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A Mini -Project Work on

"Gym Management System"

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Bachelor of Engineering
In
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Certificate

This is to Certify that the Mini-Project work entitled **"Gym Management System"** is a bonafide work carried out by **Chethan Holla B V (1AY18IS030) and Jeevan V (1AY18IS048)** in partial fulfillment for the award of the degree of **Bachelor of Engineering** in **Information Science and Engineering** of the **Visvesvaraya Technological University**, Belagavi during the year 2020-21. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The Project has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

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Signature with date

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ABSTRACT

The purpose of the Gym Management System is to automate the existing manual system by the help of computerized equipments and full-fledged computer software, fulfilling their requirements, so that valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. The required hardware and software are easily available and easy to work with.

Gym Management System, as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their activities rather than to concentrate on record keeping. Thus it will help organization in better utilization of resources. The organization can maintain computerized records without redundant entries. That means that one need not be distracted by information that is not relevant, while being able to reach the information.

The aim is to automate its existing manual system. This project assists the gym owner on the usage of databases required by the gym. It can be used to make and hold databases of existing trainers and members and newly joining members. Basically the project describes how to manage for good performance and better services for the clients.

TABLE OF CONTENTS

TABLE OF FIGURES

CHAPTER 1

INTRODUCTION

Today the world's most forward looking gyms are trying to provide more reliable and accurate services in their field, offering services to the customers and employees with all the available choices in their interest. It may be a leading many different gyms. Every Gym nowadays is trying to computerize its activities to provide better services to its customers. The aim is to automate its existing manual system by the help of computerized equipments and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same.

The project, "GYM MANAGEMENT SYSTEM" is also a step towards offering more or less the similar features. This system enables to manage and record the activities of whole Gym of multifacility skills only.

Gym Management System enables the other staff to provide their services in a more systematic and efficient manner, hence improving the goodwill of concerned institution. This helps the administrator to analyze upon the performance of store.

1.1   Introduction to DBMS

DBMS stands for **D**ata**b**ase **M**anagement **S**ystem. We can break it like this DBMS = Database + Management System. Database is a collection of data and Management System is a set of programs to store and retrieve those data. Basically DBMS is a software tool to organize (create, retrieve, update and manage) data in a database.

The main aim of a DBMS is to supply a way to store up and retrieve database information that is both convenient and efficient. By data, we mean known facts that can be recorded and that have embedded meaning. Normally people use software such as DBASE IV or V, Microsoft ACCESS, or EXCEL to store data in the form of database. A datum is a unit of data. Meaningful data combined to form information. Hence, information is interpreted data – data provided with semantics. MS. ACCESS is one of the most common examples of database management software.

Database systems are meant to handle large collection of information. Management of data involves both defining structures for storage of information and providing mechanisms that can do the manipulation of those stored information. Moreover, the database system must ensure the safety of the information stored, despite system crashes or attempts at unauthorized access.

1.1.1 Why DBMS?

- To develop software applications in less time.
- Data Independence and efficient use of data.
- For uniform data administration.
- For data integrity and security.
- For concurrent access of data, and data recovery from crashes.
- To use user-friendly declarative query language.

1.1.2 Database applications

- **Telecom:** There is a database to keeps track of the information regarding calls made, network usage, customer details etc. Without the database systems it is hard to maintain that huge amount of data that keeps updating every millisecond.

- **Industry:** Where it is a manufacturing unit, warehouse or distribution centre, each one needs a database to keep the records of ins and outs. For example distribution centre should keep a track of the product units that supplied into the centre as well as the products that got delivered out from the distribution centre on each day; this is where DBMS comes into picture.

- **Education sector:** Database systems are frequently used in schools and colleges to store and retrieve the data regarding student details, staff details, course details, exam details, payroll data, attendance details, fees details etc. There is a hell lot amount of inter-related data that needs to be stored and retrieved in an efficient manner.

- **Online shopping:** You must be aware of the online shopping websites such as Amazon, Flipkart etc. These sites store the product information, your addresses and

preferences, credit details and provide you the relevant list of products based on your query. All this involves a Database management system.

- **Banking system:** For storing customer info, tracking day to day credit and debit transactions, generating bank statements etc. All this work has been done with the help of Database management systems.

1.1.3 Advantages of DBMS

A DBMS manage data and has many advantages.

- **Data Independence:** Application programs should be as free or independent as possible from details of data representation and storage. DBMS can supply an abstract view of the data for insulating application code from such facts.

- **Efficient data access:** DBMS utilizes a mixture of sophisticated concepts and techniques for storing and retrieving data competently and this feature becomes important in cases where the data is stored on external storage devices.

- **Data integrity and security:** If data is accessed through the DBMS, the DBMS can enforce integrity constraints on the data.

- **Data administration:** When several users share the data, integrating the administration of data can offer major improvements. Experienced professionals understand the nature of the data being managed and can be responsible for organizing the data representation to reduce redundancy and make the data to retrieve efficiently.

- **Providing backup and recovery:** A DBMS must provide facilities for recovering from hardware or software failures. The backup and recovery subsystem of the DBMS is responsible for recovery.

- **Permitting inferencing and actions using rules:** Some database systems provide capabilities for defining deduction rules for inferencing new information from the stored database facts.
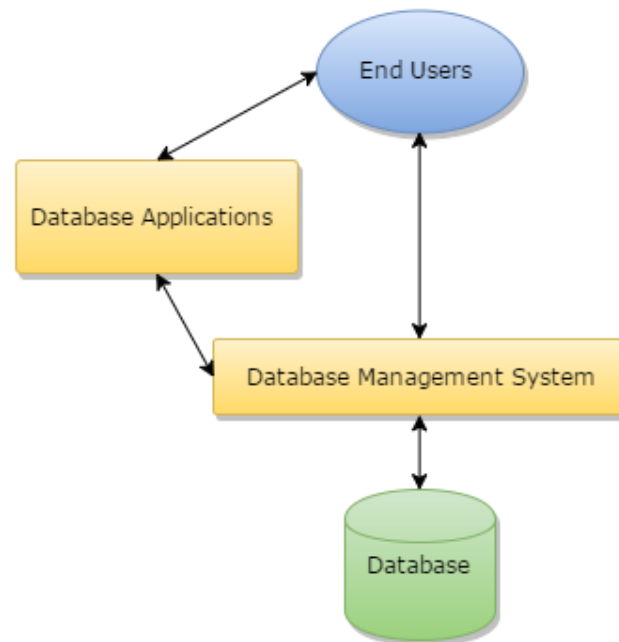
1.1.4 Components of DBMS

Fig-1.1: Components of a Database Management System

- **Users:** Users may be of any kind such as DB administrator, System developer or database users.

- **Database application:** Database application may be Departmental, Personal, organization's and / or Internal.

- **DBMS:** Software that allow users to create and manipulate database access.

- **Database:** Collection of logical data as a single unit.

- **Database access language:** This is used to access the data to and from the database, to enter new data, update existing data, or retrieve required data from databases. The user writes a set of appropriate commands in a database access language, submits these to the DBMS, which then processes the data and generates and displays a set of results into a user readable form.

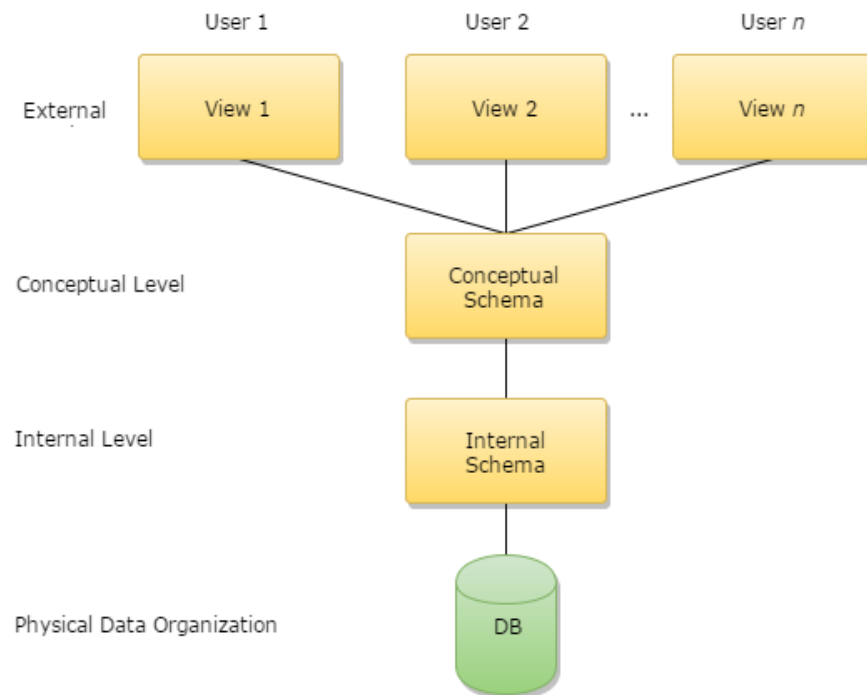## 1.1.5 Three-Schema architecture

Fig-1.2: Architecture of database system

The levels form a three-level architecture that includes an external, a conceptual, and an internal level. The way users recognize the data is called the external level. The way the DBMS and the operating system distinguish the data is the internal level, where the data is actually stored using the data structures and file. The conceptual level offers both the mapping and the desired independence between the external and internal levels.

CHAPTER 2

SYSTEM REQUIREMENTS

2.1 Hardware Requirements

- **Processor:** Intel Core2 Quad @ 2.4Ghz on Windows® Vista 64-Bit / Windows® 7 64-Bit / Windows® 8 64-Bit / Windows® 8.1 64-Bit.

- **RAM:** 2GB of RAM

- **Memory:** 256GB Hard drive

- **Keyboard:** MS compatible keyboard

- **Mouse:** MS compatible mouse

2.2 Software Requirements

- **Operating system:** Windows® Vista 64-Bit / Windows® 7 64-Bit / Windows® 8 64-Bit / Windows® 8.1 64-Bit.

- **Front end:** HTML and CSS

- **Back end:** Visual Studio Code or any Text Editor

- **Server Side Scripting:** PHP

- **Web Server:** Xampp x64 bit

CHAPTER 3

DESIGN

3.1 ER Diagram

Fig-3.1: Entity Relationship Diagram

1:N

- One admin can add many gyms.
- One admin can view many gyms.
- One admin can add many trainer.
- One admin can view many trainer.
- One admin can add many payments.
- One admin can view many payments.
- One admin can add many members.
- One admin can view many members.

1:1

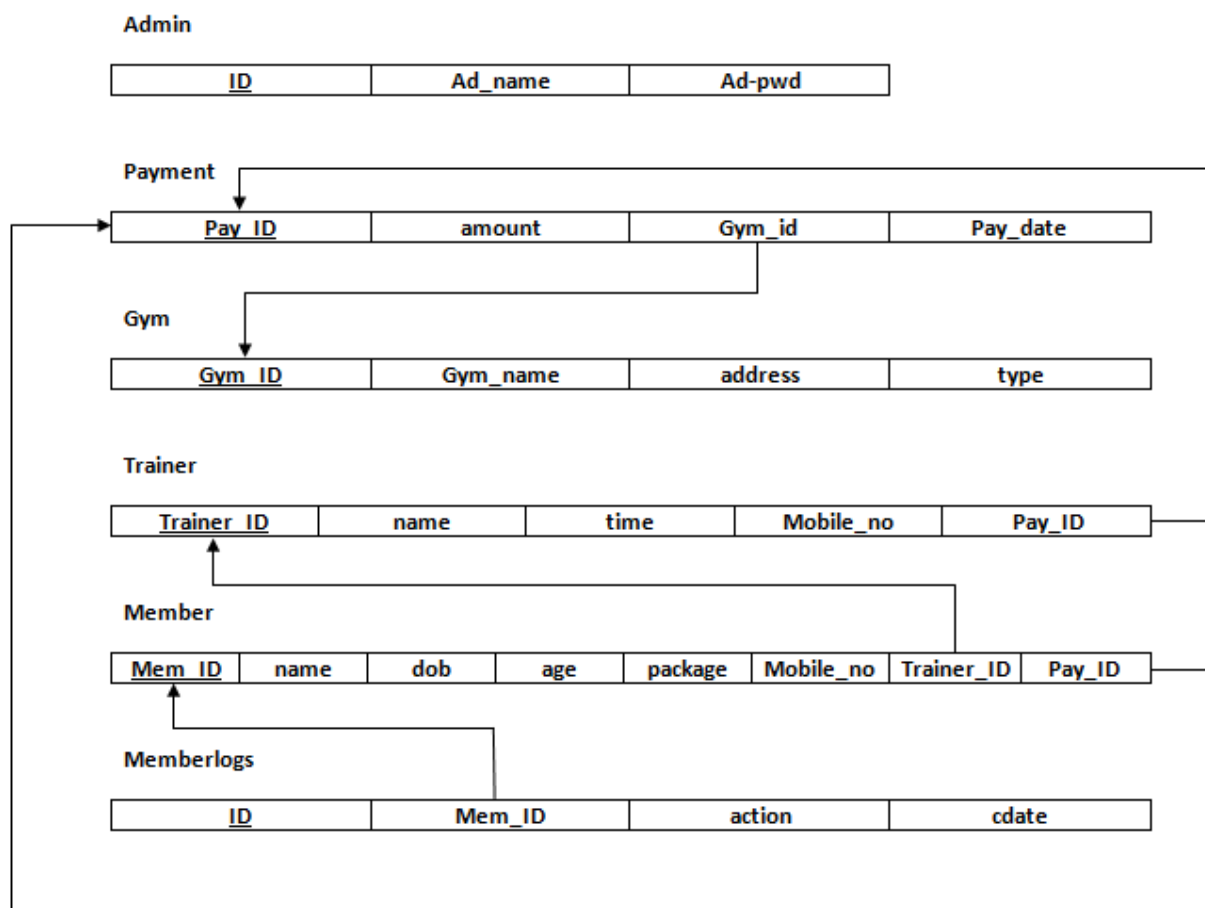- One member will have one log stored.

3.2 Schema Diagram

Fig-3.2: Schema Diagram

Schema Diagram: An illustrative display of (most aspects of) a database schema.

Schema Construct: A component of the schema or an object within the schema, e.g., STUDENT, COURSE.

CHAPTER 4

IMPLEMENTATION

4.1 Tables

4.1.1 ADMIN

SNO	COLUMN_NAME	DATA_TYPE	DESCRIPTION
1	ID	INTEGER	PRIMARY KEY
2	UNAME	VARCHAR	
3	PWD	VARCHAR	

CREATE TABLE ADMIN (

  ID INT(10) PRIMARY KEY,

  UNAME VARCHAR(15) NOT NULL,

  PWD VARCHAR(30) NOT NULL

) ;

4.1.2 MEMBER

SNO	COLUMN_NAME	DATA_TYPE	DESCRIPTION
1	MEM_ID	VARCHAR	PRIMARY KEY
2	NAME	VARCHAR	
3	DOB	VARCHAR	
4	AGE	INTEGER	
5	WEIGHT	INTEGER	
6	PACKAGE	VARCHAR	
7	MOBILENO	BIGINTEGER	
8	PAY_ID	VARCHAR	FOREIGN KEY
9	TRAINER_ID	VARCHAR	FOREIGN KEY

CREATE TABLE MEMBER (

  MEM_ID VARCHAR(10) PRIMARY KEY,

  NAME VARCHAR(15),

  DOB VARCHAR(10),

  AGE INT(2),

WEIGHT INT(3),

PACKAGE VARCHAR(10),

MOBILE BIGINT(10) ,

PAY_ID VARCHAR(10),

TRAINER_ID VARCHAR(10),

FOREIGN KEY (PAY_ID) REFERENCES PAYMENT(PAY_ID),

FOREIGN KEY (TRAINER_ID) REFERENCES TRAINER(TRAINER_ID)

) ;

4.1.3 TRAINER

SNO	COLUMN_NAME	DATA_TYPE	DESCRIPTION
1	TRAINER_ID	VARCHAR	PRIMARY KEY
2	NAME	VARCHAR	
3	TIME	VARCHAR	
4	MOBILENO	BIGINTEGER	
5	PAY_ID	VARCHAR	FOREIGN KEY

CREATE TABLE TRAINER (

TRAINER_ID VARCHAR(10) PRIMARY KEY,

NAME VARCHAR(15),

TIME VARCHAR(5),

MOBILENO BIGINT(10),

PAY_ID VARCHAR(10),

FOREIGN KEY (PAY_ID) REFERENCES PAYMENT(PAY_ID)

);

4.1.4 PAYMENT

SNO	COLUMN_NAME	DATA_TYPE	DESCRIPTION
1	PAY_ID	VARCHAR	PRIMARY KEY
2	AMOUNT	INTEGER	
3	GYM_ID	VARCHAR	FOREIGN KEY

4	PAY_DATE	VARCHAR	

CREATE TABLE PAYMENT (

 PAY_ID VARCHAR(10) NOT NULL,

 AMOUNT INT(5),

 GYM_ID VARCHAR(10),

 PAY_DATE VARCHAR(7),

 FOREIGN KEY (GYM_ID) REFERENCES PAYMENT(GYM_ID)

);

4.1.5 GYM

SNO	COLUMN_NAME	DATA_TYPE	DESCRIPTION
1	GYM_ID	VARCHAR	PRIMARY KEY
2	GYM_NAME	VARCHAR	
3	ADDRESS	VARCHAR	
4	TYPE	VARCHAR	

CREATE TABLE GYM (

 GYM_ID VARCHAR(10) PRIMARY KEY,

 GYM_NAME VARCHAR(30) NOT NULL,

 ADDRESS VARCHAR(100) NOT NULL,

 TYPE VARCHAR(10) NOT NULL

);

4.1.6 MEMBERLOGS

SNO	COLUMN_NAME	DATA_TYPE	DESCRIPTION
1	ID	INTEGER	PRIMARY KEY
2	MEM_ID	VARCHAR	FOREIGN KEY
3	ACTION	VARCHAR	
4	CDATE	DATETIME	

CREATE TABLE MEMBERLOGS (

 ID INTEGER(10) PRIMARY KEY,

MEM_ID VARCHAR(10) NOT NULL,

ACTION VARCHAR(20) NOT NULL,

CDATE DATETIME(10) NOT NULL,

FOREIGN KEY (MEM_ID) REFERENCES MEMBER(MEM_ID)

);

4.2 Triggers

CREATE TRIGGER `addmember` AFTER INSERT ON `member`
 FOR EACH ROW Insert into memberlogs values(null,NEW.mem_id,"Added",NOW())

4.3 Stored Procedures

DELIMITER $$

CREATE DEFINER=`root`@`localhost` PROCEDURE `showgym`()

SELECT * FROM gym$$

DELIMITER ;

CHAPTER 5

SNAPSHOTS

The following snapshot contains the login screen of the application where the username is **admin** and password is **admin.**
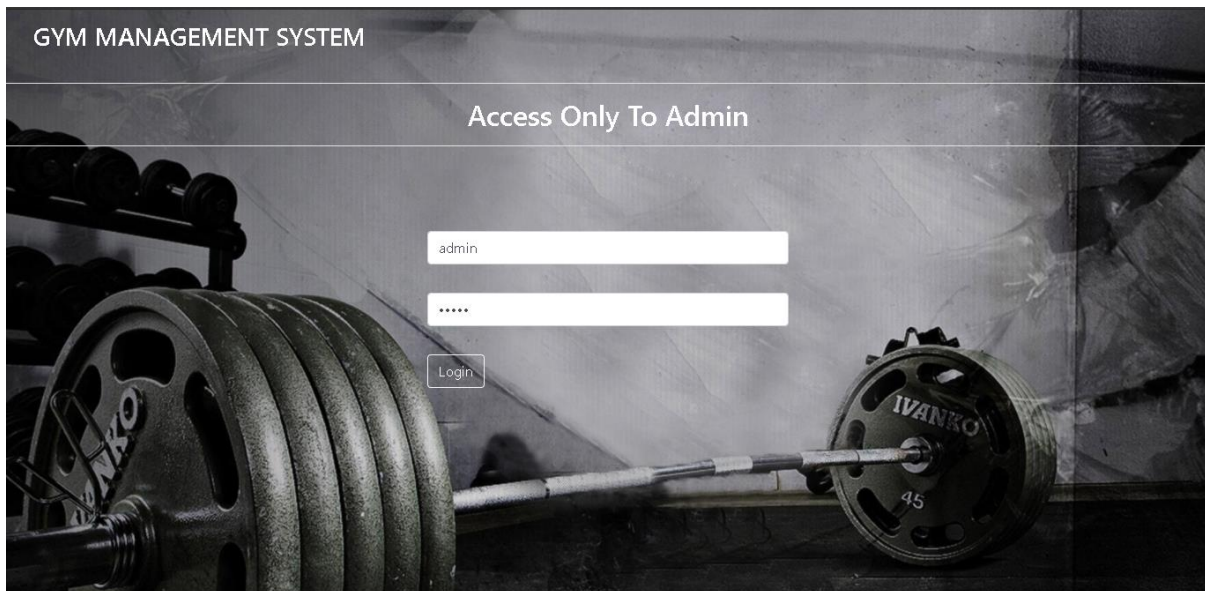
Fig-5.1: Snapshot of login window

The following snapshot contains the gym adding section where the details of the gym will be added in the database.
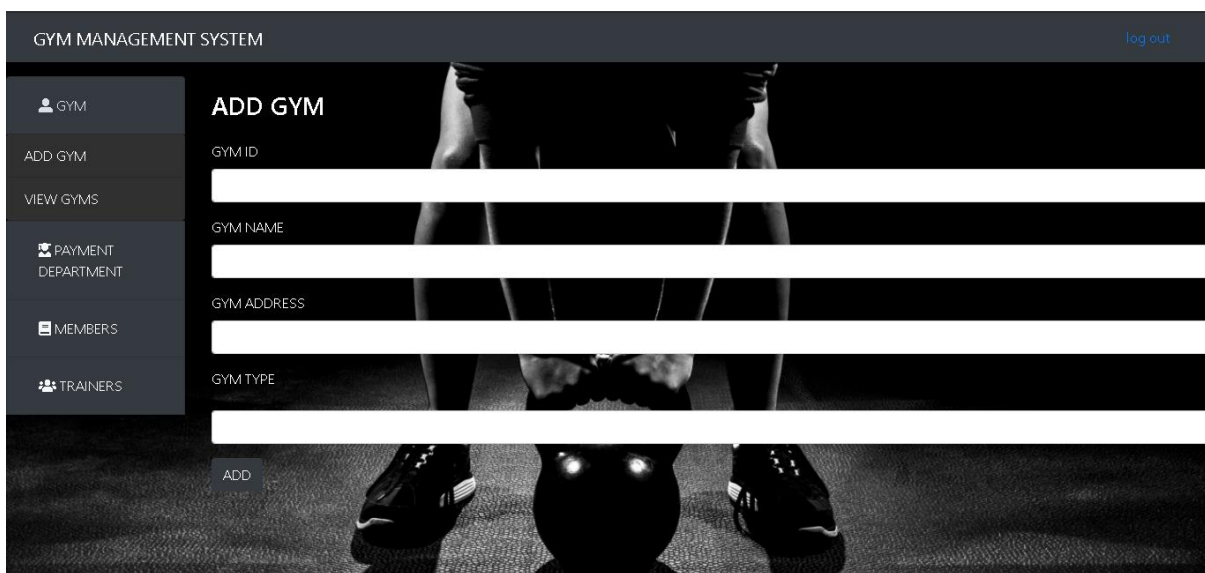
Fig-5.2: Snapshot of add gym screen

The following snapshot contains the details of all the gyms which are added.

Fig-5.3: Snapshot of view gym screen

The following snapshot contains the payment adding section where the details of the payment will be added in the database.
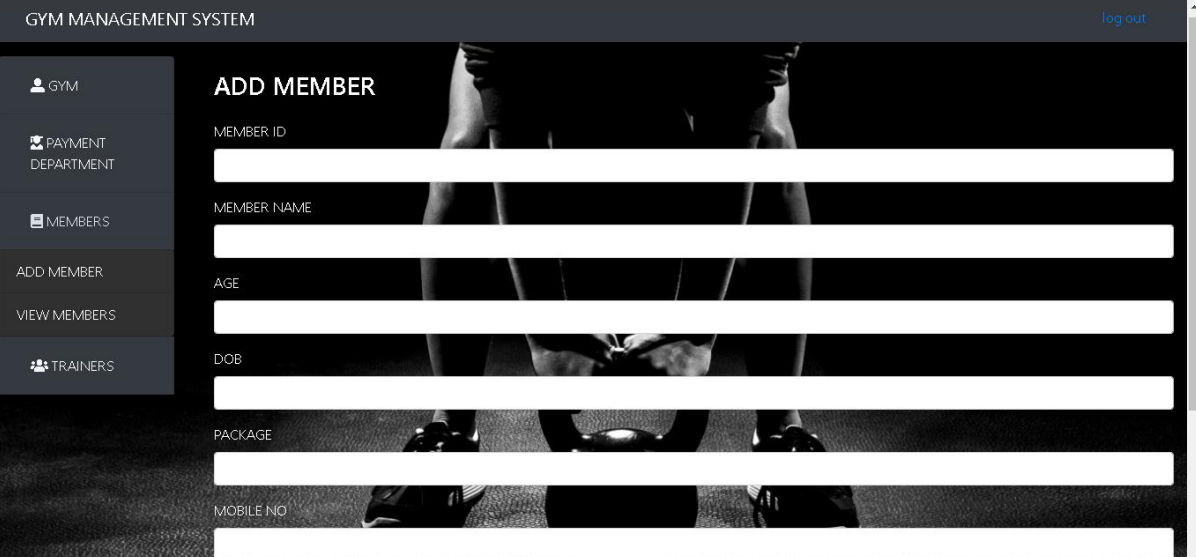

Fig-5.4: Snapshot of add payment screen

The following snapshot contains the details of all the payments which are added.

Fig-5.5: Snapshot of view payments screen

The following snapshot contains the member adding section where the details of the member will be added in the database.

Fig-5.6: Snapshot of add member screen

The following snapshot contains the details of all the members which are added.

Fig-5.7: Snapshot of view members screen

The following snapshot contains the trainer adding section where the details of the trainer will be added in the database.

Fig-5.8: Snapshot of add trainer screen

The following snapshot contains the details of all the trainers which are added.

Fig-5.9: Snapshot of view trainers screen

The following snapshot contains the gym which is shown after searching "Dynamo" in search bar. We can also see update and delete option here.

Fig-5.10: Snapshot of gym search

CONCLUSION & FUTURE ENHANCEMENT

Conclusion

Gym Management System is only a humble venture to satisfy the needs to manage the work. Several user-friendly coding have also adopted. This package shall prove to be a powerful package in satisfying all the requirements of the gyms. The objective of software planning is to provide a framework that enables the manager to make reasonable estimates made within a limited time frame at the beginning of the software project and should be updated regularly as the project progresses. This application can be used by any organization whether big or small that has challenges to overcome and managing the information of the trainers and the members.

Future Enhancement

In a nutshell, it can be summarized that the future scope of the project circles around maintaining information regarding:

- A printer can be added in the future for printing the bills.
- More advance software can be given for Gyms including more facilities.
- The platform can be hosted on the online servers to make it accessible worldwide.
- Integrate multiple load balancers to distribute the loads of the system.
- Implement backup mechanism for taking backup of database on regular basis on different servers.

The above mentioned points are the enhancements which can be done to increase the applicability and usage of this project. Here we can maintain the records of gyms and trainers, members. I have left all the options open so that if there is any other future requirement in the system by the user for the enhancement of the system then it is possible to implement them.

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