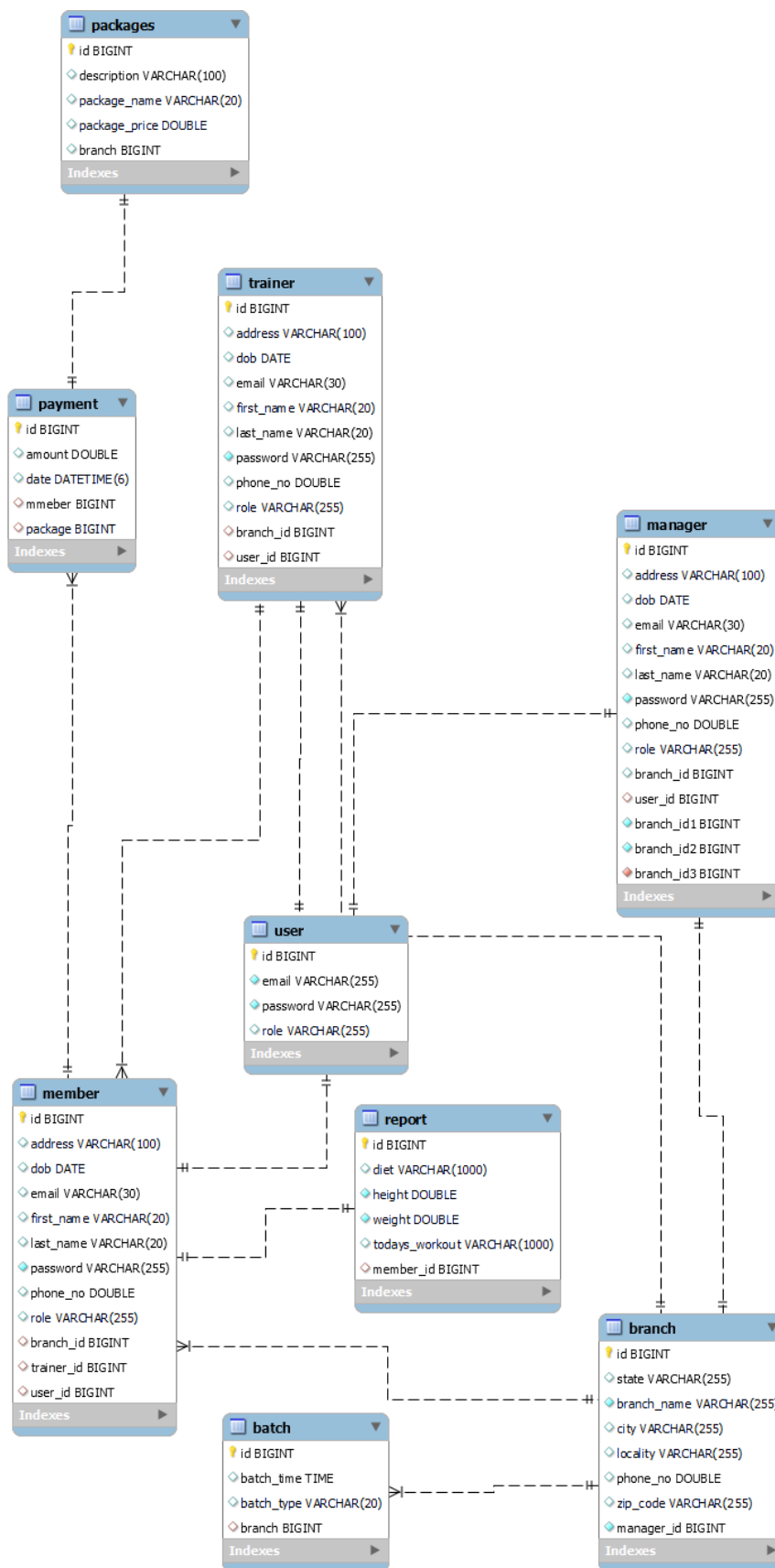
- Use Case Diagram



- ER Diagram



## System Generated ERD



## **5. TABLE STRUCTURE**

### **User:**

<b><u>Field</u></b>	<b><u>Type</u></b>	<b><u>Null</u></b>	<b><u>Key</u></b>	<b><u>Default</u></b>	<b><u>Extra</u></b>
UserId	bigint	NO	PRI	NULL	auto_increment
email	Varchar(255)	NO		NULL	
password	Varchar(255)	NO		NULL	
role	Varchar(255)	YES		NULL	

### **Manager:**

<b><u>Field</u></b>	<b><u>Type</u></b>	<b><u>Null</u></b>	<b><u>Key</u></b>	<b><u>Default</u></b>	<b><u>Extra</u></b>
ManagerId	bigint	NO	PRI	NULL	auto_increment
address	Varchar(100)	YES		NULL	
Dob	date	YES		NULL	
email	Varchar(30)	NO	UNI	NULL	
first_name	Varchar(20)	YES		NULL	
last_name	Varchar(20)	YES		NULL	
Password	Varchar(255)	NO		NULL	
phone_no	double	YES		NULL	
role	Varchar(255)	YES		NULL	
branch_id	bigint	YES	MUL	NULL	
user_id	bigint	YES	MUL	NULL	

### **Batch:**

<b><u>Field</u></b>	<b><u>Type</u></b>	<b><u>Null</u></b>	<b><u>Key</u></b>	<b><u>Default</u></b>	<b><u>Extra</u></b>
BatchId	bigint	NO	PRI	NULL	auto_increment
batch_time	time	YES		NULL	
batch_type	Varchar(250)	YES		NULL	
branch	bigint	YES		NULL	

**Trainer:**

<b><u>Field</u></b>	<b><u>Type</u></b>	<b><u>Null</u></b>	<b><u>Key</u></b>	<b><u>Default</u></b>	<b><u>Extra</u></b>
TrainerId	bigint	NO	PRI	NULL	auto_increment
address	Varchar(100)	YES		NULL	
Dob	date	YES		NULL	
email	Varchar(30)	NO	UNI	NULL	
first_name	Varchar(20)	YES		NULL	
last_name	Varchar(20)	YES		NULL	
Password	Varchar(255)	NO		NULL	
phone_no	double	YES		NULL	
role	Varchar(255)	YES		NULL	
branch_id	bigint	YES	MUL	NULL	
user_id	bigint	YES	MUL	NULL	

**Member:**

<b><u>Field</u></b>	<b><u>Type</u></b>	<b><u>Null</u></b>	<b><u>Key</u></b>	<b><u>Default</u></b>	<b><u>Extra</u></b>
MemberId	bigint	NO	PRI	NULL	auto_increment
address	Varchar(100)	YES		NULL	
Dob	date	YES		NULL	
email	Varchar(30)	NO	UNI	NULL	
first_name	Varchar(20)	YES		NULL	
last_name	Varchar(20)	YES		NULL	
Password	Varchar(255)	NO		NULL	
phone_no	double	YES		NULL	
role	Varchar(255)	YES		NULL	
branch_id	bigint	YES	MUL	NULL	
trainer_id	bigint	YES	MUL	NULL	
user_id	bigint	YES	MUL	NULL	

**Branch:**

<b><u>Field</u></b>	<b><u>Type</u></b>	<b><u>Null</u></b>	<b><u>Key</u></b>	<b><u>Default</u></b>	<b><u>Extra</u></b>
BranchId	bigint	NO	PRI	NULL	auto_increment
state	varchar(255)	YES		NULL	
branch_name	varchar(255))	NO		NULL	
city	varchar(255)	YES		NULL	
locality	varchar(255)	YES		NULL	
phone_no	double	YES		NULL	
zip_code	varchar(255)	YES		NULL	

**Packages:**

<b><u>Field</u></b>	<b><u>Type</u></b>	<b><u>Null</u></b>	<b><u>Key</u></b>	<b><u>Default</u></b>	<b><u>Extra</u></b>
PackageId	bigint	NO	PRI	NULL	auto_increment
description	varchar(100)	YES		NULL	
package_name	varchar(20)	YES		NULL	
package_price	double	YES		NULL	
branch	bigint	YES	MUL	NULL	

**Payment:**

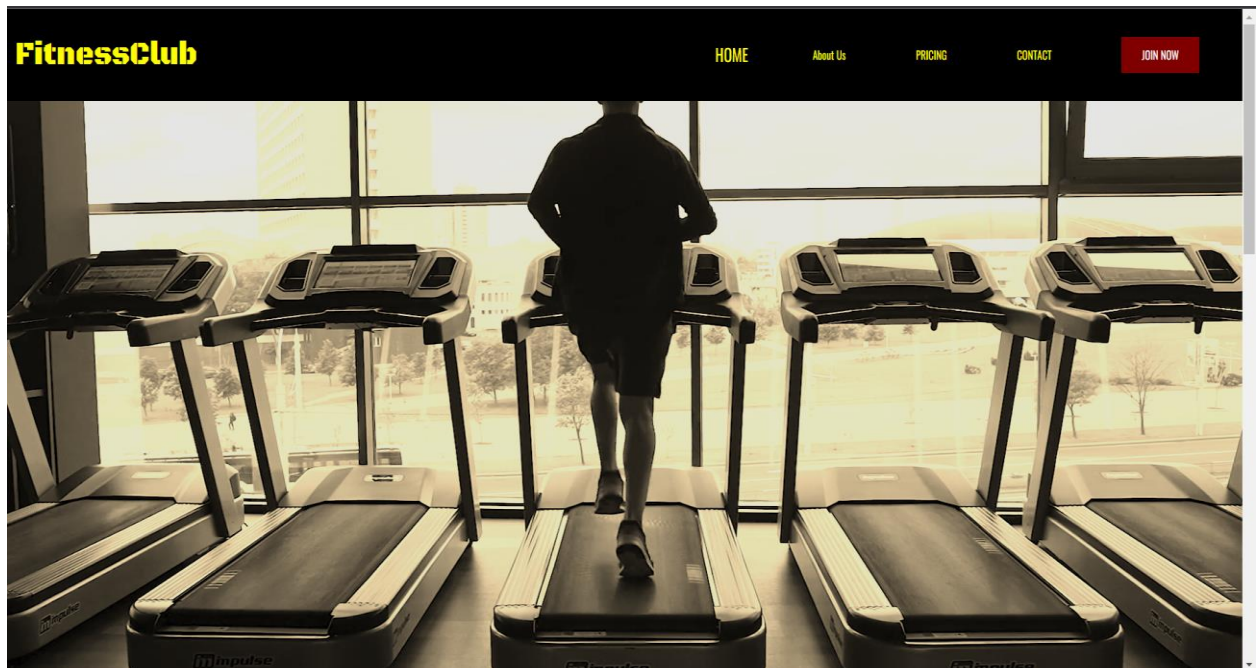
<b><u>Field</u></b>	<b><u>Type</u></b>	<b><u>Null</u></b>	<b><u>Key</u></b>	<b><u>Default</u></b>	<b><u>Extra</u></b>
PaymentId	bigint	NO	PRI	NULL	auto_increment
amount	double	YES		NULL	
date	datetime(6)	YES		NULL	
member	bigint	YES	MUL	NULL	
package	bigint	YES	MUL	NULL	

**Report:**

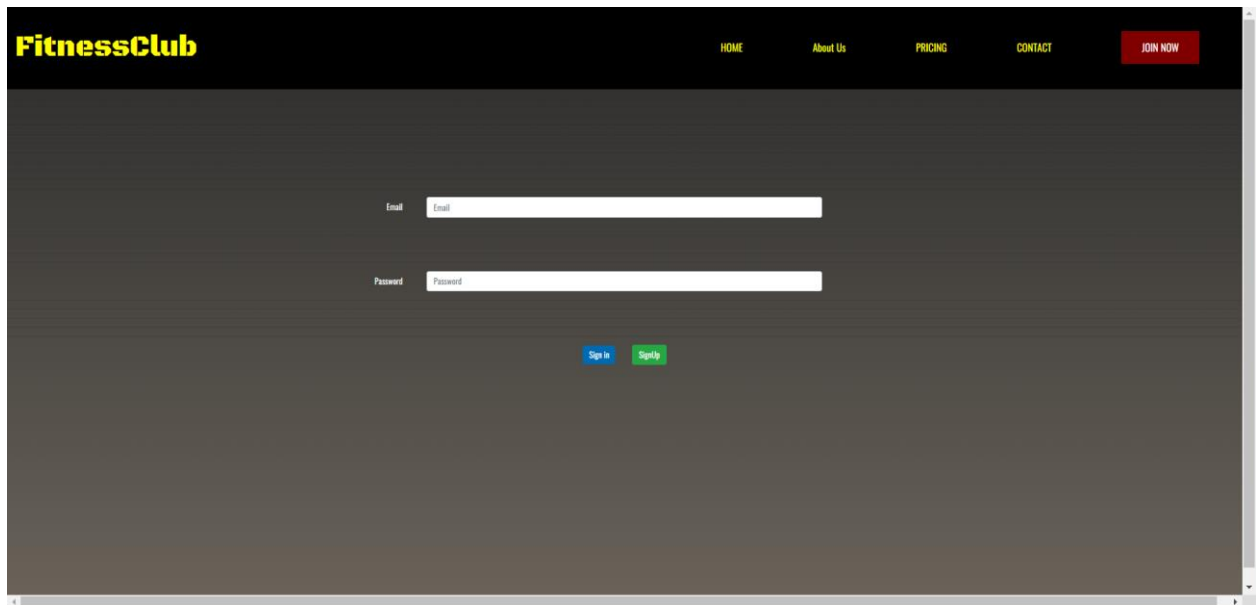
<b><u>Field</u></b>	<b><u>Type</u></b>	<b><u>Null</u></b>	<b><u>Key</u></b>	<b><u>Default</u></b>	<b><u>Extra</u></b>
ReportId	bigint	NO	PRI	NULL	auto_increment
diet	varchar(1000)	YES		NULL	
height	double	NO		NULL	
weight	double	NO		NULL	
todays_workout	varchar(1000)	YES		NULL	
member_id	bigint	YES	MUL	NULL	

## 6.SCREENSHOTS

### HOME PAGE

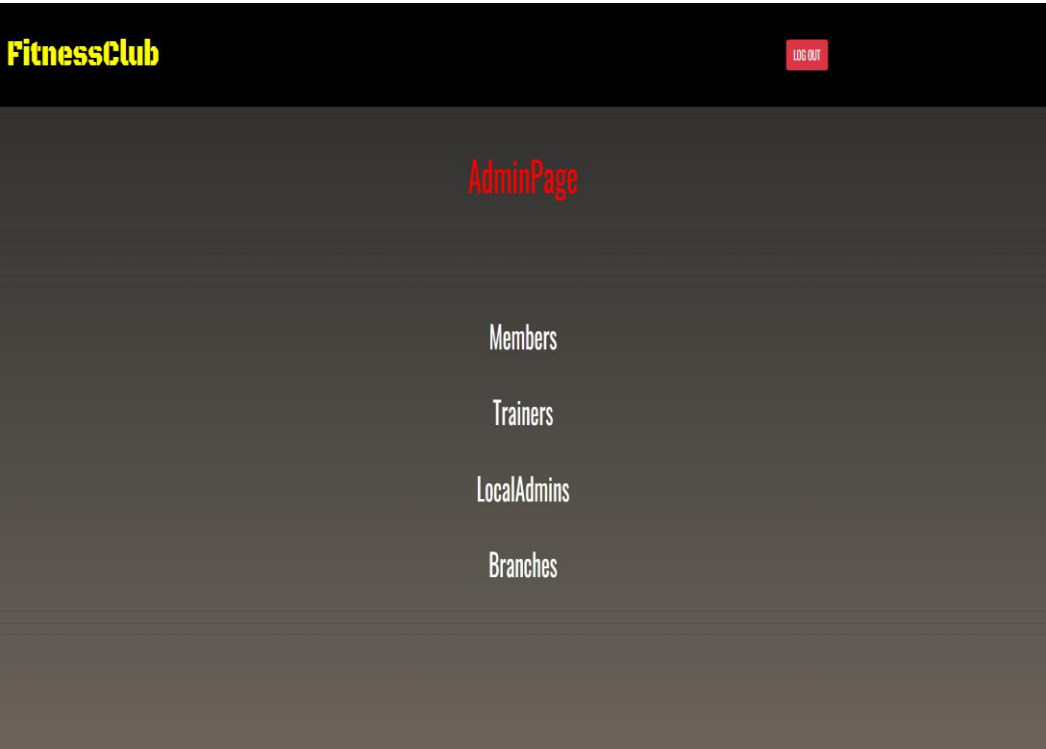


### SIGN IN / SIGN UP PAGE

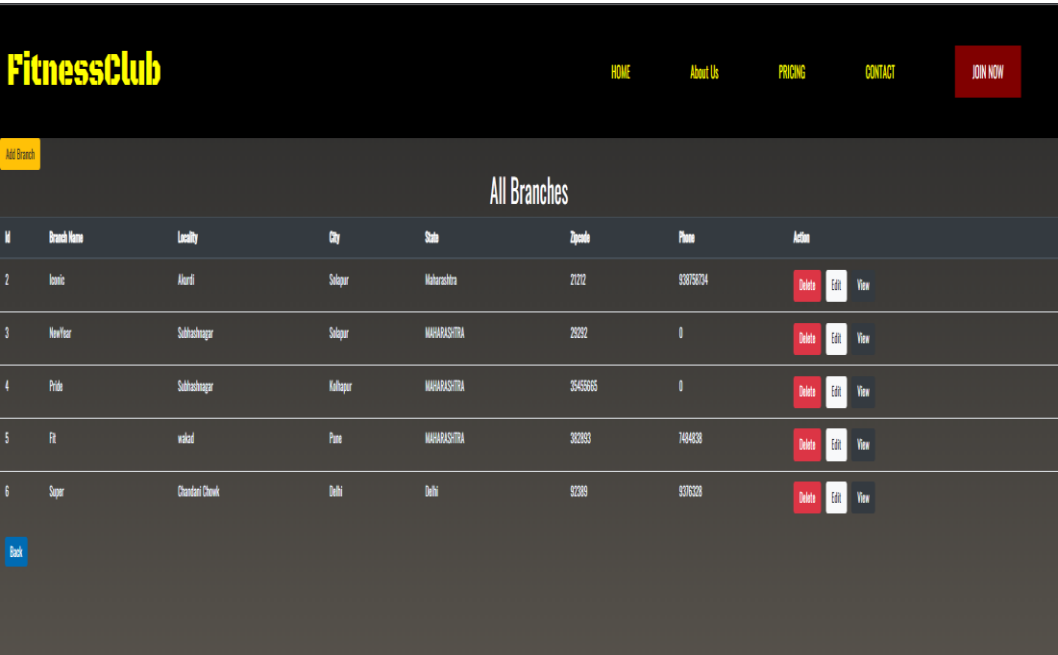




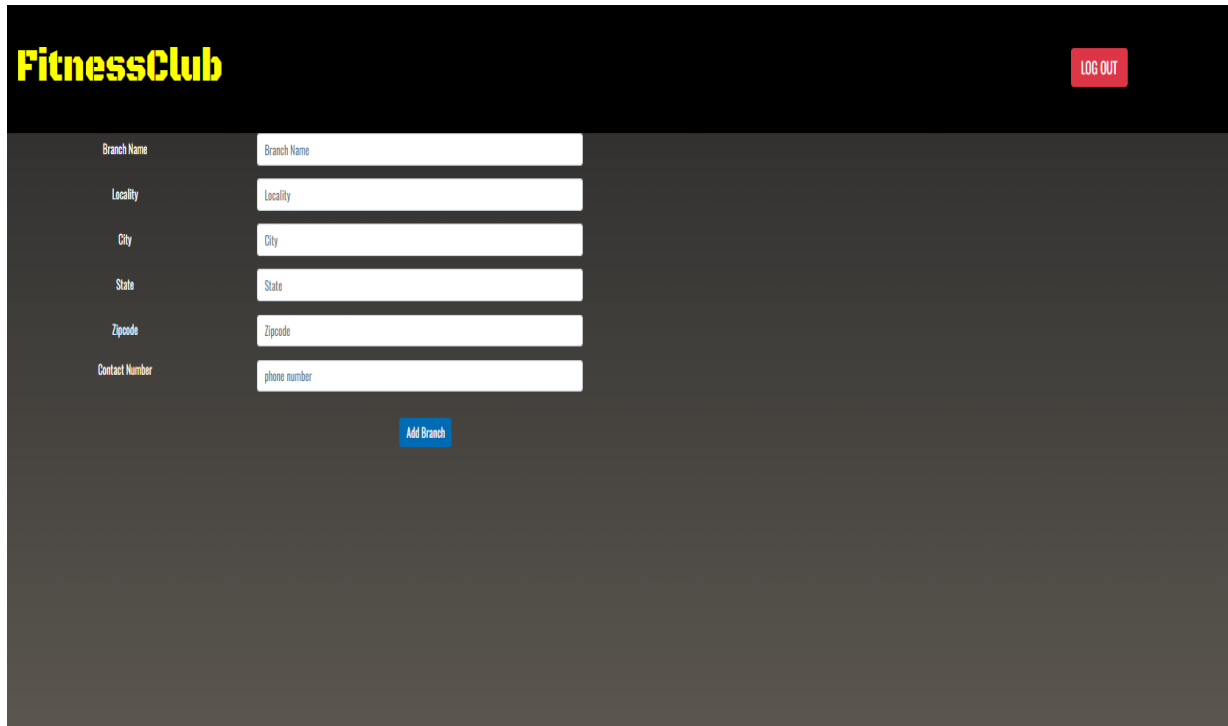
ADMIN PAGE



ALL BRANCHES



## ADD BRANCH FORM

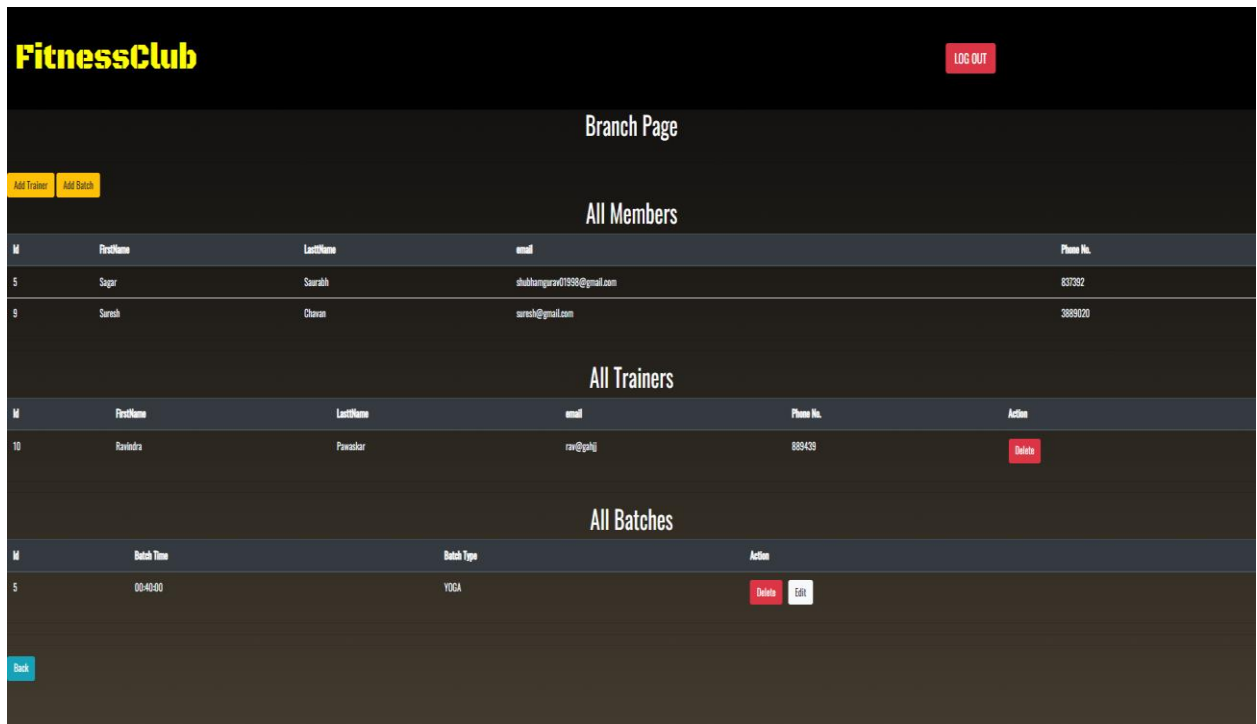


The screenshot shows the 'FitnessClub' logo in yellow on a black background. In the top right corner, there is a red 'LOG OUT' button. Below the logo, there is a form with the following fields:

- Branch Name:
- Locality:
- City:
- State:
- Zipcode:
- Contact Number:

At the bottom of the form, there is a blue 'Add Branch' button.

## GYM MANAGER BRANCH PAGE



The screenshot shows the 'FitnessClub' logo in yellow on a black background. In the top right corner, there is a red 'LOG OUT' button. Below the logo, the page is titled 'Branch Page'. There are two buttons: 'Add Trainer' (yellow) and 'Add Branch' (orange). Below these buttons, there are three sections:

### All Members

M	First Name	Last Name	email	Phone No.
S	Sagar	Saurabh	shubhangurav01998@gmail.com	837392
S	Suresh	Chavan	suresh@gmail.com	3889120

### All Trainers

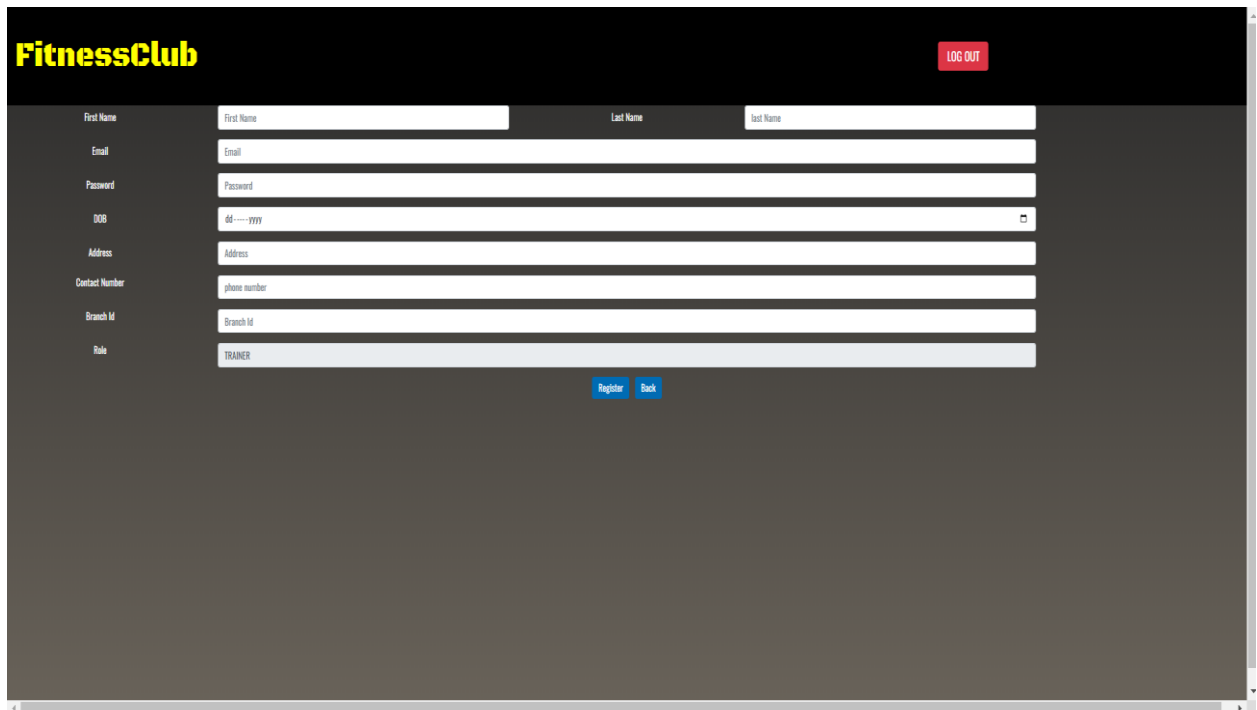
M	First Name	Last Name	email	Phone No.	Action
10	Ravindra	Pawaskar	rvr@gmail	889439	<a href="#">Delete</a>

### All Batches

M	Batch Time	Batch Type	Action
S	00:40:00	YOGA	<a href="#">Delete</a> <a href="#">Edit</a>

At the bottom left, there is a blue 'Back' button.

## TRAINER ADD PAGE

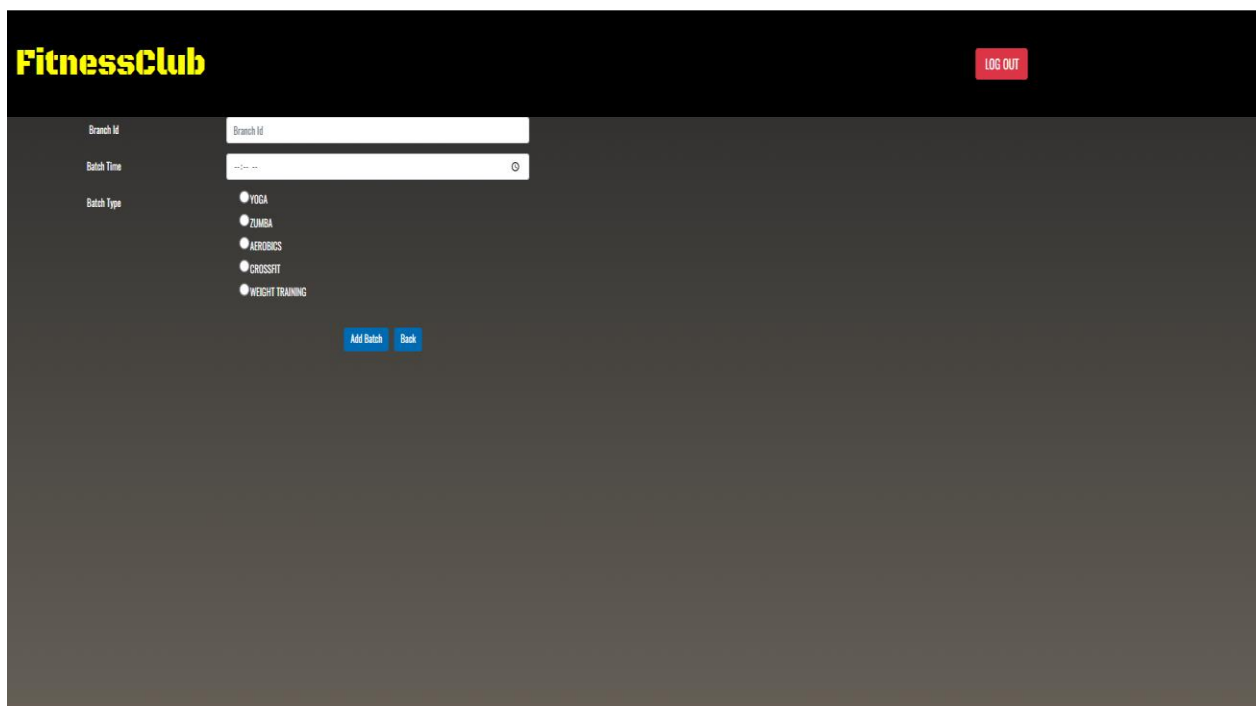


The screenshot shows the 'Trainer Add Page' of the FitnessClub system. The page has a dark header with the 'FitnessClub' logo in yellow on the left and a 'LOG OUT' button in red on the right. Below the header is a form with a dark sidebar on the left containing labels for various fields. The form fields are white and arranged in a grid. At the bottom of the form are two blue buttons: 'Register' and 'Back'.

Field Label	Field Type/Value
First Name	First Name
Last Name	Last Name
Email	Email
Password	Password
DOB	dd--yy
Address	Address
Contact Number	phone number
Branch Id	Branch Id
Role	TRAINER

Buttons: Register, Back

## GYM SHIFT PAGE



The screenshot shows the 'Gym Shift Page' of the FitnessClub system. The page has a dark header with the 'FitnessClub' logo in yellow on the left and a 'LOG OUT' button in red on the right. Below the header is a form with a dark sidebar on the left containing labels for various fields. The form fields are white and arranged in a grid. At the bottom of the form are two blue buttons: 'Add Shift' and 'Back'.

Field Label	Field Type/Value
Branch Id	Branch Id
Shift Time	--:--:--
Shift Type	YOGA, ZUMBA, AEROBICS, CROSSFIT, WEIGHT TRAINING

Buttons: Add Shift, Back

## ADD NEW PACKAGE

The screenshot shows a web application interface for adding a new package. The header is black with the 'FitnessClub' logo in yellow on the left and a red 'LOG OUT' button on the right. The main content area has a dark gray background. On the left, there is a vertical list of labels: 'Package Name', 'Price', and 'Description'. To the right of these labels are three white input fields. Below the input fields is a small blue button with the text 'Add'.

**FitnessClub** LOG OUT

Package Name

Price

Description

Add

## PURCHASE MEMBERSHIP

The screenshot shows a web application interface for purchasing a membership. The header is black with the 'FitnessClub' logo in yellow on the left and a red 'LOG OUT' button on the right. The main content area has a dark gray background. In the center, there are three white dropdown menus. The first is labeled 'Branch:' and has the text 'Select Your Nearest Gym'. The second is labeled 'Trainer' and has the text 'Select Trainer'. The third is labeled 'Select Package' and has the text 'Select Package'. Below these dropdowns is a small blue button with the text 'Pay Amount'.

**FitnessClub** LOG OUT


Branch:

Trainer

Select Package

Pay Amount

## WORKOUT REPORT


LOG OUT

Report

Height

160

Weight

50

Workout

Start from warmup

Diet

Eat sprouts

Add
Back

## ABOUT US

### Nutrition

Getting in the best shape needs a lot more than just working out. It is believed that 70% of what you eat decides your health and looks. Let's meet our team of **Nutritionists**



**Yuvraj Bhavnagar**  
MS Nutrition and Food Science from University of California Berkeley  
Experience: 5 yrs  
Yuvraj Bhavnagar has a MS Nutrition and Food Science from University of California-Berkeley degree and an assorted experience in the fitness industry for 5 years. He is highly skilled and motivating when it comes to being a personal trainer.



**Rujuta Diwekar**  
PhD in Applied Nutrition from Cornell University  
Experience: 7 yrs  
Rujuta Diwekar has a PhD in Applied Nutrition from Cornell University degree and an assorted experience in the fitness industry for 7 years. She is highly skilled and motivating when it comes to being a personal trainer.

### Trainers

With the best trainers across the country in our team, we guarantee you a better health and physique. With scientific approach towards working out our team of expert trainers are here to optimize your training. Let's meet our team of **Fitness Trainers**



**Manish Advilkar**  
Personal Trainer (ACE-CPT)  
Experience: 6 yrs  
Manish Advilkar has a Personal Trainer (ACE-CPT) degree and an assorted experience in the fitness industry for 6 years. He is highly skilled and motivating when it comes to being a personal trainer.

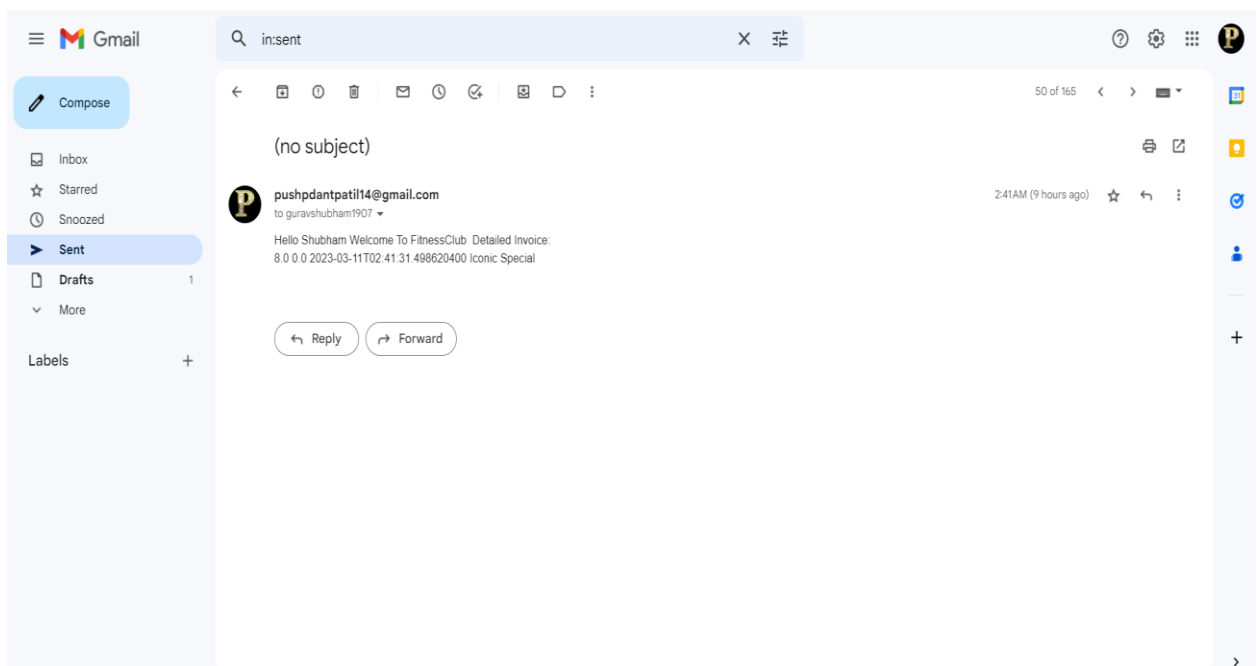


**Anupriya Kapur**  
Personal Trainer (ACE-CPT)  
Experience: 4 yrs  
Anupriya Kapur has a Personal Trainer (ACE-CPT) degree and an assorted experience in the fitness industry for 4 years. She is highly skilled and motivating when it comes to being a personal trainer.

## PASSWORD ENCRYPTION

30	dhan@gmail.com	\$2a\$10\$vkN4Jfw9eP.AM/A05w2sTeFjg7geinWqtRteUhnZQRf4q6v1qEivu	MANAGER
33	guravshubham1907@gmail.com	\$2a\$10\$PpFXK5qTKwMYUzcumaXgf.MwzrqVXPirvU20K1DTMVML9YHOvM7uq	MEMBER
-----			
10 rows in set (0.01 sec)			

## MAIL



## **7. CONCLUSION**

This system brings ease in the communication and business of B2C field. It provides the complete functionality to owner This system allows admin to manage users and full application, manage gym shifts and the members to search gyms, apply for membership and view workouts while it allows trainer to create schedule, diet chart and add workout plans.

This system provides opportunity to Gym owners to expand their business online. Saves time and efforts of customers to right gym and reduces overall paper work of managing records and registers. Customers and Trainers can receive notifications via email.

- **Future Scope:**

This project can be enhanced further by adding payment gateway to reduce the maintenance of cash for Membership purchase payments. Online Workout tutorials and online Expert sessions can be hosted on this site for better customer satisfaction. The software is flexible enough to be modified and implemented as per future requirements. We have tried our best to present this free and user-friendly website to Institutes.

## **8.REFERENCES**

- **References:**

- ✚ [React – A JavaScript library for building user interfaces \(reactjs.org\)](https://reactjs.org/)
- ✚ [Bootstrap · The most popular HTML, CSS, and JS library in the world. \(getbootstrap.com\)](https://getbootstrap.com/)
- ✚ [React Tutorial \(w3schools.com\)](https://www.w3schools.com/react/)
- ✚ [Learn Spring Boot | Baeldung](#)
- ✚ [\*\*Java 11 api docs\*\*](#)
- ✚ [Spring Data JPA - Reference Documentation](#)
- ✚ [cult.fit - Bring gym home](#)
- ✚ [Gym Management-UML](#)