KIRAN'S GYM

DBMS PROJECT REPORT

By:

Greeshma Karanth
PES1201700407
4-D

Shivangi Gupta
PES1201700274
4-0044

Niharika Pentapati
PES1201700215
4-D

PROBLEM STATEMENT

Kiran's Gym is a new and upcoming gym. Every member who enrols gets a personal instructor to train them. Instructors, or trainers, conduct exercises for the members according to their requirements, using the state-of-the-art equipment available in the gym. Each member can take up a combination of one or more of the many different exercises offered as contained in the subscription packs. Official gym merchandise is given to the instructors on joining and is available for members to purchase. Visit us at our official website to join today!
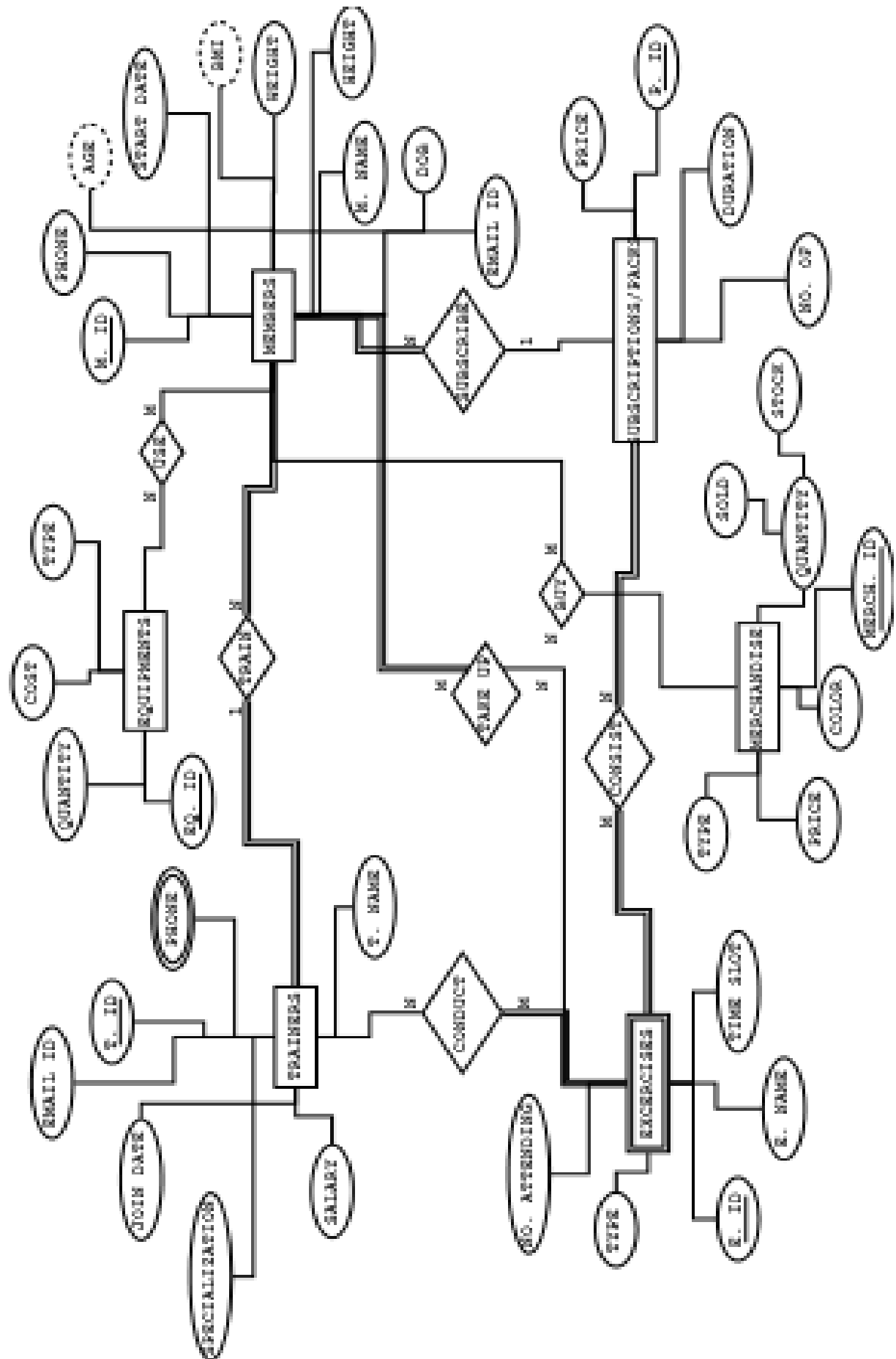
OBJECTIVE

Being fit and healthy is very important. To emphasise the importance of healthcare and fitness, we have built this example of a real-life gym. Our website allows people to sign up and choose their subscription packs or log in and check their schedules. This is done with the help of the vast database that we have developed and some back-end linking of the website to the database. The database contains all relevant information about the members, trainers, exercises, equipment, subscription packs and merchandise. The website also gives information about the gym as well as displays the merchandise available for purchase there. Effectively, we are using this website as a means to motivate people to care more for their body and stay stronger for longer.

LIMITATIONS

We have tried to capture all relevant data in the database for future purposes. But, the amount of information at hand is never enough. We can try to add more fields and tables to gather all required data. We can further try to eliminate all redundant data and tables. As far as a website goes, we have tried to come up with a fully functional prototype. However, it can be improved by providing online purchasing of merchandise and other convenient adaptations.

ER DIAGRAM

GYM/FITNESS CLUB DATABASE MANAGEMENT SYSTEM

RELATIONAL MODEL

KIRAN'S GYM

Trainers

T_ID	T_Name	Email_ID	Sex	Join_Date	Experience
Salary					

Phone

Phone	Trainer_ID

Members

Mem_ID	Phone	M_Name	Start_Date	Sex	Pack_ID
Weight(kg)	Height(cm)	DOB	Email_ID	Trainer_ID	

Buy

Member_ID	Mer_ID

Subscriptions

Sub_ID	Price	Duration(months)	No_Subscribed

Consist

Pack_ID	Exercise_ID

Merchandise

Merch ID	Color	Price	Type	No_Sold	In_Stock

Conduct

Exercise_ID	Trainer_ID

Equipment

Eq ID	Quantity	Cost	Eq_Name

Use

Member_ID	Equipment_ID

Exercises

E ID	Ex_Name	Type	Time_slot	No_attending

Take Up

Memeber_ID	Exercise_ID

SQL CODE FOR CREATE TABLE

```
\c postgres
DROP DATABASE newgym;
CREATE DATABASE newgym;
\c newgym

CREATE TABLE Trainers(
        T_ID char(15) PRIMARY KEY,
        T_Name varchar(20) NOT NULL,
        Email_ID varchar NOT NULL UNIQUE,
        Sex CHAR,
        Join_Date date NOT NULL,
        Experience_in_Years int,
        Salary decimal(7,2)
);

CREATE TABLE Phone(
        Phone_no varchar(10) NOT NULL,
        Trainer_ID char(15) NOT NULL,
        PRIMARY KEY (Phone_no, Trainer_ID),
        FOREIGN KEY (Trainer_ID) REFERENCES Trainers(T_ID) on delete cascade
);

CREATE TABLE Subscriptions(
        Sub_ID char(15) PRIMARY KEY,
        Price int NOT NULL,
        Duration_in_Months int NOT NULL,
        No_Subscribed int
);

CREATE TABLE Members(
        Mem_ID char(15) PRIMARY KEY,
        Phone varchar(10) NOT NULL,
        M_Name varchar(20) NOT NULL,
        Start_Date date NOT NULL,
        Sex char,
        Weight_in_kg decimal(3,1),
        Height_in_cm decimal(4,1),
```

```
        Date_Of_Birth date NOT NULL,
        Email_ID varchar NOT NULL UNIQUE,
        Pack_ID char(15),
        End_Date date NOT NULL,
        Trainer_ID char(15),
        FOREIGN KEY (Pack_ID) REFERENCES Subscriptions (Sub_ID) on delete no
action,
        FOREIGN KEY (Trainer_ID) REFERENCES Trainers(T_ID) on delete set null
);


CREATE TABLE Merchandise(
        Merch_ID char(15) PRIMARY KEY,
        Color varchar(10) NOT NULL,
        Price int NOT NULL,
        Type varchar(10),
        No_Sold int,
        No_In_Stock int
);

CREATE TABLE Exercises(
        E_ID char(15) PRIMARY KEY,
        Ex_Name varchar(20) NOT NULL,
        Type varchar(15),
        Time_Slot time,
        No_Attending int
);

CREATE TABLE Equipments(
        Eq_ID char(15) PRIMARY KEY,
        Quantity int,
        Cost int,
        Eq_Name varchar(15) NOT NULL
);

CREATE TABLE Consist(
        Pack_ID char(15),
        Exercise_ID char(15),
        PRIMARY KEY (Pack_ID, Exercise_ID),
```

```sql
        FOREIGN KEY (Pack_ID) REFERENCES Subscriptions(Sub_ID) on delete cascade,
        FOREIGN KEY (Exercise_ID) REFERENCES Exercises (E_ID) on delete cascade
);

CREATE TABLE Buy(
        Member_ID char(15),
        Mer_ID char(15),
        PRIMARY KEY(Member_ID, Mer_ID),
        FOREIGN KEY (Member_ID) REFERENCES Members(Mem_ID) on delete
cascade, FOREIGN KEY (Mer_ID) REFERENCES Merchandise(Merch_ID) on delete
cascade );

CREATE TABLE Conduct(
        Exercise_ID char(15),
        Trainer_ID char(15),
        PRIMARY KEY(Exercise_ID, Trainer_ID),
        FOREIGN KEY (Exercise_ID) REFERENCES Exercises(E_ID) on delete cascade,
        FOREIGN KEY (Trainer_ID) REFERENCES Trainers(T_ID) on delete cascade
);

CREATE TABLE Use(
        Member_ID char(15),
        Equipment_ID char(15),
        PRIMARY KEY(Member_ID, Equipment_ID),
        FOREIGN KEY (Member_ID) REFERENCES Members (Mem_ID) on delete
cascade, FOREIGN KEY (Equipment_ID) REFERENCES Equipments (Eq_ID) on delete
cascade );


CREATE TABLE Takeup(
        Member_ID char(15),
        Exercise_ID char(15),
        PRIMARY KEY(Member_ID, Exercise_ID),
        FOREIGN KEY (Member_ID) REFERENCES Members (Mem_ID) on delete
cascade, FOREIGN KEY (Exercise_ID) REFERENCES Exercises(E_ID) on delete cascade
);

ALTER TABLE MEMBERS add check(phone between '6000000000' and '9999999999');
```

SQL CODE FOR INSERT TABLE

delete from Trainers;
delete from Phone;
delete from Subscriptions;
delete from Members;
delete from Merchandise;
delete from Exercises;
delete from Equipments;
delete from Consist;
delete from Buy;
delete from Conduct;
delete from Use;
delete from Takeup;

INSERT into Trainers values('T001', 'Rajesh Khanna', 'rajesh@kiransgym.com','M','12-08-2008',12,60000);
INSERT into Trainers values('T002', 'Ram Krishna', 'ram@kiransgym.com','M','21-10-2009',5,50000);
INSERT into Trainers values('T003', 'Sanjana Kumar', 'sanjana@kiransgym.com','F','2-01-2007',9,55000);
INSERT into Trainers values('T004','Nikhil Shetty','nikhil@kiransgym.com','M','3-03-2008',7,65000);
INSERT into Trainers values('T005','Ananya Kapoor','ananya@kiransgym.com','F','10-11-2010',6,45000);

INSERT into Phone values('9901231175', 'T001');
INSERT into Phone values('8193556722', 'T002');
INSERT into Phone values('9743566721', 'T003');
INSERT into Phone values('9900886745', 'T004');
INSERT into Phone values('7689455889', 'T005');

INSERT into Subscriptions values('SP02', 16000, 6, 71);
INSERT into Subscriptions values('SP01', 9000, 3, 87);
INSERT into Subscriptions values('SP05', 30000, 12, 42);
INSERT into Subscriptions values('SP04', 10100, 8, 53);
INSERT into Subscriptions values('SP03', 8900, 7, 35);

```sql
INSERT into Members values('M0012', '9987760552', 'Mythali Saxena', '3-06-2012', 'F', 63, 156, '15-05-1982', 'mythalisaxena15@gmail.com', 'SP03', '02-06-2013', 'T002');
INSERT into Members values('M0035', '9784567732', 'Navneet Singhania', '17-11-2015', 'M', 80.0, 170, '09-11-1988', 'navneet_singhania@gmail.com', 'SP01', '16-05-2016', 'T003');
INSERT into Members values('M0189', '8655745233', 'Rashmi Anand', '24-12-2018', 'F', 63, 159, '4-3-1991', 'rashmi43@gmail.com', 'SP02', '23-03-2019', 'T001');
INSERT into Members values('M0112', '9088781572', 'Robert Thapar', '3-03-2019', 'M', 86, 186, '15-05-1989', 'robertthapar@gmail.com', 'SP04','2-11-2020' , 'T002');
INSERT into Members values('M0352', '9824564532', 'Josh Khanna', '17-02-2019', 'M', 85.0, 176, '09-11-1987', 'joshkhanna@gmail.com', 'SP02','16-05-2019', 'T001');
INSERT into Members values('M0089', '8155766633', 'Seetha Ram', '24-01-2019', 'F', 69, 158, '4-3-1992', 'ramseetha@gmail.com', 'SP01', '23-07-2019','T003');

INSERT into Merchandise values('01RED', 'Red', 200, 'Headband', 50, 5);
INSERT into Merchandise values('01BLU', 'Blue', 200, 'Headband', 60, 45);
INSERT into Merchandise values('01GRE', 'Green', 200, 'Headband', 42, 63);
INSERT into Merchandise values('02RED', 'Red', 800, 'Tee', 98, 52);
INSERT into Merchandise values('02BLU', 'Blue', 800, 'Tee', 109, 4);
INSERT into Merchandise values('03GRE', 'Green', 900, 'Shorts', 46, 34);

INSERT into Exercises values('EX01', 'Aerobics', 'Endurance', '1:00:00', 58);
INSERT into Exercises values('EX02', 'S&C', 'Strength', '15:00:00', 36);
INSERT into Exercises values('EX03', 'HRX', 'High Intensity', '18:00:00', 44);
INSERT into Exercises values('EX04', 'Balance Training', 'Balance', '14:00:00', 34);
INSERT into Exercises values('EX05', 'Stretches', 'Flexibilty', '07:00:00', 36);

INSERT into Equipments values('EQ01', 10, 3250, 'Treadmill');
INSERT into Equipments values('EQ02', 8, 1050, 'Medicine Ball');
INSERT into Equipments values('EQ03', 16, 1700, 'Weights');
INSERT into Equipments values('EQ04', 19, 1350, 'Dumb Bells');
INSERT into Equipments values('EQ05', 7, 9000, 'Squat Rack');

INSERT into Consist values('SP01', 'EX01');
INSERT into Consist values('SP01', 'EX02');
INSERT into Consist values('SP02', 'EX01');
INSERT into Consist values('SP02', 'EX02');
INSERT into Consist values('SP02', 'EX04');
```

```sql
INSERT into Consist values('SP03', 'EX02');
INSERT into Consist values('SP05', 'EX04');
INSERT into Consist values('SP05', 'EX03');
INSERT into Consist values('SP05', 'EX02');
INSERT into Consist values('SP05', 'EX01');
INSERT into Consist values('SP04', 'EX05');
INSERT into Consist values('SP04', 'EX03');

INSERT into Buy values('M0012', '01BLU');
INSERT into Buy values('M0035', '02BLU');
INSERT into Buy values('M0189', '01RED');
INSERT into Buy values('M0352', '03GRE');
INSERT into Buy values('M0089', '02RED');

INSERT into Conduct values('EX01', 'T001');
INSERT into Conduct values('EX02', 'T003');
INSERT into Conduct values('EX03', 'T002');
INSERT into Conduct values('EX04', 'T005');
INSERT into Conduct values('EX05', 'T004');

INSERT into Use values('M0012', 'EQ02');
INSERT into Use values('M0189', 'EQ03');
INSERT into Use values('M0035', 'EQ01');
INSERT into Use values('M0352', 'EQ04');
INSERT into Use values('M0089', 'EQ05');

INSERT into Takeup values('M0012', 'EX02');
INSERT into Takeup values('M0189', 'EX03');
INSERT into Takeup values('M0035', 'EX01');
INSERT into Takeup values('M0352', 'EX05');
INSERT into Takeup values('M0089', 'EX04');

select * from Trainers;
select * from Subscriptions;
select * from members;
select * from Phone;
select * from Merchandise;
select * from Exercises;
select * from Equipments;
```

select * from Consist;
select * from conduct;
select * from Use;
select * from Buy;
select * from Takeup;

SIMPLE QUERIES

1) Write a query to display all members and their subscription packs that joined in 2019 and order them according to start date in descending order

select m_name,pack_id, start_date from members where start_date between '2019-01-01' and current_date order by start_date DESC;

2) Write a query to display the number of attendees for the next exercises from current time

select time_slot, no_attending from exercises where time_slot >= current_time;

3) To display the salary and experience of all trainers

select Salary, Experience_in_Years from Trainers;

4) To display the merchandise sold in descending order of number sold

select Type,Color,No_sold from Merchandise ORDER BY No_sold DESC;

5) To display the name of all exercises conducted by trainer 'Rajesh Khanna'

select Ex_Name from Exercises,Trainers where T_Name = 'Rajesh Khanna' and T_ID = Trainer_ID;

6) To change phone number for trainer with trainer ID 'T003' from 9788776655 to 9876543210

update Phone set Phone_no = '9876543210' where Trainer_ID = 'T003';
*select * from Phone;*

7) To add a new equipment 'Bouncy Ball' with quantity 15 and cost Rs. 1999

```
insert into Equipments values('EQ06',15,'1999','Bouncy Ball');
select * from Equipments;
```

8) To delete all instances/references of a trainer with trainer ID 'T003'

```
delete from trainers where t_id='T003';
select * from trainers;
```

9) To increase the stock values of all merchandise with in_stock values in 1 digit by 20

```
update Merchandise set No_In_Stock = No_In_Stock + 20 where
No_In_Stock<10;
select * from Merchandise;
```

10) To display the price is ascending order of all subscription packs with prices less than Rs. 10000

```
select Sub_id,Price from Subscriptions where Price<10000 ORDER BY Price ASC;
```

COMPLEX QUERIES

11) Query to display the details of the equipment that has the highest total price

```
select * from equipments where quantity*cost=(select max(quantity*cost) from
equipments);
```

12) Insert the records of premium members (i.e., members subscribed to a pack with price>15000) into a new table called premium_members

```
CREATE TABLE premium_members(
        Mem_ID char(15) PRIMARY KEY,
        M_Name varchar(20) NOT NULL
);
INSERT INTO premium_members (SELECT Mem_ID, M_Name FROM Members
WHERE Mem_id IN (SELECT Mem_id FROM Members, Subscriptions
        WHERE Pack_ID=Sub_ID and Price > 15000));
select * from premium_members;
```

13) Upgrade the subscription packs of the members subscribed to 10100 pack to 16000

> *UPDATE Members SET Pack_ID = 'SP01' WHERE Pack_ID IN (SELECT Pack_ID FROM Members WHERE Pack_ID = 'SP04');*
> *select * from Members;*

14) Find the Pack subscribed by all the members using the equipment 'Squat Rack'

> *select pack_id from members where mem_id = (select member_id from use where equipment_id = (select eq_id from equipments where eq_name = 'Squat Rack'));*

SC

15) Increase salary by 5% for all trainers training members with subscription pack SP02

> *update trainers set salary = salary + salary*0.05 where t_id = (select trainer_id from members where pack_id = 'SP04');*
> *select * from trainers;*

16) To find the names of all excercises that exist in pack 1

> *select ex_name, type, time_slot from exercises e, consist c where c.exercise_id = e.e_id and c.pack_id = 'SP01';*

17) If the exercise has more than 60 members then 10% off on pack price that has this exercise

> *update subscriptions set price = price - price*0.1 where sub_id = (select pack_id from consist, exercises where exercise_id = e_id and no_attending > 50);*
> *select * from subscriptions;*

18) Display details of members and the merchandise they have bought

> *select m.m_name, m.sex, mer.type, mer.color, mer.price from merchandise as mer, buy as b, members as m where mer.merch_id = b.mer_id and b.member_id = m.mem_id;*

19) Members whose names start with R can avail a free headband (that is most in stock)

> *insert into buy (select mem_id, merch_id from members, merchandise where m_name like 'R%' and type='Headband' and no_in_stock = (select max(no_in_stock) from merchandise));*
> *select * from buy;*

20) Trainers whose experience in years is greater than 8 what all exercises are they taking

> *select e.ex_name from exercises e, conduct c, trainers t where t.experience_in_years > 8 and t.t_id = c.trainer_id and c.exercise_id = e.e_id;*

OTHER QUERIES

21) Numbers of all members whose pack ends today, use like to extract fields

> *select * from members where end_date = current_date;*

22) Information about how many members have taken an exercise

> *select ex_name, no_attending from exercises;*
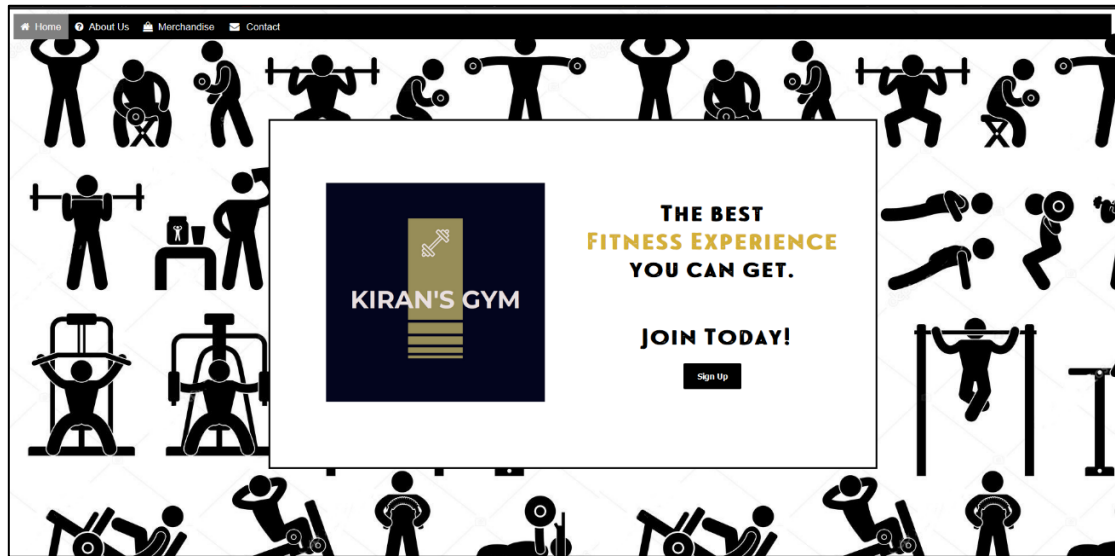
23) To find top 5 most used exercises

> *select ex_name, no_attending from exercises order by no_attending desc;*

24) To find top 5 most used equipments

> *select equipment_id, count(equipment_id) from use group by equipment_id order by count(equipment_id) desc;*

SCREENSHOTS OF THE WEBSITE

Congratulations!

You have successfully joined Kiran's Gym as a **MEMBER!**

Here are your details:

ID = M0654
PHONE = 9090909099
NAME = ABC
START DATE = 2019-04-25
GENDER = M
WEIGHT = 60.0 kg
HEIGHT = 160.0 cm
DATE OF BIRTH = 1998-05-04
EMAIL ID = thisismyemailid@gmail.com
PACK ID = SP05
END DATE = 2020-04-25
TRAINER ID = T003

Exercises chosen:

Name: Balance Training
Type: Balance
Scheduled at 14:00:00 hours

Name: HRX
Type: High Intensity
Scheduled at 18:00:00 hours

Name: S&C
Type: Strength
Scheduled at 15:00:00 hours

Name: Aerobics
Type: Endurance
Scheduled at 01:00:00 hours

ABOUT US

WHAT WE ARE

We are an organization that focusses on fitness, health and longevity. A group of hardworking and dedicated people who strive to make any person walking through the doors of Kiran's gym the fittest, healthiest and best version of themselves. Our motto:

Strive to be better than you are because you always can be.

WHAT WE DO

Mold people into the version of themselves they want to be. Make them strong, healthy and happy - ready to face the world and its challenges.

WHAT WE HAVE

Aerobics
Strength & Conditioning
HRX
Balance Training
Stretching

Mold people into the version of themselves they want to be. Make them strong, healthy and happy - ready to face the world and its challenges.

WHAT WE HAVE

Aerobics
Strength & Conditioning
HRX
Balance Training
Stretching

FIND US AT

📍

PES University, Outer Ring Rd,
Banashankari 3rd Stage,
Banashankari

688, Jeewan Griha Colony,
2nd Phase, JP Nagar

3rd Floor, Above Burger King,
11th Main Rd, 4th T Block East,
4th Block, Jayanagar

PACKS AVAILABLE

We offer **5** different packs for you to choose from! Click here to know more!

SUBSCRIPTION PACKS

PACK 1

Exercises: Aerobics, S&C

Duration: 3 Months

Price: 9000/-

PACK 2

Exercises: Aerobics, S&C, Balance Training

Duration: 6 Months

Price: 16000/-

PACK 3

Exercises: S&C

Duration: 7 Months

Price: 8900/-

PACK 4

Exercises: Stretches, HRX

Duration: 8 Months

Price: 10100/-

PACK 5

Exercises: S&C, Balance Training, Aerobics, HRX

Duration: 12 Months

Price: 8900/-

MERCHANDISE

Yes! That's right! The following merchandise is available in all of our centres! Avail Now!

Available in:

1. Red
2. Blue
3. Black
4. Green

Available in:

1. Red
2. Blue
3. Black
4. Grey
5. Green

Available in:

1. Black
2. Blue
3. Grey

Available in:

1. Blue
2. Green
3. Red
4. Black

SIGN UP - TRAINERS

CONTACT DETAILS:

Name: Trainer123

Phone: 9090909099

Email: iwanttobeatrainer@gmail.com

ABOUT ME:

Experience (In Years): 5

Join Date: 25 / 05 / 2019

Gender: ○ M ● F

Requests/Comments:

☑ I agree to Kiran's Gym Terms & Conditions

Submit

Congratulations!

You have successfully joined Kiran's Gym as a **TRAINER!**

You will automatically be logged off when you close this window.

OK

ID = T073
NAME = Trainer123
EMAIL = iwanttobeatrainer@gmail.com
GENDER = F
START DATE = 2019-05-25
EXPERIENCE = 5 years
SALARY = 25000.00 Rs/Month

🏠 Home   ❓ About Us   👜 Merchandise   ✉ Contact

Congratulations!

You have successfully joined Kiran's Gym as a **TRAINER!**

Here are your details:

ID = T073
NAME = Trainer123
EMAIL = iwanttobeatrainer@gmail.com
GENDER = F
START DATE = 2019-05-25
EXPERIENCE = 5 years
SALARY = 25000.00 Rs/Month

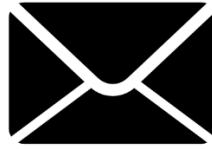**To start, you will be conducting the following exercise:** Aerobics

Further briefing will be given shortly.

Contact Us

Call Us

+91 80 77954366

Email Us

help@kiransgym.com