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:

RAM	4 GB
Hard disk	320 GB
Processor	Dual Core

Software Requirements

Client side:

Web Browser	Google Chrome or any compatible browser
Operating System	Windows 8 or above

Server side:

Web Server	To-be-decided
Server-side Language	J2EE(Spring, Hibernate)
Database Server	MYSQL
Web Browser	Google Chrome or any compatible browser
Operating System	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.Pakages

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:

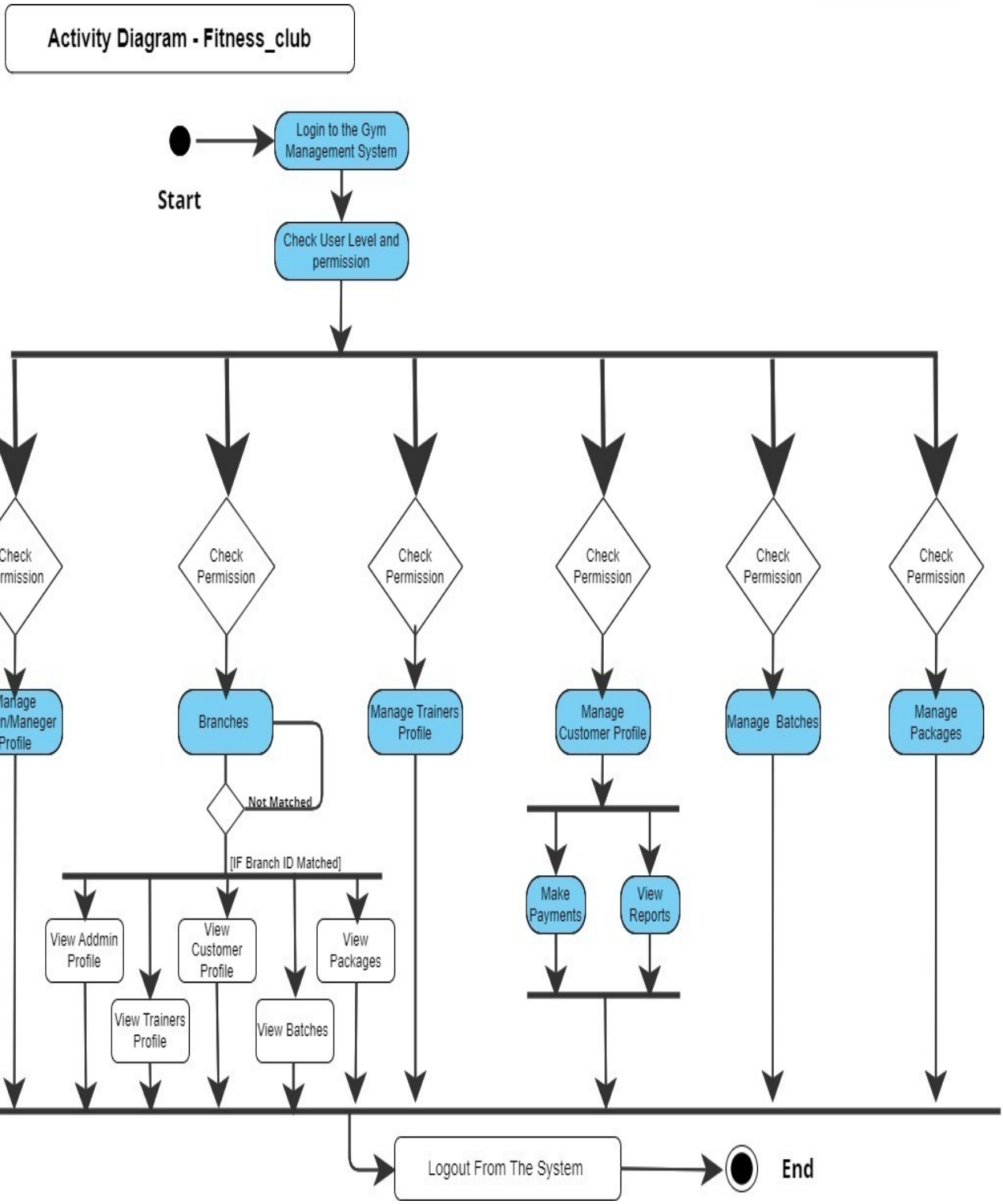
The different modules of system will be reusable and can be modified independently.

Scalability:

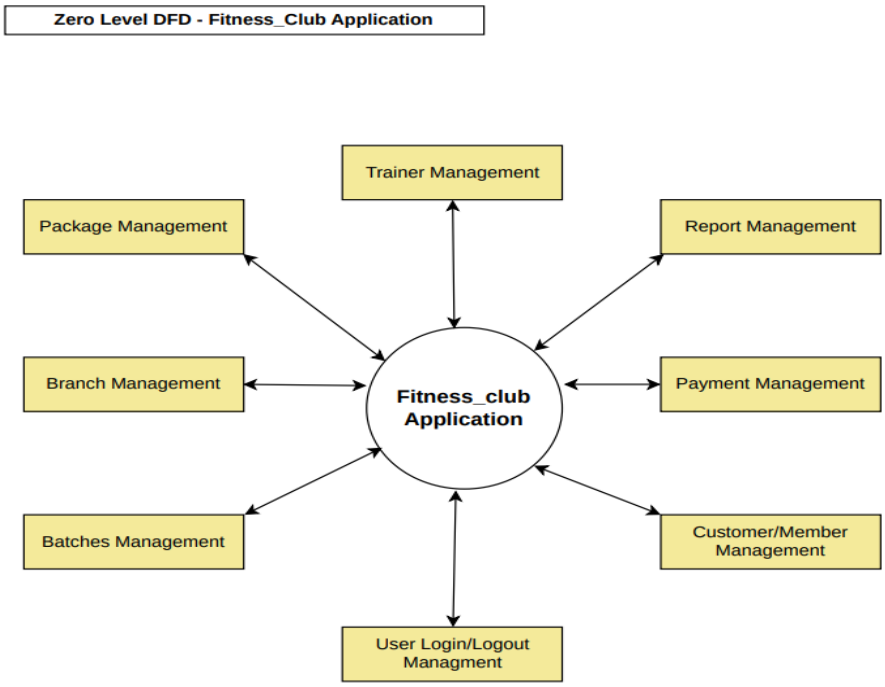
System will be able to provide consistent user experience to users.

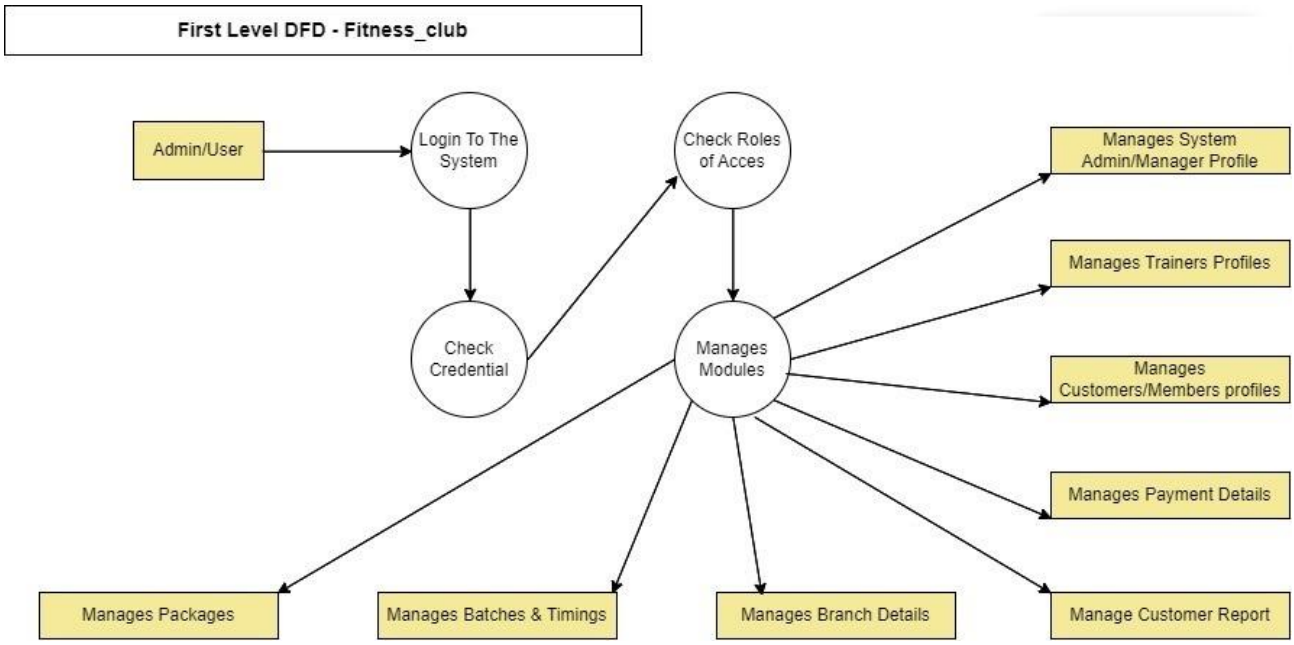
4. SYSTEM DIAGRAMS

- **Activity Digram**

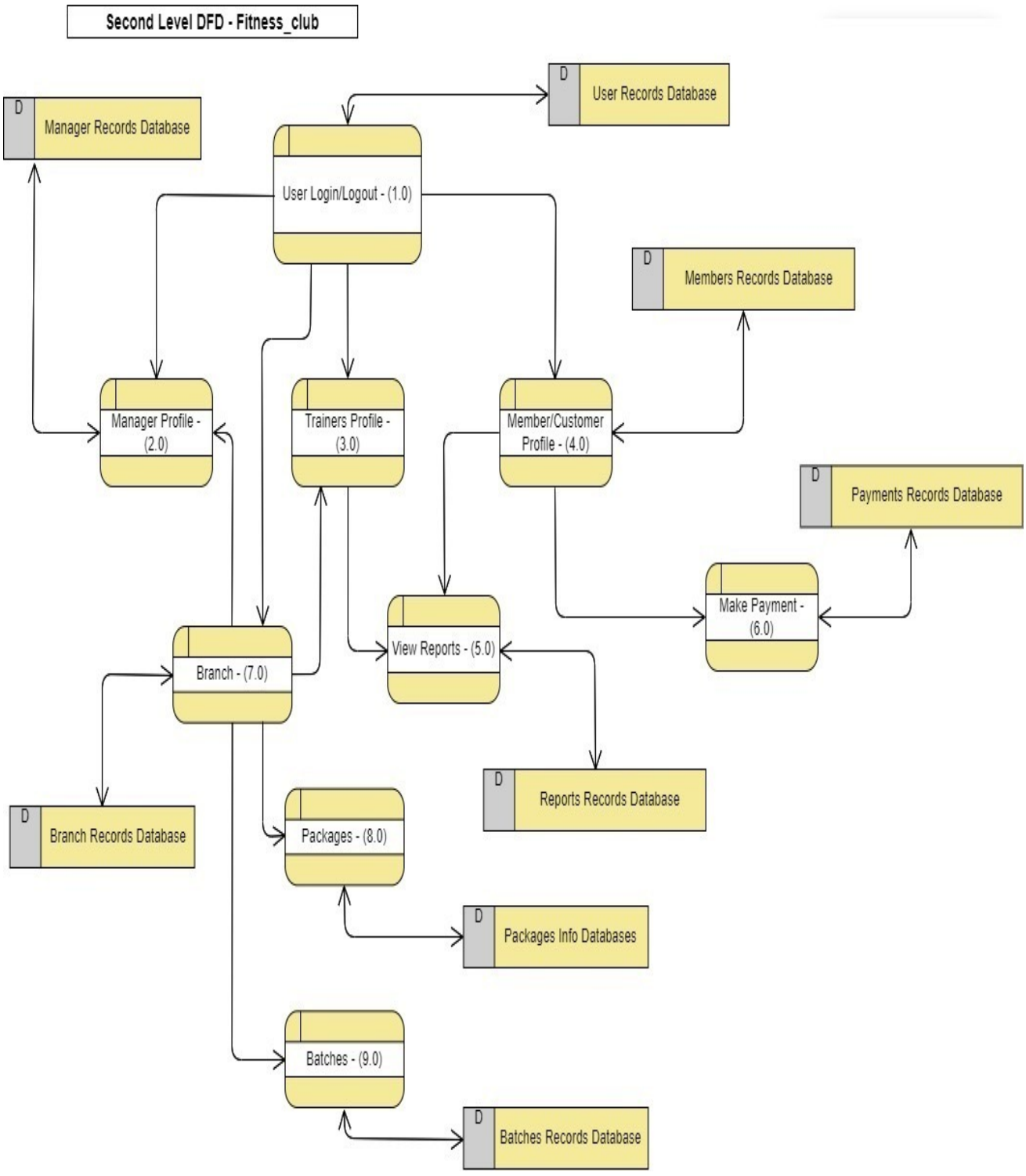


- **Data Flow Diagrams**

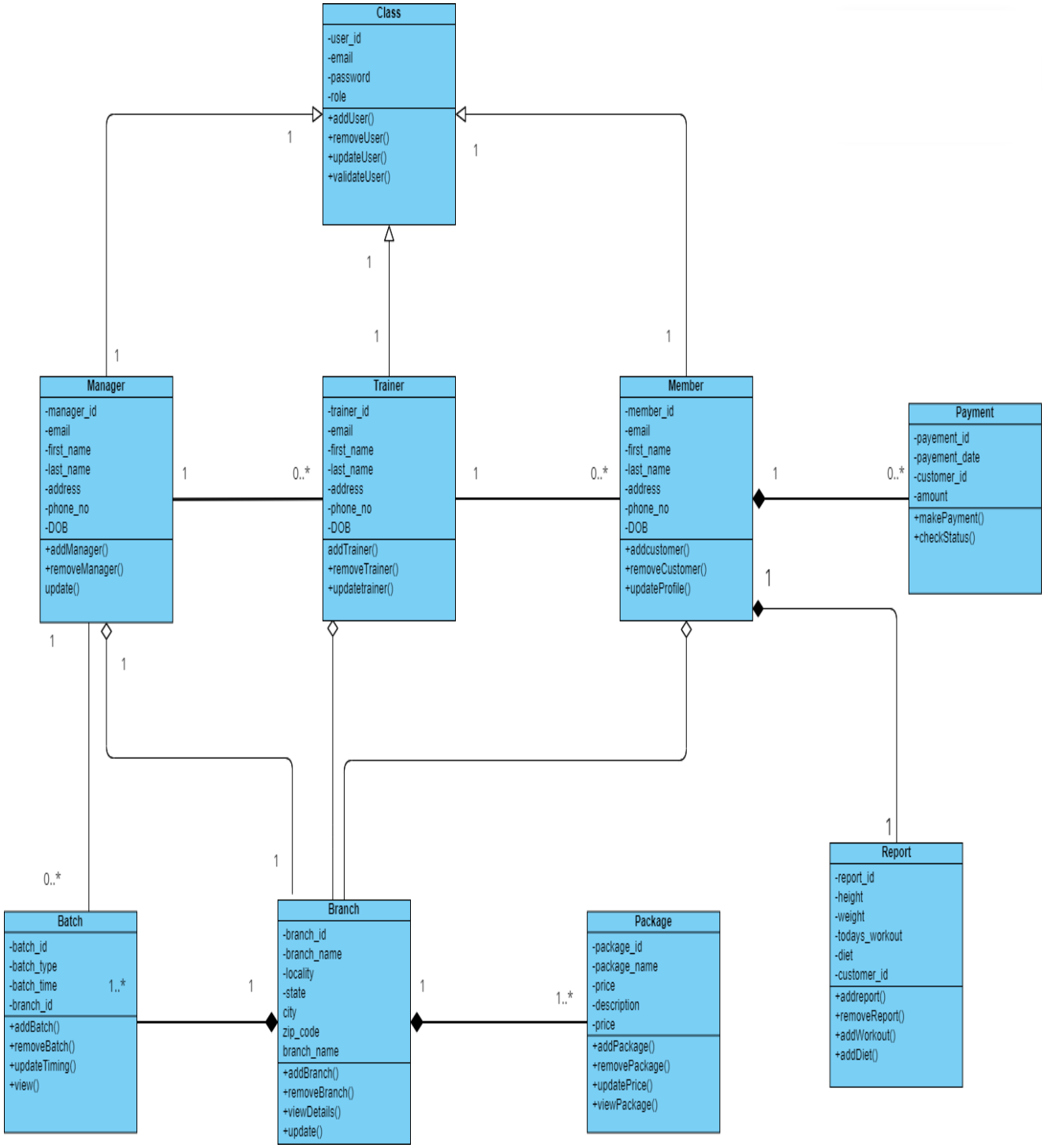




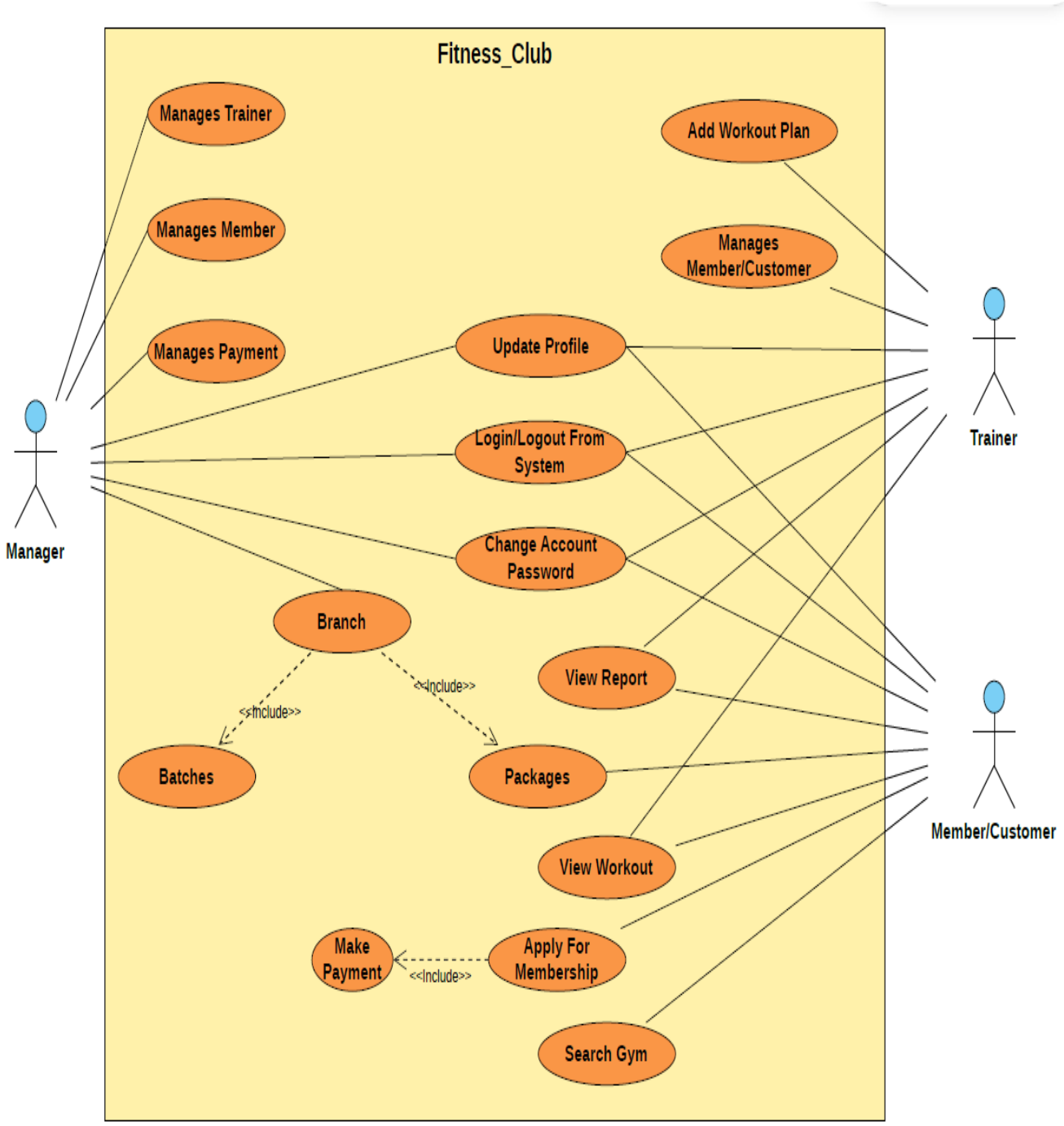
- **Second level DFD**



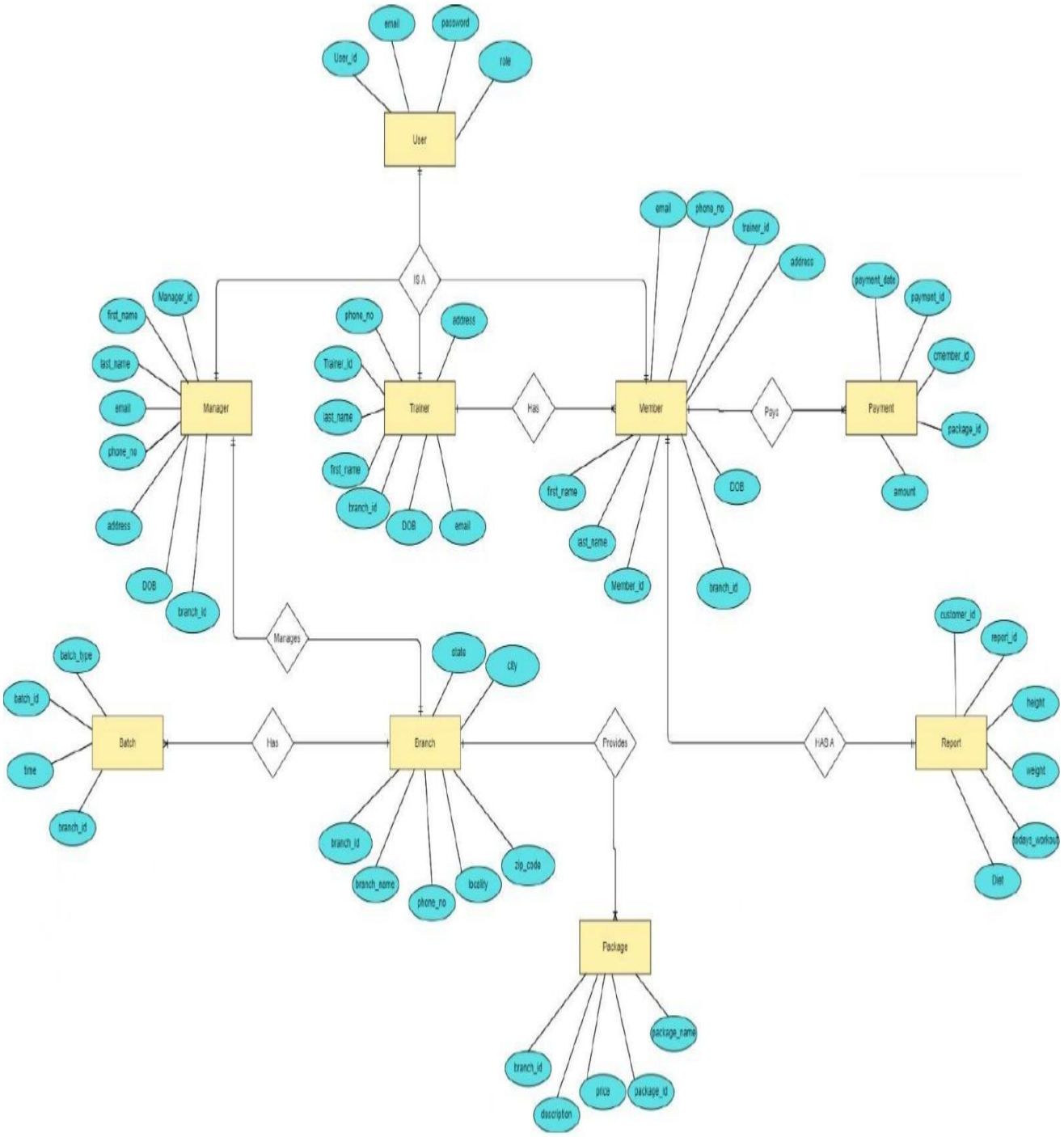
- **Class Diagram**



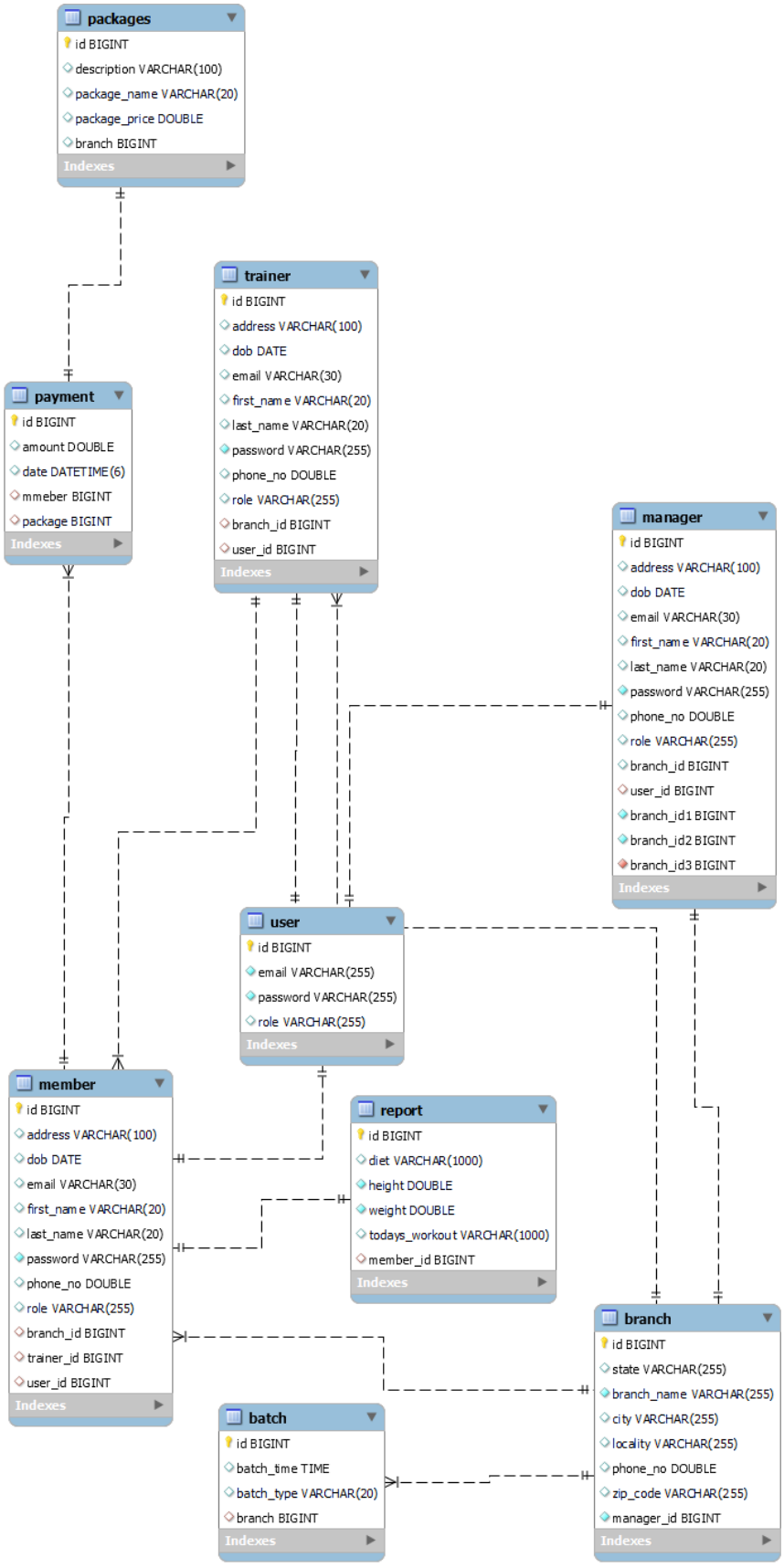
- **Use Case Diagram**



- **ER Diagram**


email
password
User_id
role
User
email
phone_no
trainer_id
address
payment_date
payment_id
member_id
package_id
amount
DOB
first_name
last_name
Member_id
branch_id
Pays
Payment
Has
Trainer
phone_no
address
Trainer_id
last_name
first_name
branch_id
DOB
email
IS A
Manager_id
first_name
last_name
email
phone_no
address
DOB
branch_id
Manager
Manages
batch_type
batch_id
time
branch_id
Batch
Has
state
city
Branch
branch_id
branch_name
phone_no
locality
zip_code
Provides
Package
branch_id
price
package_id
discripton
package_name
IAS A
customer_id
report_id
height
weight
todays_workout
Diet
Report

System Generated ERD



5. TABLE STRUCTURE

User:

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

Manager:

Field	Type	Null	Key	Default	Extra
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:

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

Trainer:

Field	Type	Null	Key	Default	Extra
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:

Field	Type	Null	Key	Default	Extra
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:

Field	Type	Null	Key	Default	Extra
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:

Field	Type	Null	Key	Default	Extra
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:

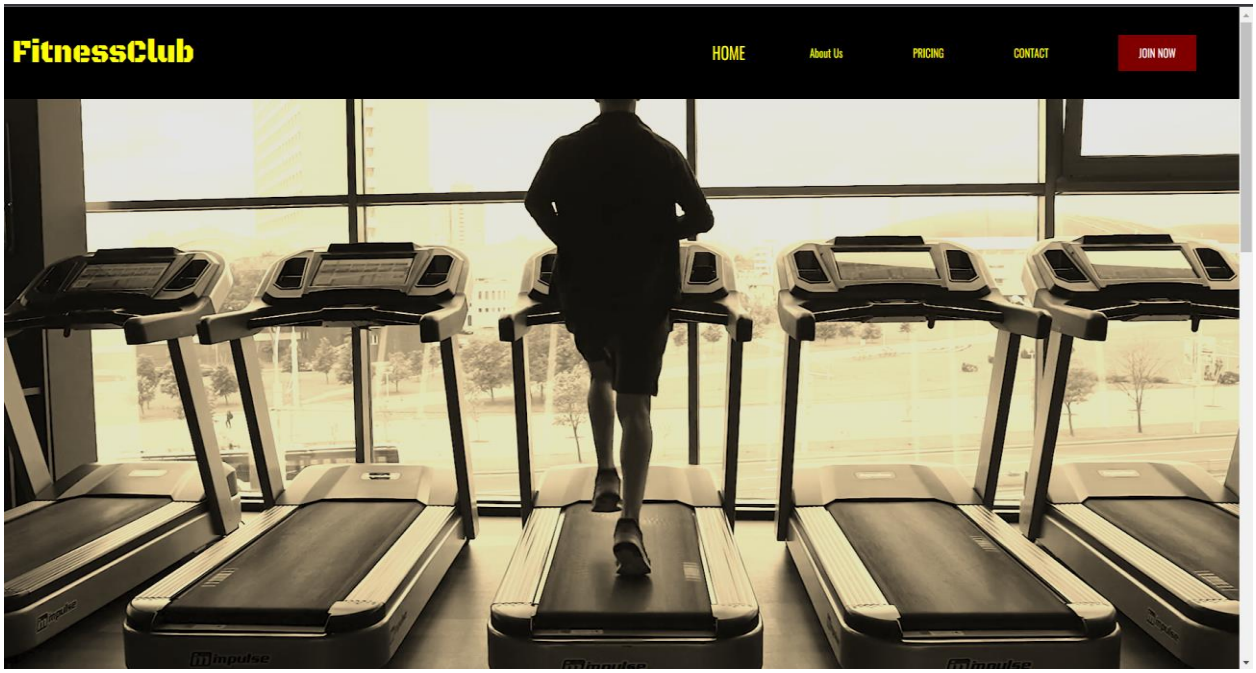
Field	Type	Null	Key	Default	Extra
PaymentId	bigint	NO	PRI	NULL	auto_increment
amount	double	YES		NULL	
date	datetime(6)	YES		NULL	
member	bigint	YES	MUL	NULL	
package	bigint	YES	MUL	NULL	

Report:

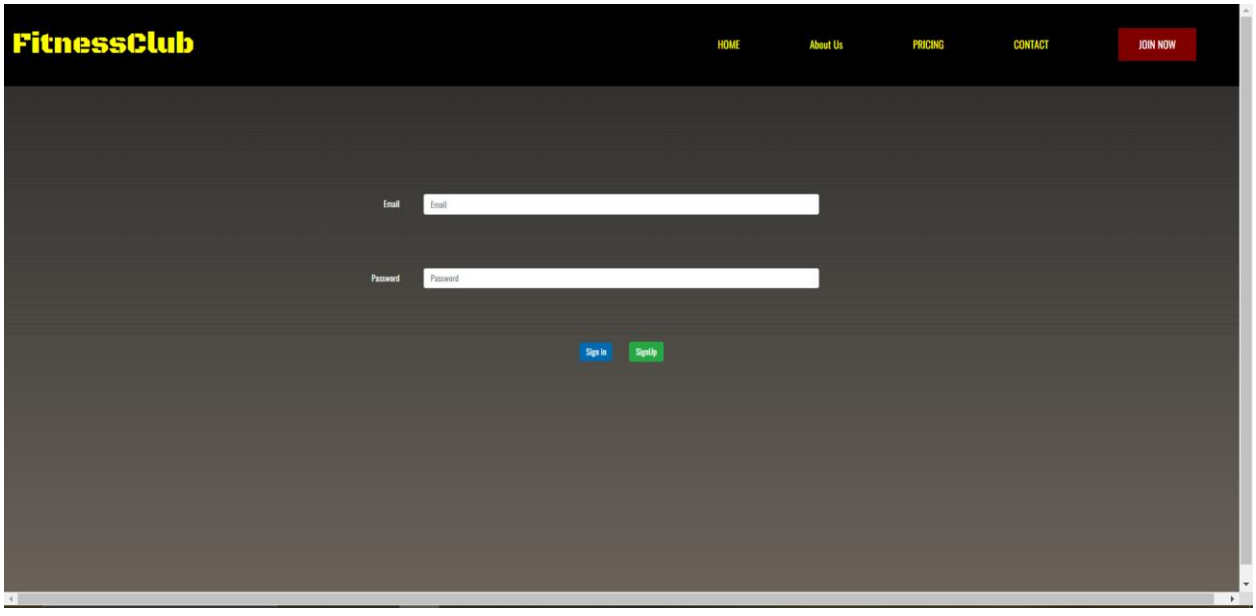
Field	Type	Null	Key	Default	Extra
ReportId	bigint	NO	PRI	NULL	auto_increment
diet	varchar(1000)	YES		NULL	
height	double	NO		NULL	
weight	double	NO		NULL	
todays_workout	varchar(1000)	YES		NULL	
member_id	bigint	YES	MUL	NULL	

6.SCREENSHOTS

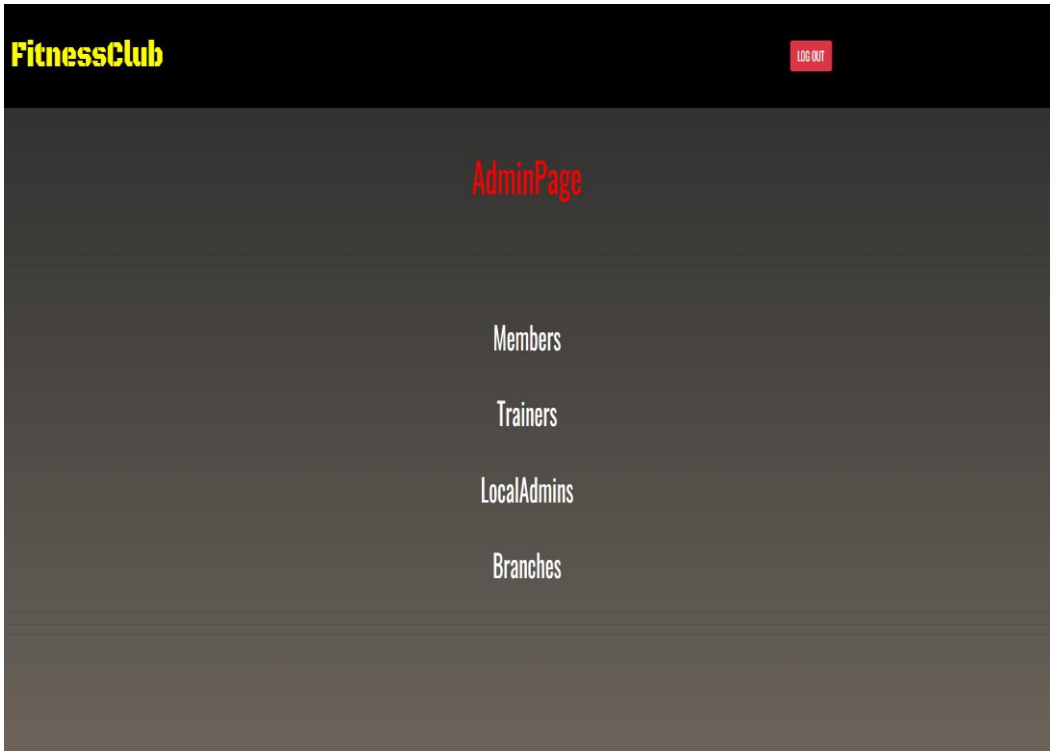
HOME PAGE



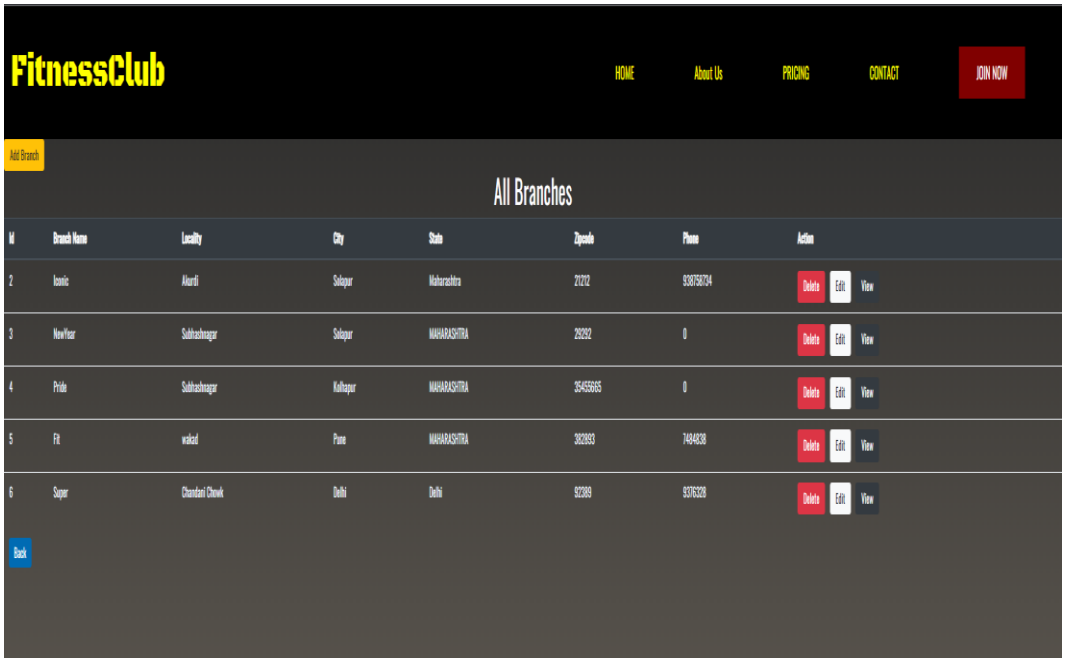
SIGN IN / SIGN UP PAGE



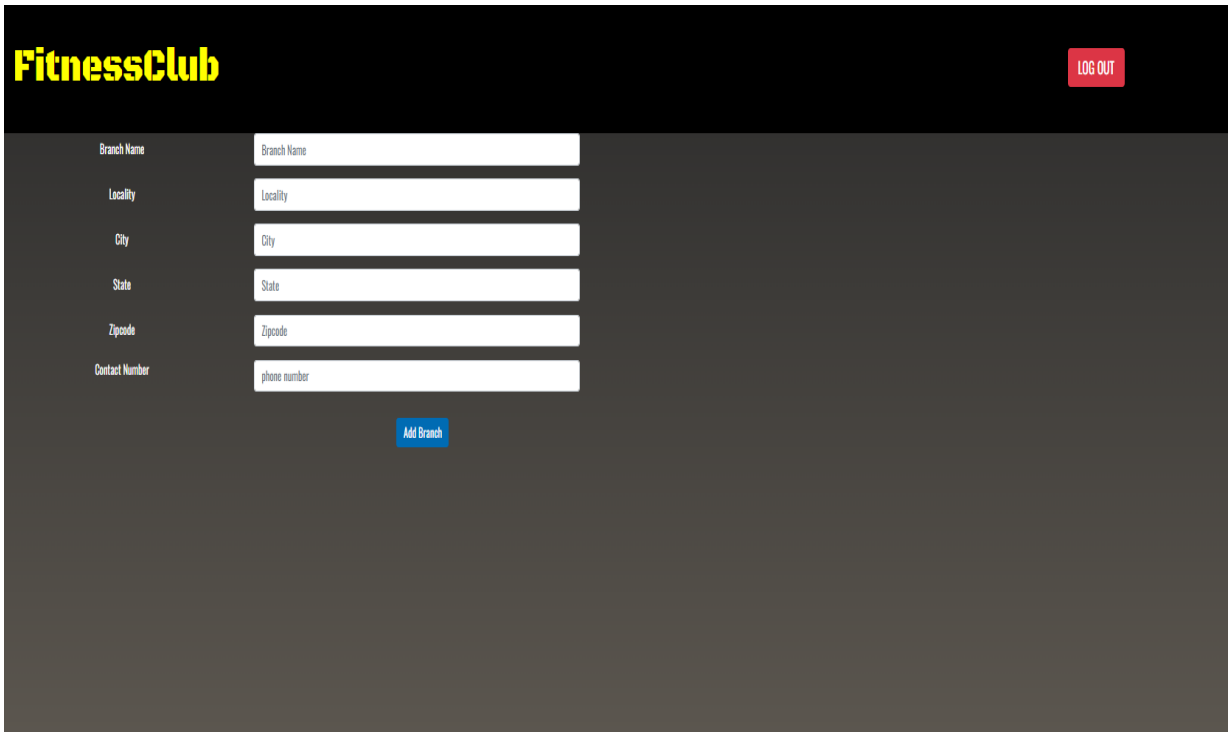
ADMIN PAGE



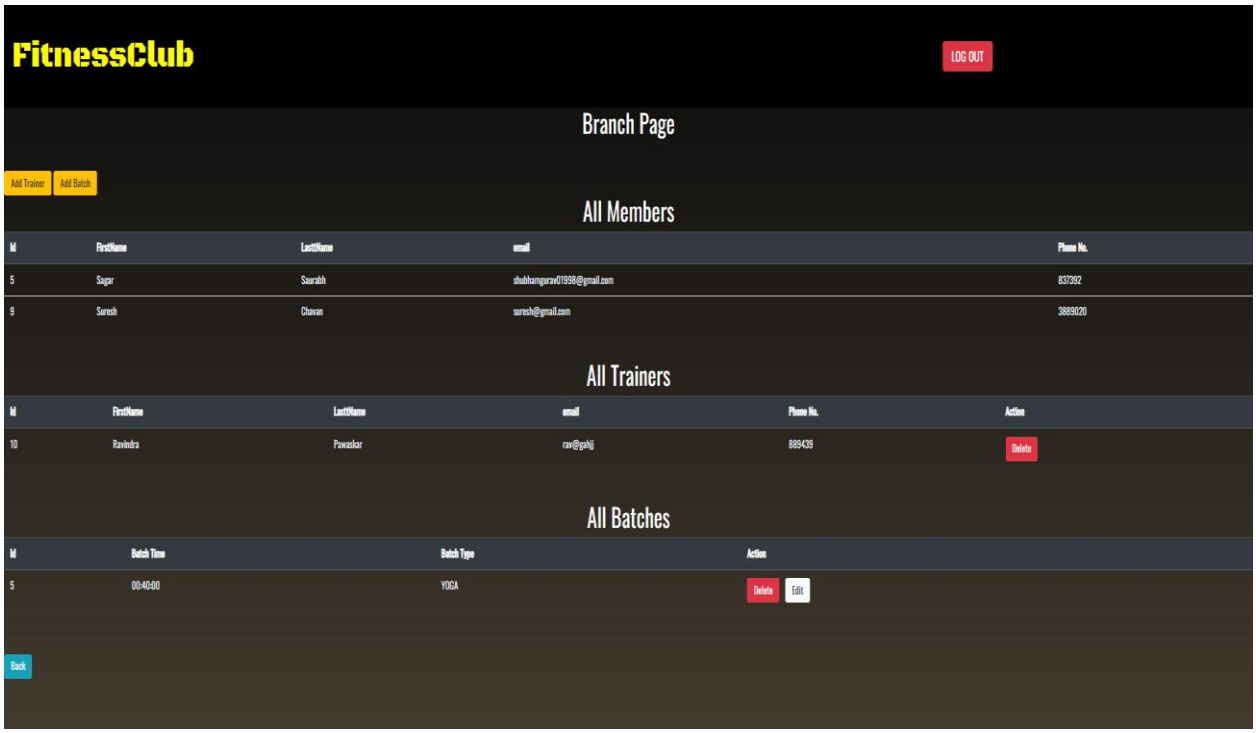
ALL BRANCHES



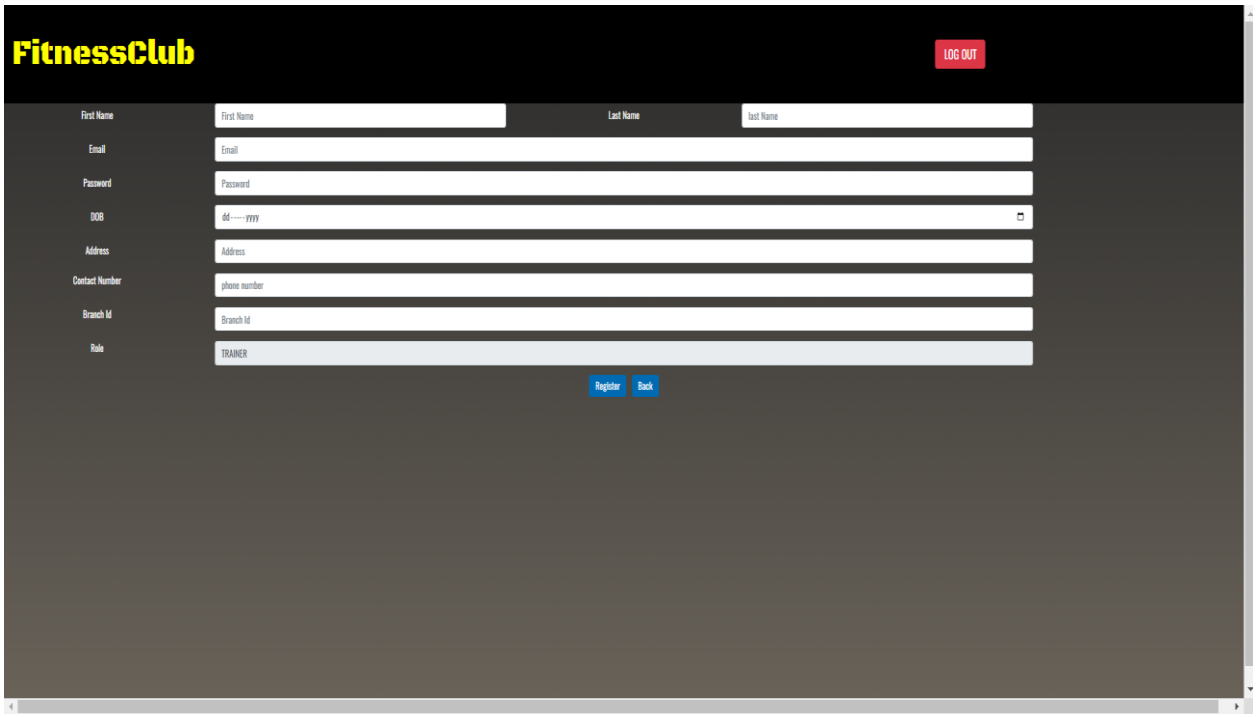
ADD BRANCH FORM



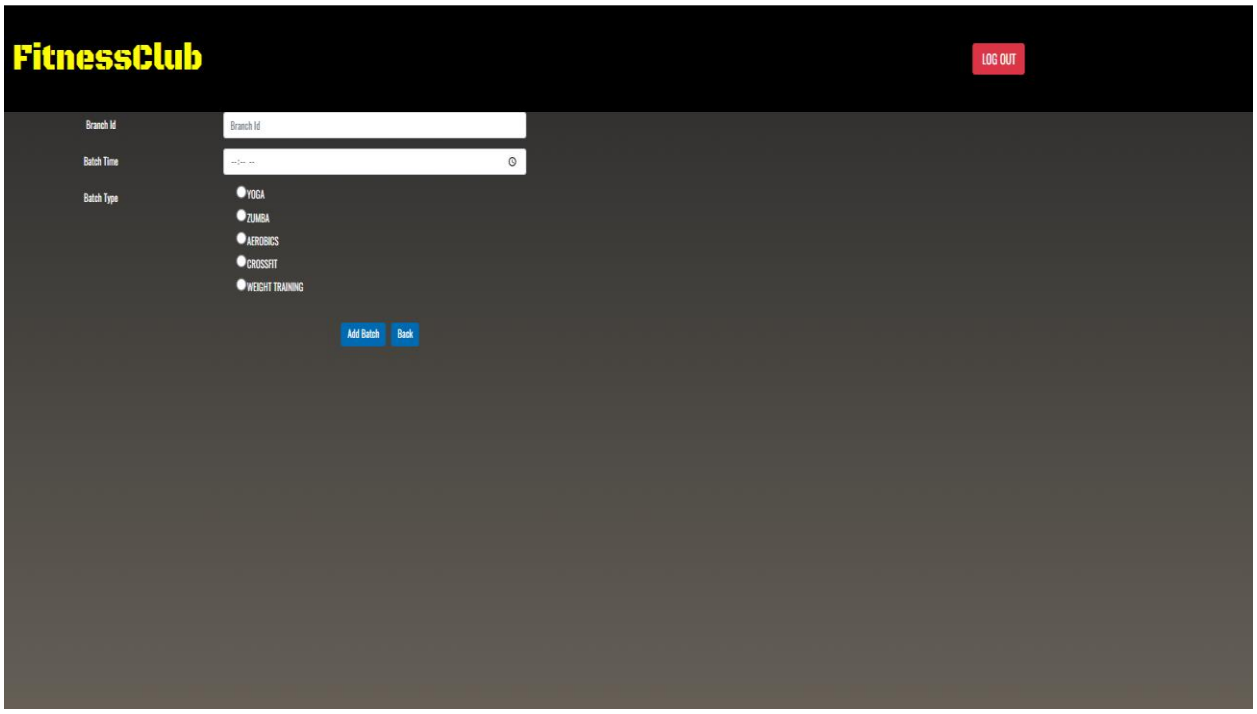
GYM MANAGER BRANCH PAGE



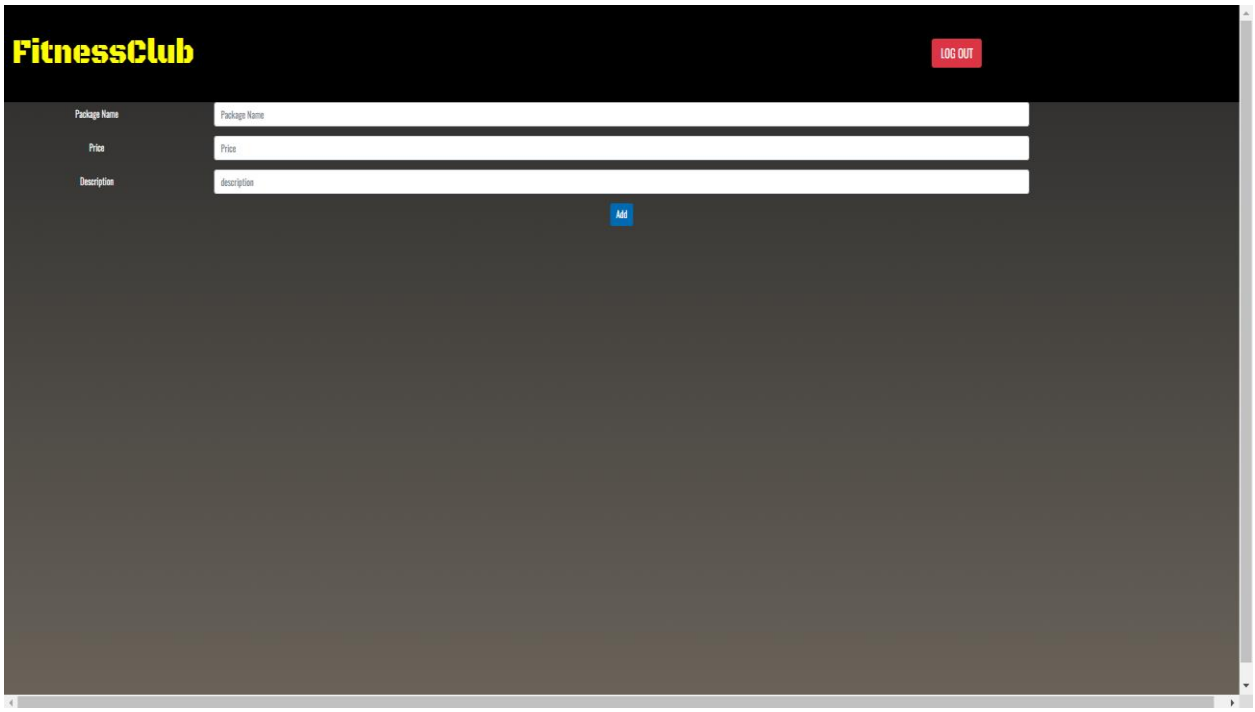
TRAINER ADD PAGE



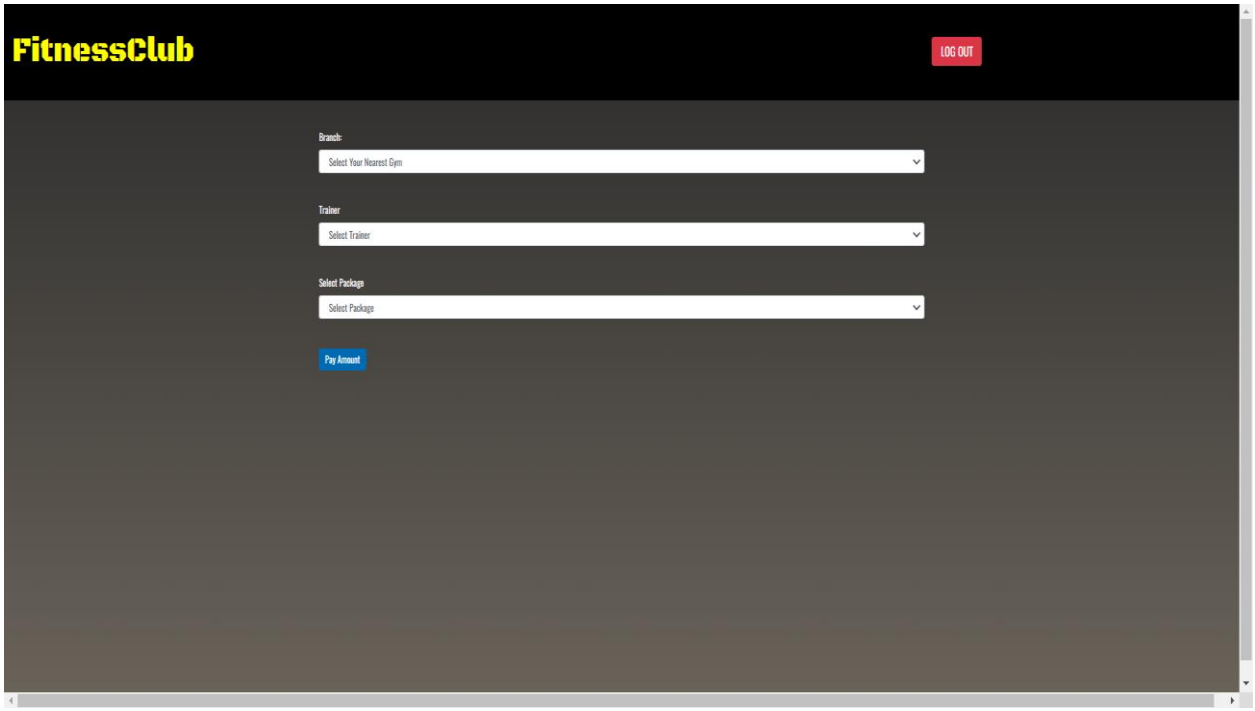
GYM SHIFT PAGE



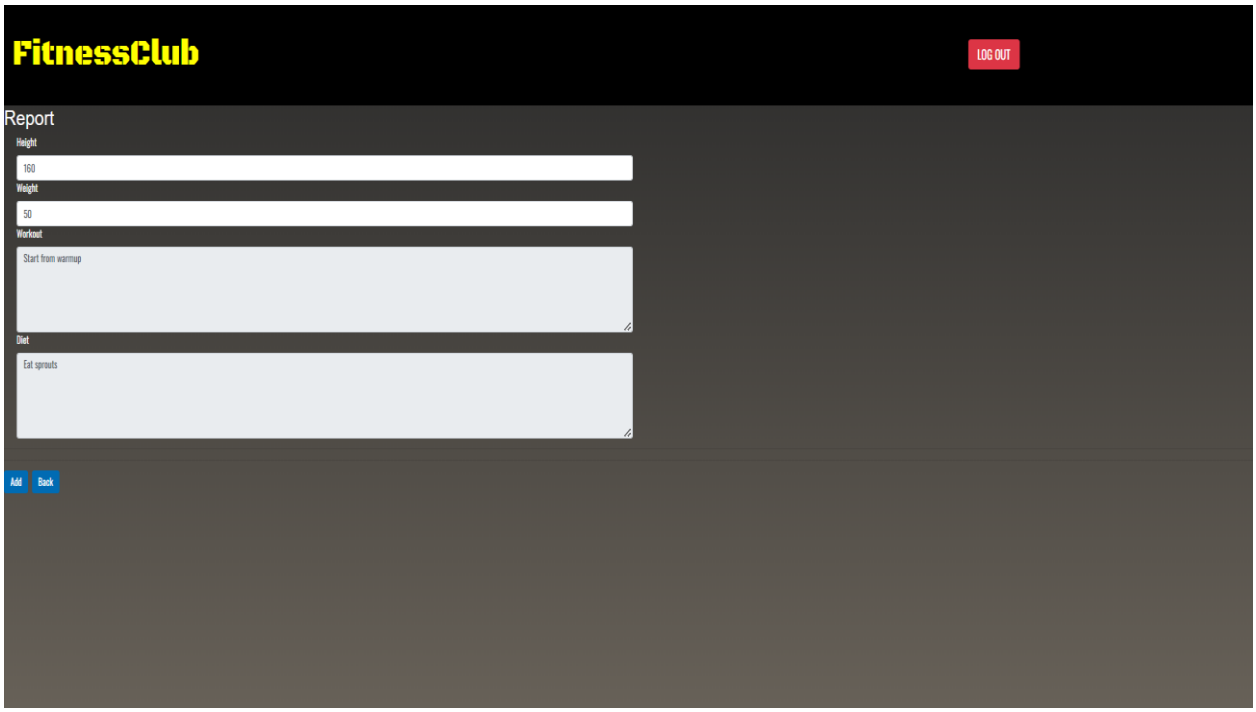
ADD NEW PACKAGE



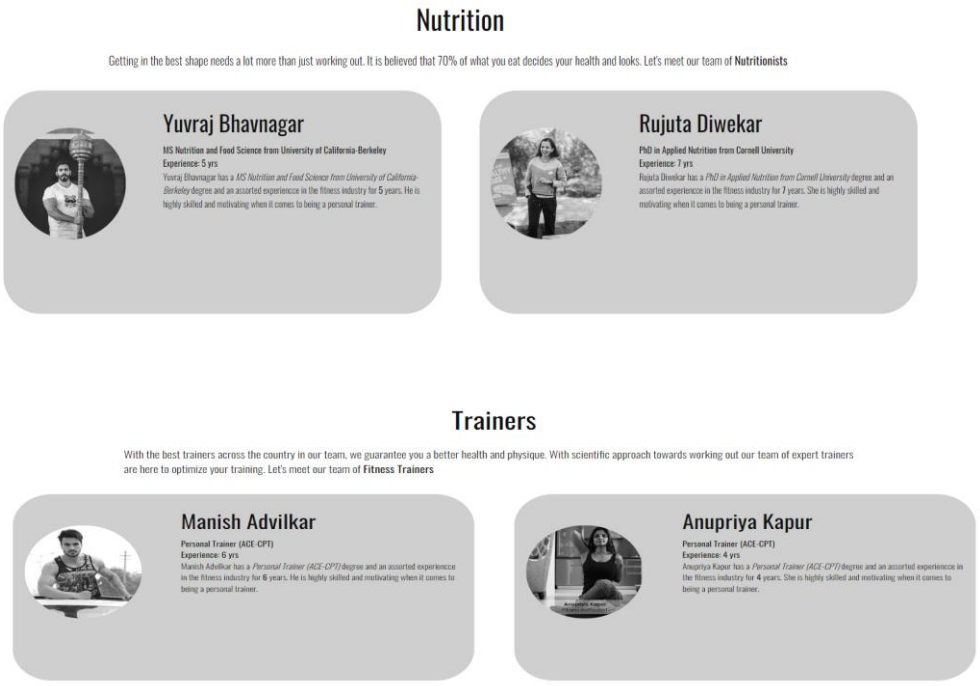
PURCHASE MEMBERSHIP



WORKOUT REPORT



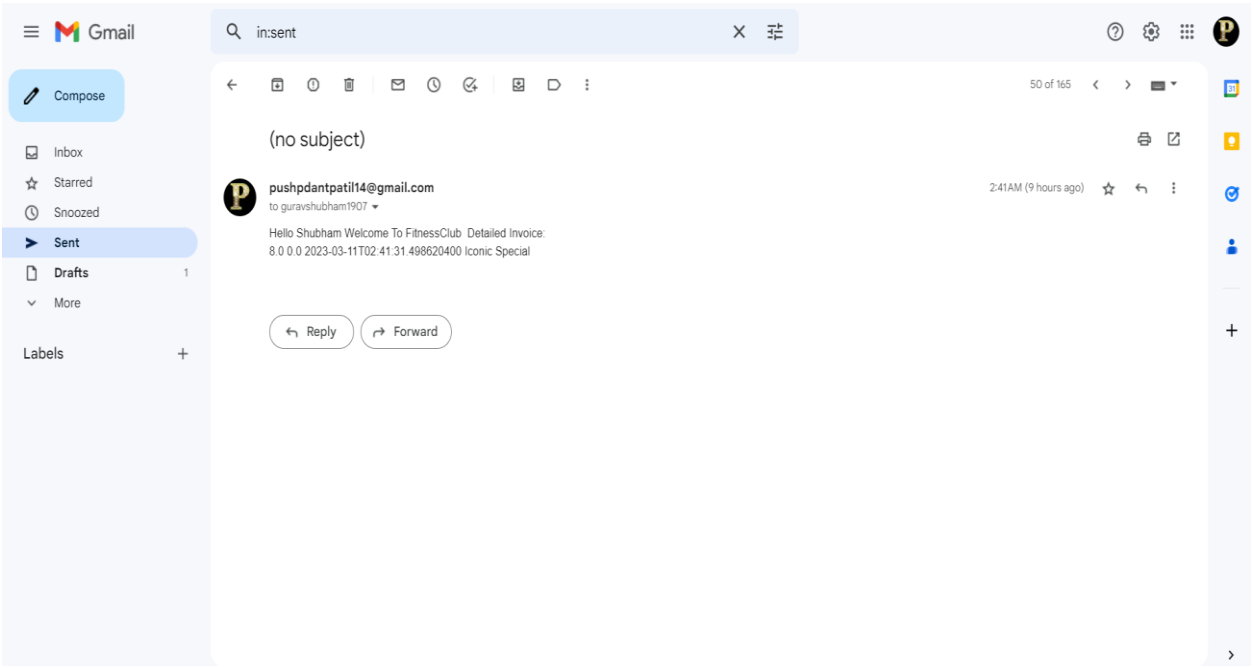
ABOUT US



PASSWORD ENCRYPTION

```
| 30 | dhan@gmail.com           | $2a$10$vkN4JfW9eP.AM/A05w2sTeFjg7geinWqtRteUhnZQRf4q6vlqEIvu | MANAGER |
| 33 | guravshubham1907@gmail.com | $2a$10$PpFXK5qTKwMYUzcumaXgf.MwzrqVXPIrvU2OKlDTMVML9YHOvM7uq | 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)
  - Bootstrap · The most popular HTML, CSS, and JS library in the world. (getbootstrap.com)
  - React Tutorial (w3schools.com)
  - Learn Spring Boot | Baeldung
  - **Java 11 api docs**
  - Spring Data JPA - Reference Documentation
  - **cult.fit - Bring gym home**
  - **Gym Management-UML**