# DBMS - MINI PROJECT

## Fitness Management System

Submitted By:

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V Semester Section C

## ABSTRACT

Fitness is an important part of the life, and the Fitness management system helps the user maintain the fitness and good health with the structured information on healthy diet and exercise routine.

The user can subscribe to membership which gives the access to personal trainer. The personal trainer can assign the routine and diet plan; when user follows the assigned routine, he will be awarded with streaks and level ups.

The streaks and levels helps the user to keep the motivation and work towards better health.

With the help of this tool user can get access to personalized diet plan and workout plan. Daily workout logs will be stored by the database which can further be used to do some analytics to obatin useful insights

The project servers as a platform for the user to get certified directions in the fitness journey and serve as tracker for maintaing the fitness and health.

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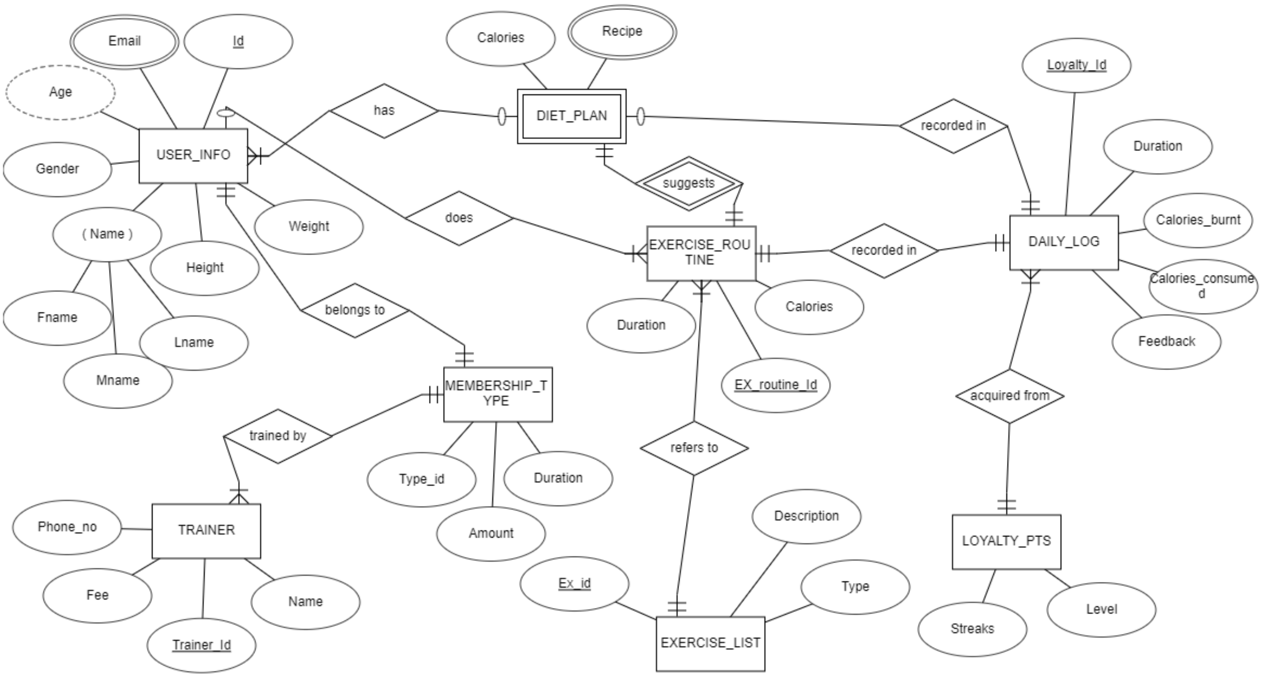
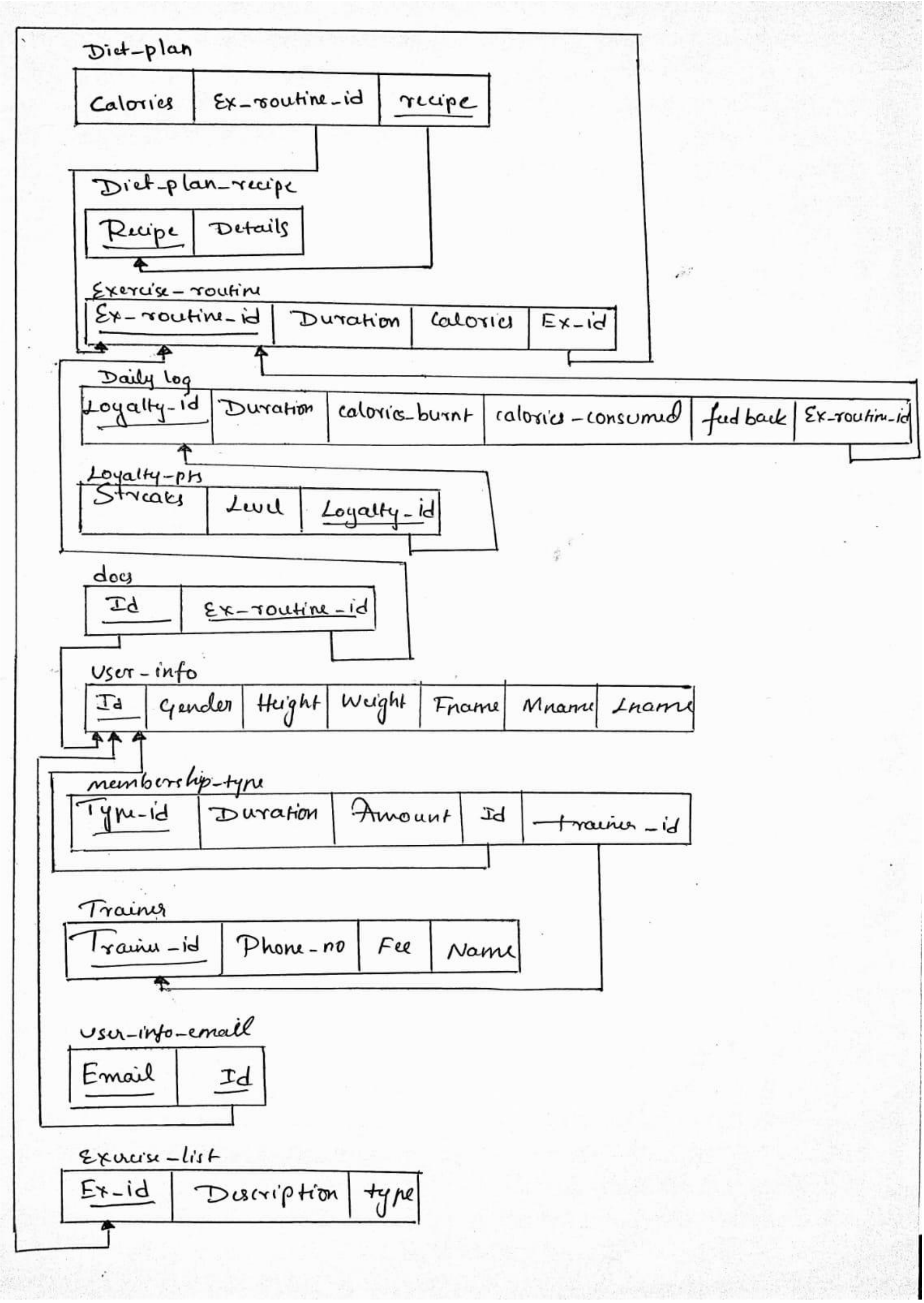
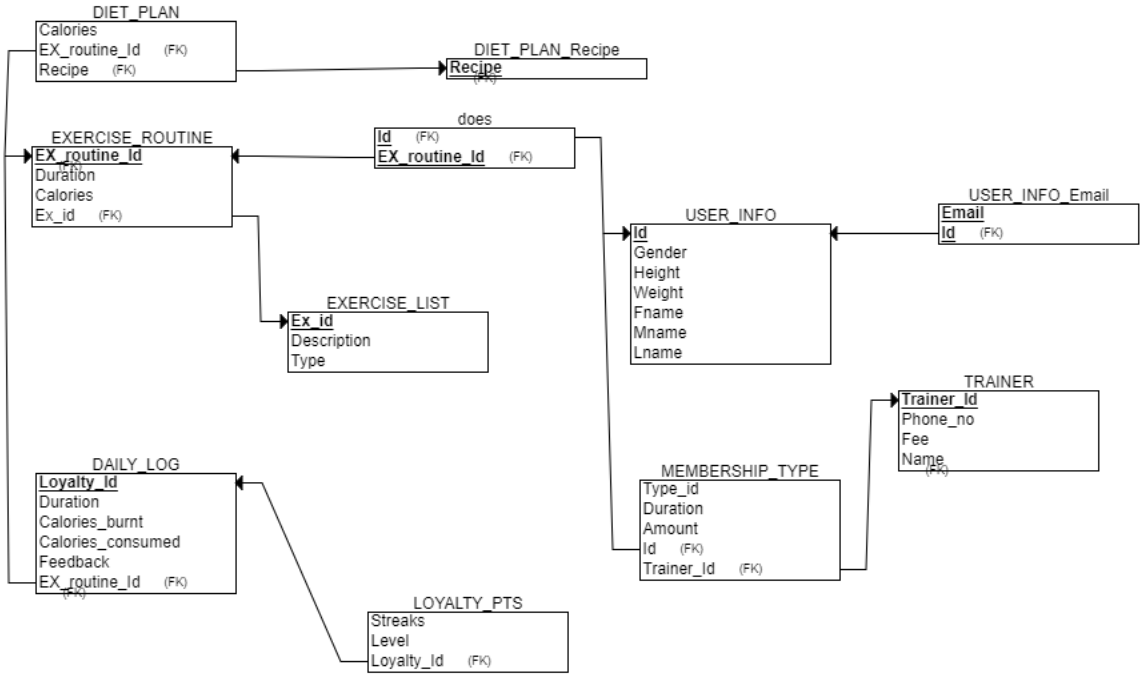
## ER Diagram



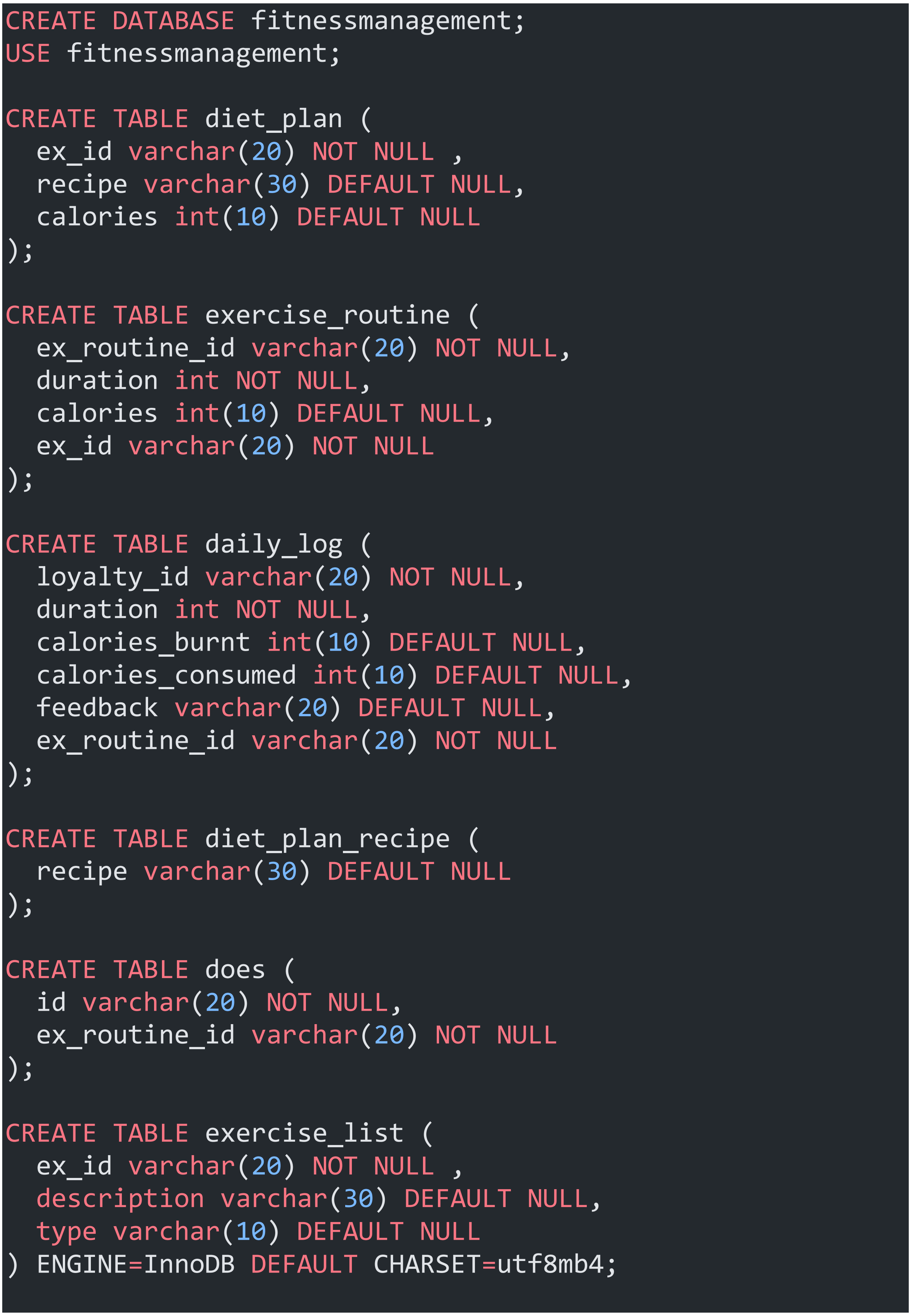
The ER diagram shows the 8 entities and their interrelations. Each entity has different kind of attributes defining the charecteristics of the entity.

## Relational Schema

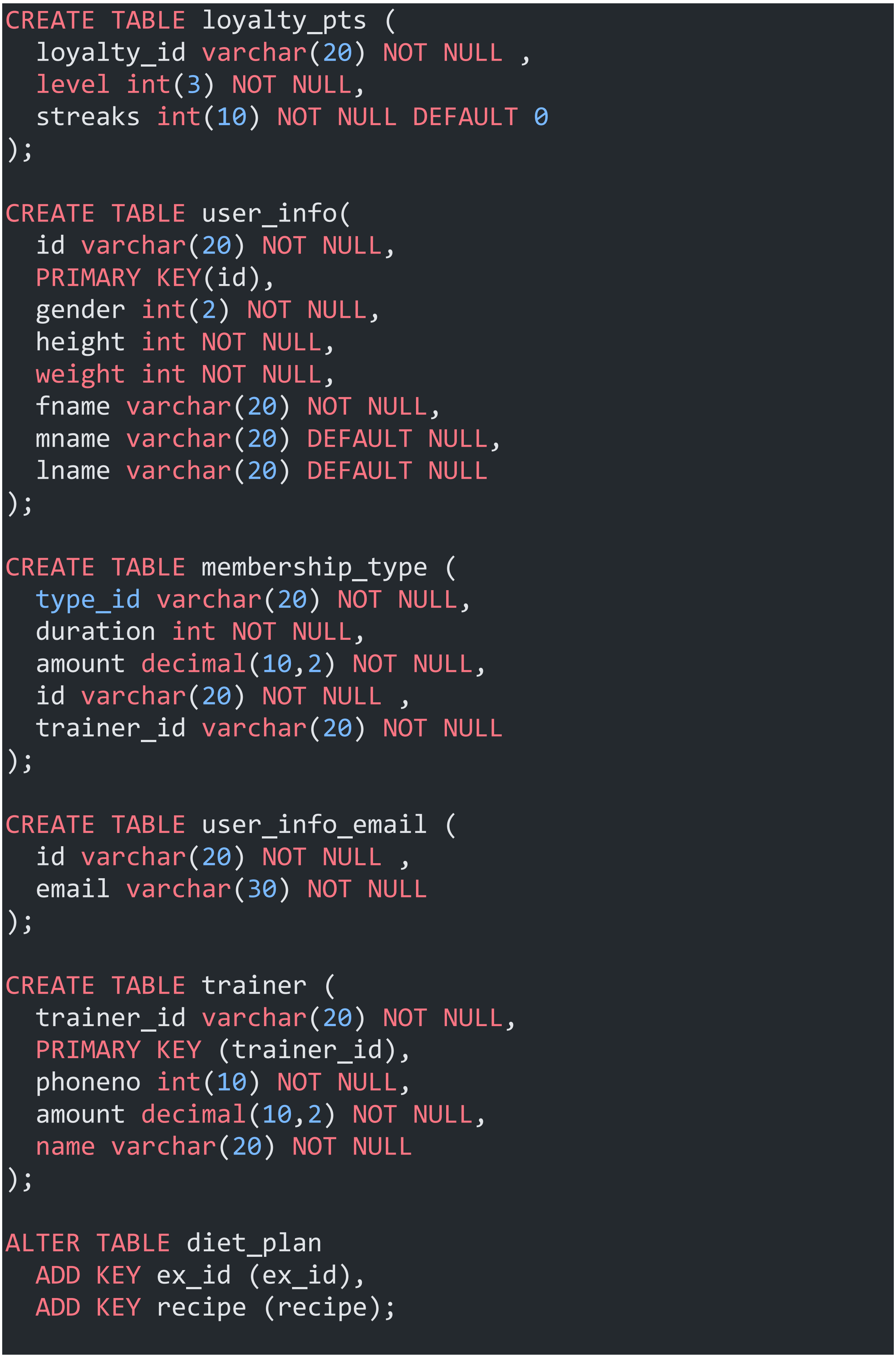



DIET_PLAN
Calories
EX_routine_Id (FK)
Recipe (FK)
DIET_PLAN_Recipe
Recipe
(FK)
does
Id (FK)
EX_routine_Id (FK)
EXERCISE_ROUTINE
EX_routine_Id
(FK)
Duration
Calories
Ex_id (FK)
USER_INFO_Email
Email
Id (FK)
USER_INFO
Id
Gender
Height
Weight
Fname
Mname
Lname
EXERCISE_LIST
Ex_id
Description
Type
TRAINER
Trainer_Id
Phone_no
Fee
Name
(FK)
DAILY_LOG
Loyalty_Id
Duration
Calories_burnt
Calories_consumed
Feedback
EX_routine_Id (FK)
(FK)
MEMBERSHIP_TYPE
Type_id
Duration
Amount
Id (FK)
Trainer_Id (FK)
LOYALTY_PTS
Streaks
Level
Loyalty_Id (FK)

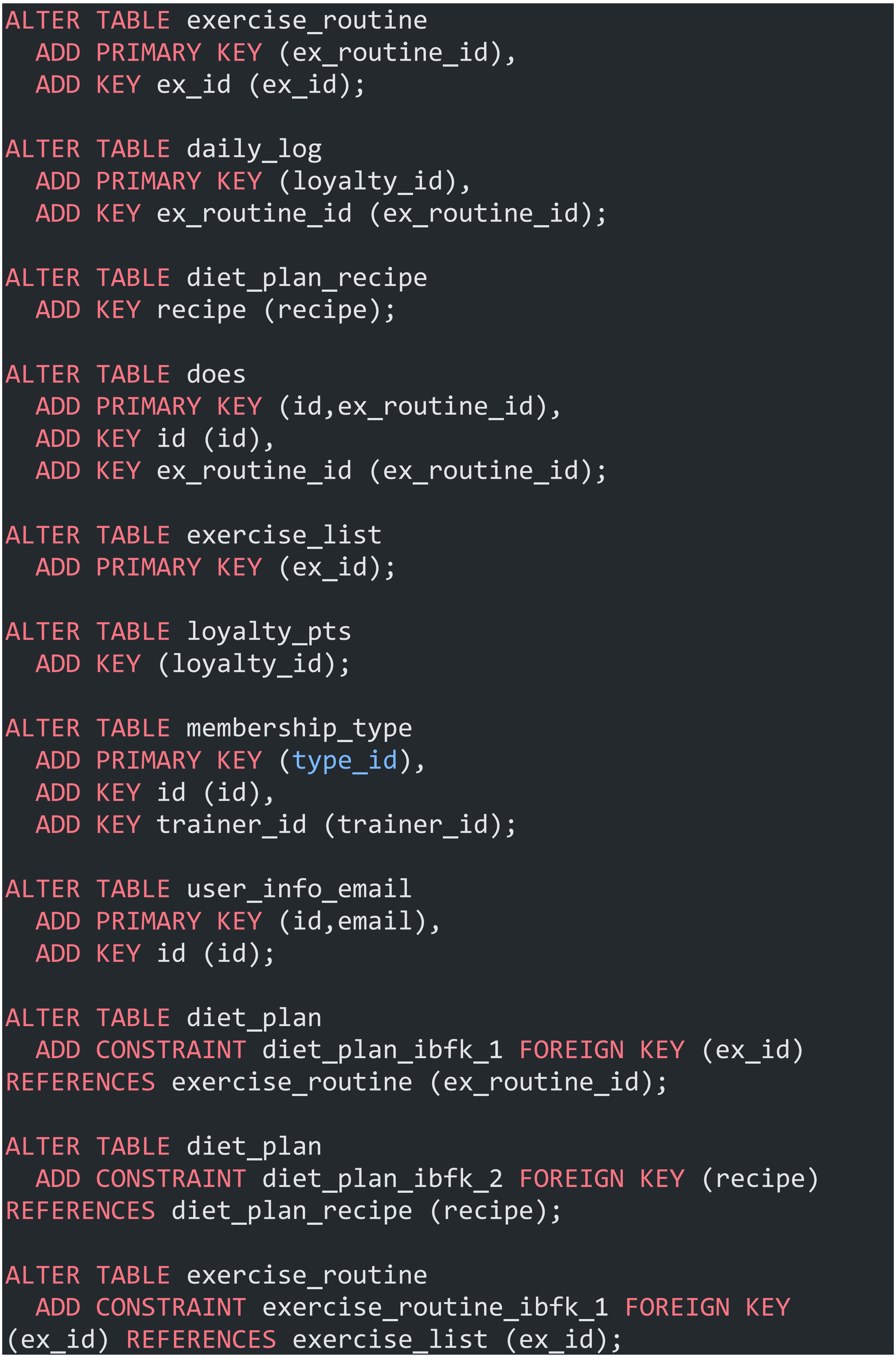
## DDL statements - Building the database



```
CREATE DATABASE fitnessmanagement;
USE fitnessmanagement;

CREATE TABLE diet_plan (
  ex_id varchar(20) NOT NULL ,
  recipe varchar(30) DEFAULT NULL,
  calories int(10) DEFAULT NULL
);

CREATE TABLE exercise_routine (
  ex_routine_id varchar(20) NOT NULL,
  duration int NOT NULL,
  calories int(10) DEFAULT NULL,
  ex_id varchar(20) NOT NULL
);

CREATE TABLE daily_log (
  loyalty_id varchar(20) NOT NULL,
  duration int NOT NULL,
  calories_burnt int(10) DEFAULT NULL,
  calories_consumed int(10) DEFAULT NULL,
  feedback varchar(20) DEFAULT NULL,
  ex_routine_id varchar(20) NOT NULL
);

CREATE TABLE diet_plan_recipe (
  recipe varchar(30) DEFAULT NULL
);

CREATE TABLE does (
  id varchar(20) NOT NULL,
  ex_routine_id varchar(20) NOT NULL
);

CREATE TABLE exercise_list (
  ex_id varchar(20) NOT NULL ,
  description varchar(30) DEFAULT NULL,
  type varchar(10) DEFAULT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```



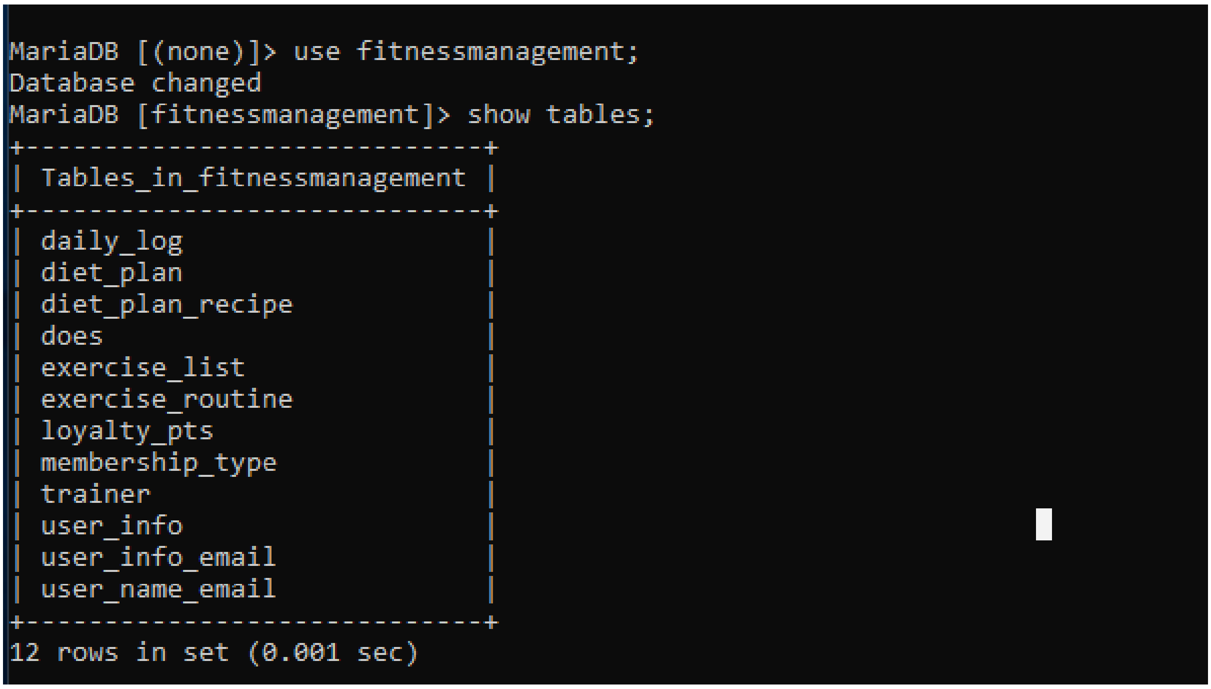
```
CREATE TABLE loyalty_pts (
  loyalty_id varchar(20) NOT NULL ,
  level int(3) NOT NULL,
  streaks int(10) NOT NULL DEFAULT 0
);

CREATE TABLE user_info(
  id varchar(20) NOT NULL,
  PRIMARY KEY(id),
  gender int(2) NOT NULL,
  height int NOT NULL,
  weight int NOT NULL,
  fname varchar(20) NOT NULL,
  mname varchar(20) DEFAULT NULL,
  lname varchar(20) DEFAULT NULL
);

CREATE TABLE membership_type (
  type_id varchar(20) NOT NULL,
  duration int NOT NULL,
  amount decimal(10,2) NOT NULL,
  id varchar(20) NOT NULL ,
  trainer_id varchar(20) NOT NULL
);

CREATE TABLE user_info_email (
  id varchar(20) NOT NULL ,
  email varchar(30) NOT NULL
);

CREATE TABLE trainer (
  trainer_id varchar(20) NOT NULL,
  PRIMARY KEY (trainer_id),
  phoneno int(10) NOT NULL,
  amount decimal(10,2) NOT NULL,
  name varchar(20) NOT NULL
);

ALTER TABLE diet_plan
  ADD KEY ex_id (ex_id),
  ADD KEY recipe (recipe);
```



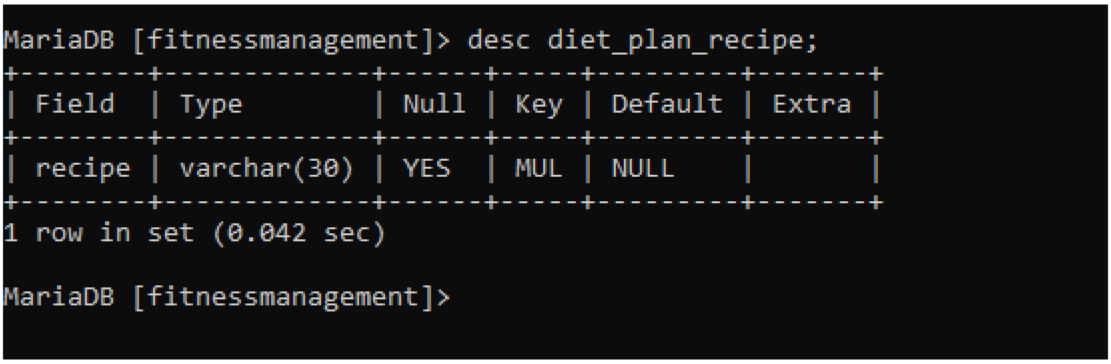
```
ALTER TABLE exercise_routine
  ADD PRIMARY KEY (ex_routine_id),
  ADD KEY ex_id (ex_id);

ALTER TABLE daily_log
  ADD PRIMARY KEY (loyalty_id),
  ADD KEY ex_routine_id (ex_routine_id);

ALTER TABLE diet_plan_recipe
  ADD KEY recipe (recipe);

ALTER TABLE does
  ADD PRIMARY KEY (id,ex_routine_id),
  ADD KEY id (id),
  ADD KEY ex_routine_id (ex_routine_id);

ALTER TABLE exercise_list
  ADD PRIMARY KEY (ex_id);

ALTER TABLE loyalty_pts
  ADD KEY (loyalty_id);

ALTER TABLE membership_type
  ADD PRIMARY KEY (type_id),
  ADD KEY id (id),
  ADD KEY trainer_id (trainer_id);

ALTER TABLE user_info_email
  ADD PRIMARY KEY (id,email),
  ADD KEY id (id);

ALTER TABLE diet_plan
  ADD CONSTRAINT diet_plan_ibfk_1 FOREIGN KEY (ex_id)
REFERENCES exercise_routine (ex_routine_id);

ALTER TABLE diet_plan
  ADD CONSTRAINT diet_plan_ibfk_2 FOREIGN KEY (recipe)
REFERENCES diet_plan_recipe (recipe);

ALTER TABLE exercise_routine
  ADD CONSTRAINT exercise_routine_ibfk_1 FOREIGN KEY
(ex_id) REFERENCES exercise_list (ex_id);
```

```
ALTER TABLE does
  ADD CONSTRAINT does_ibfk_1 FOREIGN KEY (ex_routine_id)
REFERENCES exercise_routine (ex_routine_id);

ALTER TABLE daily_log
  ADD CONSTRAINT daily_log_ibfk_1 FOREIGN KEY
(ex_routine_id) REFERENCES exercise_routine
(ex_routine_id);

ALTER TABLE loyalty_pts
  ADD CONSTRAINT loyalty_pts_ibfk_1 FOREIGN KEY
(loyalty_id) REFERENCES daily_log (loyalty_id);

ALTER TABLE does
  ADD CONSTRAINT does_ibfk_2 FOREIGN KEY (id) REFERENCES
user_info (id);

ALTER TABLE user_info_email
  ADD CONSTRAINT user_info_email_ibfk_1 FOREIGN KEY (id)
REFERENCES user_info (id);

ALTER TABLE membership_type
  ADD CONSTRAINT membership_type_ibfk_1 FOREIGN KEY (id)
REFERENCES user_info (id);

ALTER TABLE membership_type
  ADD CONSTRAINT membership_type_ibfk_2 FOREIGN KEY
(trainer_id) REFERENCES trainer (trainer_id);
```

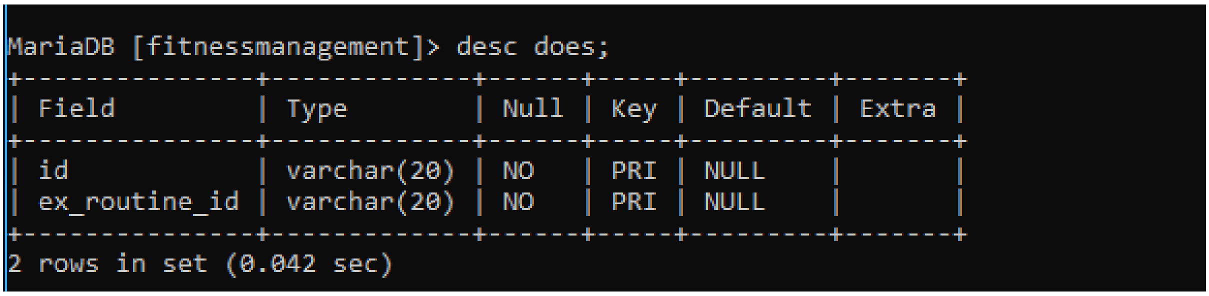
The table list and their description after the execution of DDL commands.



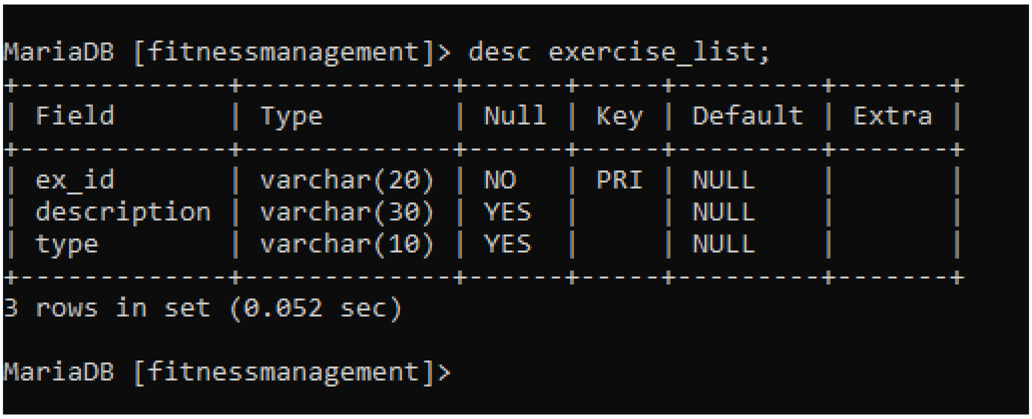
```
MariaDB [(none)]> use fitnessmanagement;
Database changed
MariaDB [fitnessmanagement]> show tables;
+-----------------------------+
| Tables_in_fitnessmanagement |
+-----------------------------+
| daily_log                   |
| diet_plan                   |
| diet_plan_recipe            |
| does                        |
| exercise_list               |
| exercise_routine            |
| loyalty_pts                 |
| membership_type             |
| trainer                     |
| user_info                   |
| user_info_email             |
| user_name_email             |
+-----------------------------+
12 rows in set (0.001 sec)
```



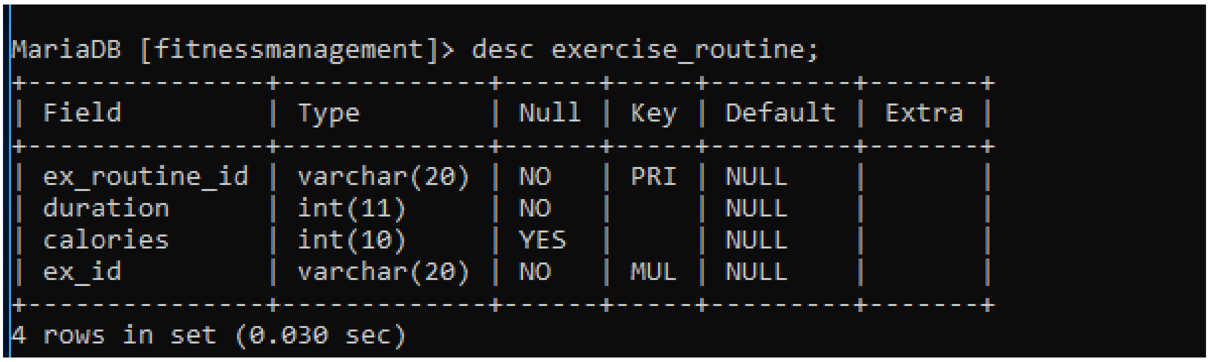
```
MariaDB [fitnessmanagement]> desc diet_plan_recipe;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| recipe | varchar(30) | YES  | MUL | NULL    |       |
+--------+-------------+------+-----+---------+-------+
1 row in set (0.042 sec)

MariaDB [fitnessmanagement]>
```



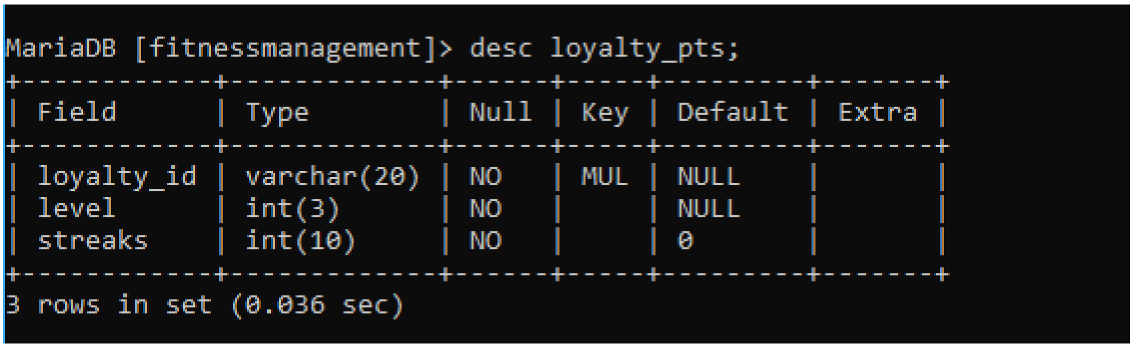
```
MariaDB [fitnessmanagement]> desc does;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| id            | varchar(20) | NO   | PRI | NULL    |       |
| ex_routine_id | varchar(20) | NO   | PRI | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
2 rows in set (0.042 sec)
```



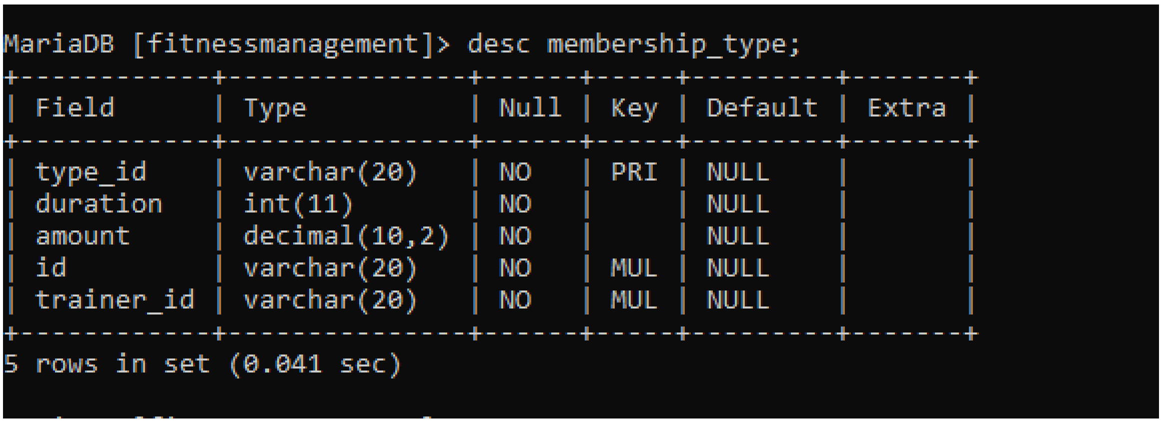
```
MariaDB [fitnessmanagement]> desc exercise_list;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| ex_id       | varchar(20) | NO   | PRI | NULL    |       |
| description | varchar(30) | YES  |     | NULL    |       |
| type        | varchar(10) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
3 rows in set (0.052 sec)

MariaDB [fitnessmanagement]>
```



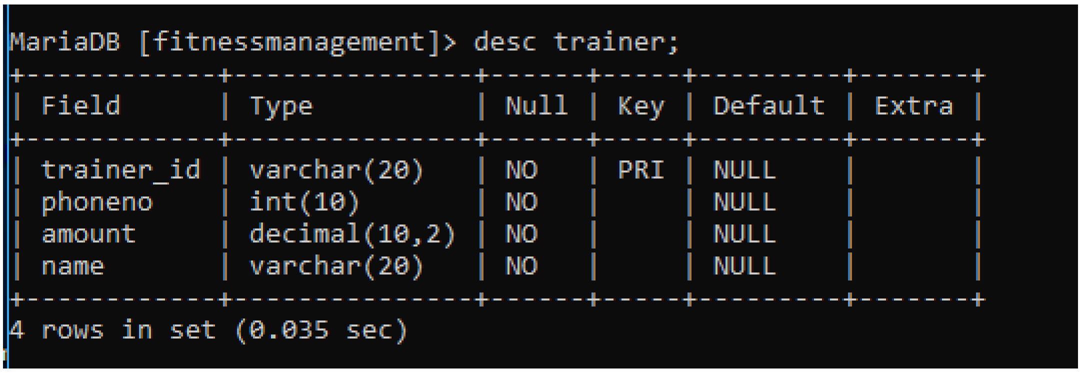
```
MariaDB [fitnessmanagement]> desc exercise_routine;
+----------------+-------------+------+-----+---------+-------+
| Field          | Type        | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+-------+
| ex_routine_id  | varchar(20) | NO   | PRI | NULL    |       |
| duration       | int(11)     | NO   |     | NULL    |       |
| calories       | int(10)     | YES  |     | NULL    |       |
| ex_id          | varchar(20) | NO   | MUL | NULL    |       |
+----------------+-------------+------+-----+---------+-------+
4 rows in set (0.030 sec)
```



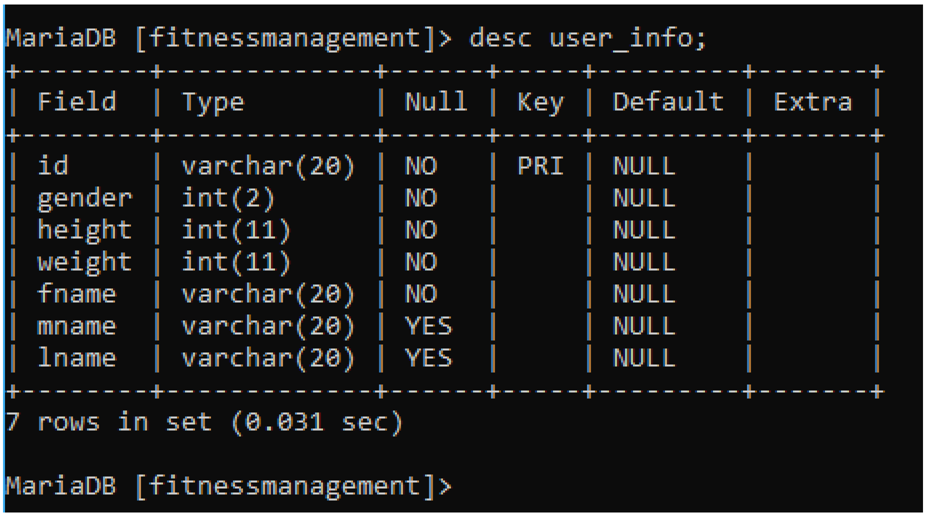
```
MariaDB [fitnessmanagement]> desc loyalty_pts;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| loyalty_id | varchar(20) | NO   | MUL | NULL    |       |
| level      | int(3)      | NO   |     | NULL    |       |
| streaks    | int(10)     | NO   |     | 0       |       |
+------------+-------------+------+-----+---------+-------+
3 rows in set (0.036 sec)
```



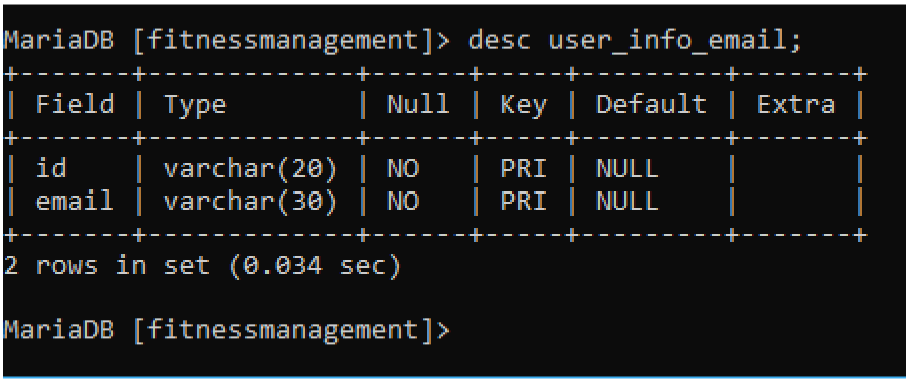
```
MariaDB [fitnessmanagement]> desc membership_type;
+------------+---------------+------+-----+---------+-------+
| Field      | Type          | Null | Key | Default | Extra |
+------------+---------------+------+-----+---------+-------+
| type_id    | varchar(20)   | NO   | PRI | NULL    |       |
| duration   | int(11)       | NO   |     | NULL    |       |
| amount     | decimal(10,2) | NO   |     | NULL    |       |
| id         | varchar(20)   | NO   | MUL | NULL    |       |
| trainer_id | varchar(20)   | NO   | MUL | NULL    |       |
+------------+---------------+------+-----+---------+-------+
5 rows in set (0.041 sec)
```



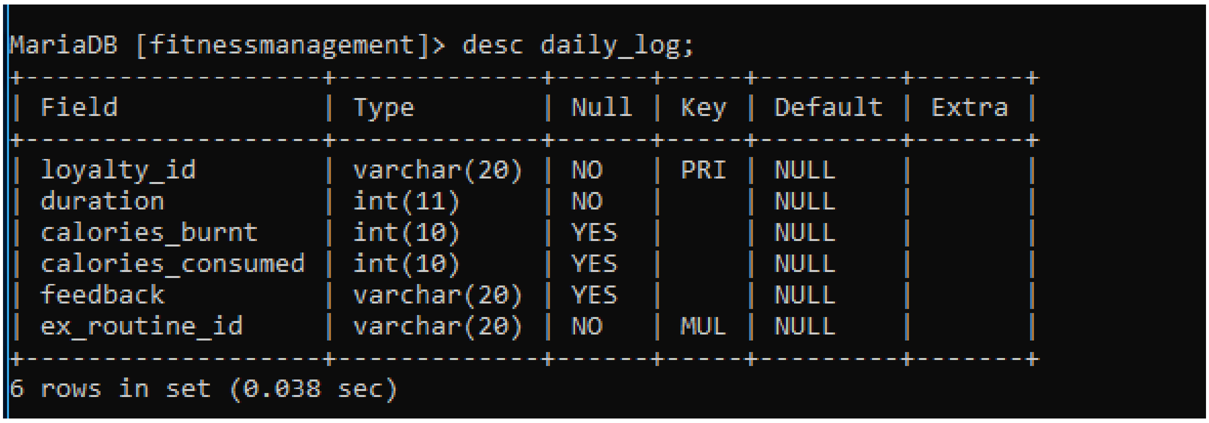
```
MariaDB [fitnessmanagement]> desc trainer;
+------------+---------------+------+-----+---------+-------+
| Field      | Type          | Null | Key | Default | Extra |
+------------+---------------+------+-----+---------+-------+
| trainer_id | varchar(20)   | NO   | PRI | NULL    |       |
| phoneno    | int(10)       | NO   |     | NULL    |       |
| amount     | decimal(10,2) | NO   |     | NULL    |       |
| name       | varchar(20)   | NO   |     | NULL    |       |
+------------+---------------+------+-----+---------+-------+
4 rows in set (0.035 sec)
```



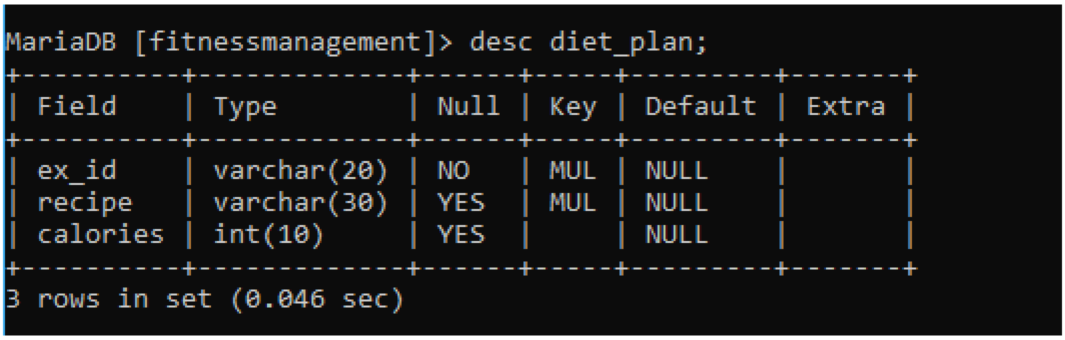
```
MariaDB [fitnessmanagement]> desc user_info;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| id     | varchar(20) | NO   | PRI | NULL    |       |
| gender | int(2)      | NO   |     | NULL    |       |
| height | int(11)     | NO   |     | NULL    |       |
| weight | int(11)     | NO   |     | NULL    |       |
| fname  | varchar(20) | NO   |     | NULL    |       |
| mname  | varchar(20) | YES  |     | NULL    |       |
| lname  | varchar(20) | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
7 rows in set (0.031 sec)

MariaDB [fitnessmanagement]>
```



```
MariaDB [fitnessmanagement]> desc user_info_email;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| id    | varchar(20) | NO   | PRI | NULL    |       |
| email | varchar(30) | NO   | PRI | NULL    |       |
+-------+-------------+------+-----+---------+-------+
2 rows in set (0.034 sec)

MariaDB [fitnessmanagement]>
```



```
MariaDB [fitnessmanagement]> desc daily_log;
+-------------------+-------------+------+-----+---------+-------+
| Field             | Type        | Null | Key | Default | Extra |
+-------------------+-------------+------+-----+---------+-------+
| loyalty_id        | varchar(20) | NO   | PRI | NULL    |       |
| duration          | int(11)     | NO   |     | NULL    |       |
| calories_burnt    | int(10)     | YES  |     | NULL    |       |
| calories_consumed | int(10)     | YES  |     | NULL    |       |
| feedback          | varchar(20) | YES  |     | NULL    |       |
| ex_routine_id     | varchar(20) | NO   | MUL | NULL    |       |
+-------------------+-------------+------+-----+---------+-------+
6 rows in set (0.038 sec)
```



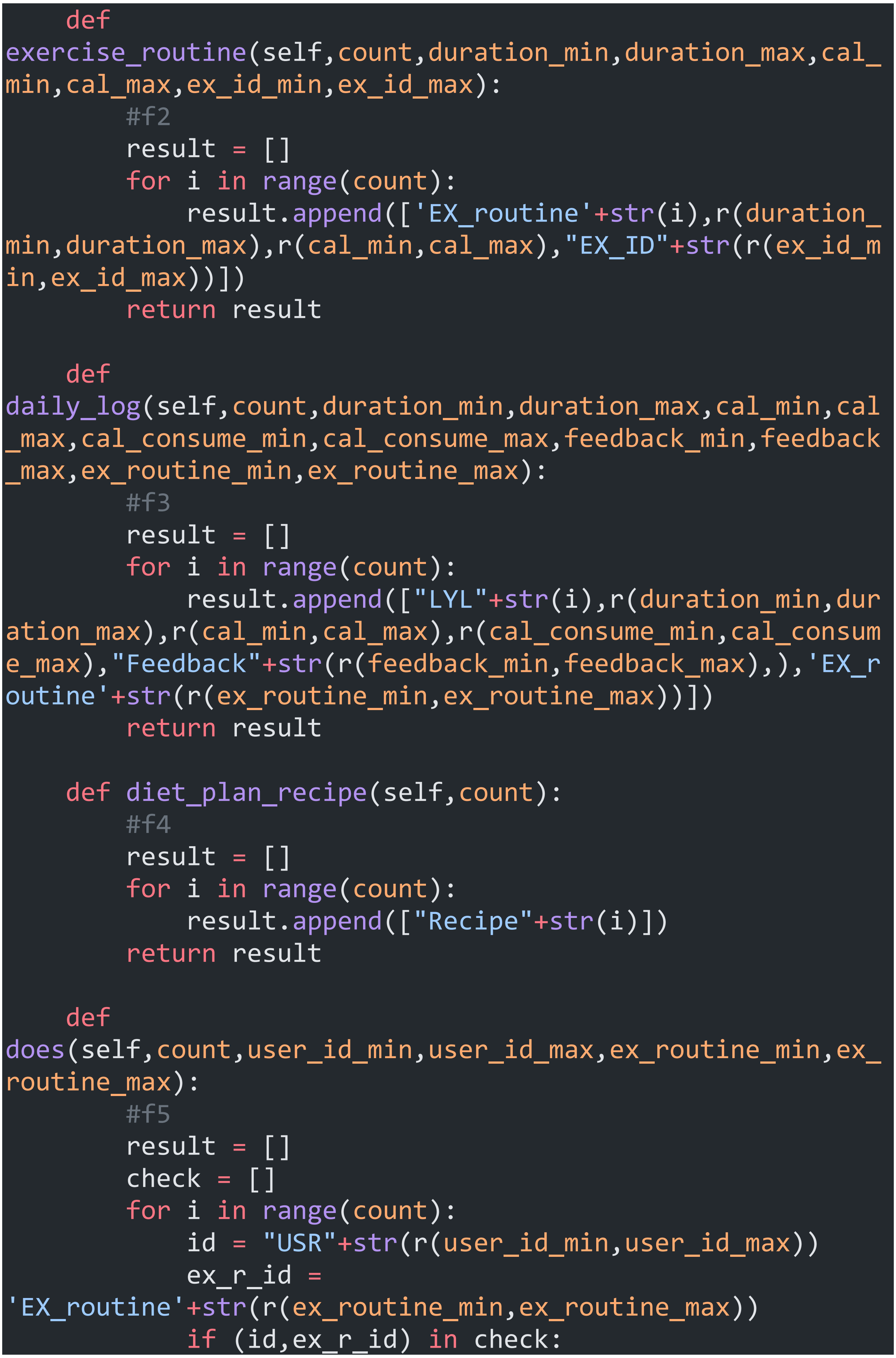
```
MariaDB [fitnessmanagement]> desc diet_plan;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| ex_id    | varchar(20) | NO   | MUL | NULL    |       |
| recipe   | varchar(30) | YES  | MUL | NULL    |       |
| calories | int(10)     | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
3 rows in set (0.046 sec)
```

### Populating the Database

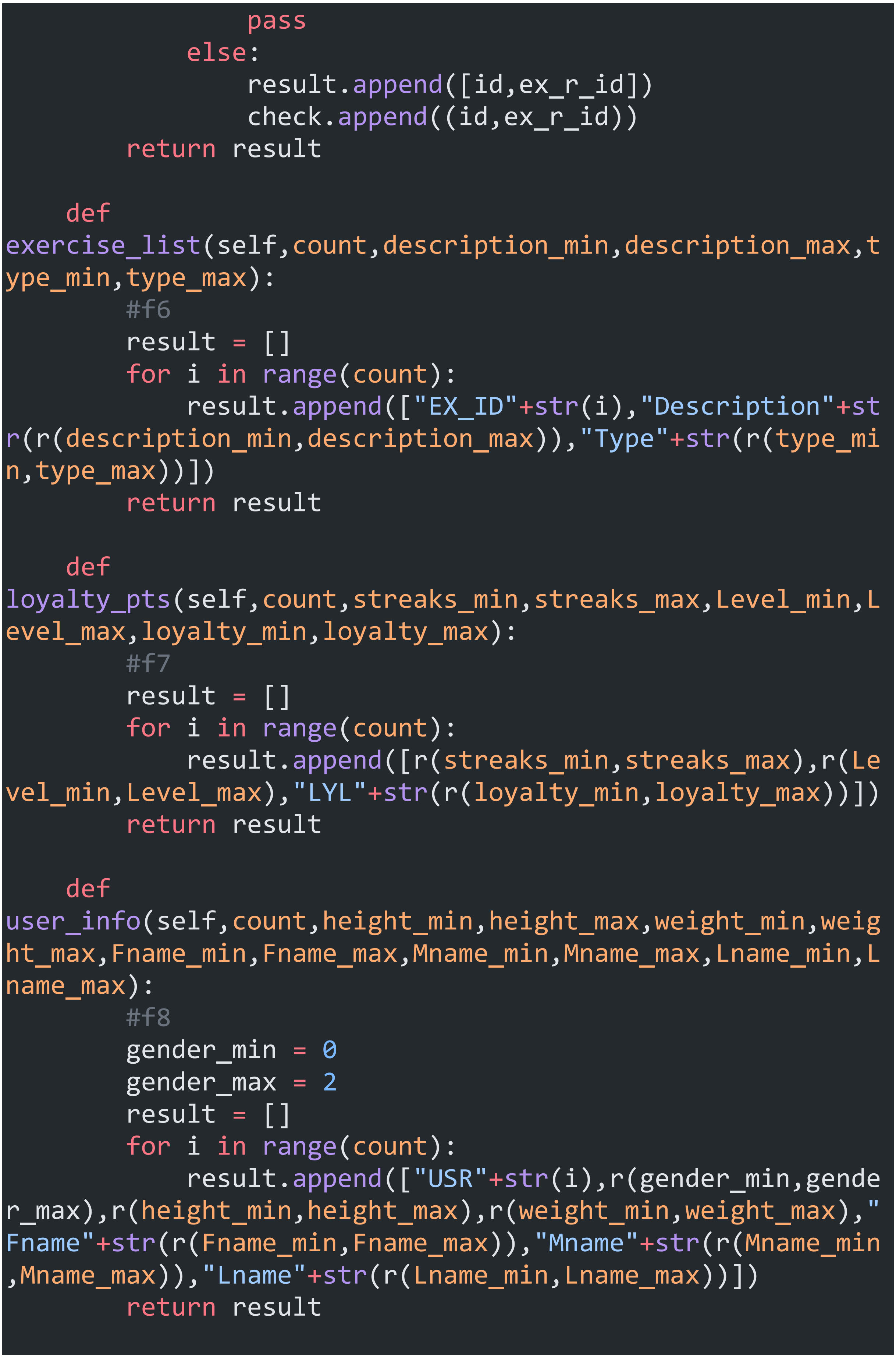
The population of data is done by the below python code which exports CSV files with data for all the tables.

These CSV files are imported into tables using phpmyadmin.

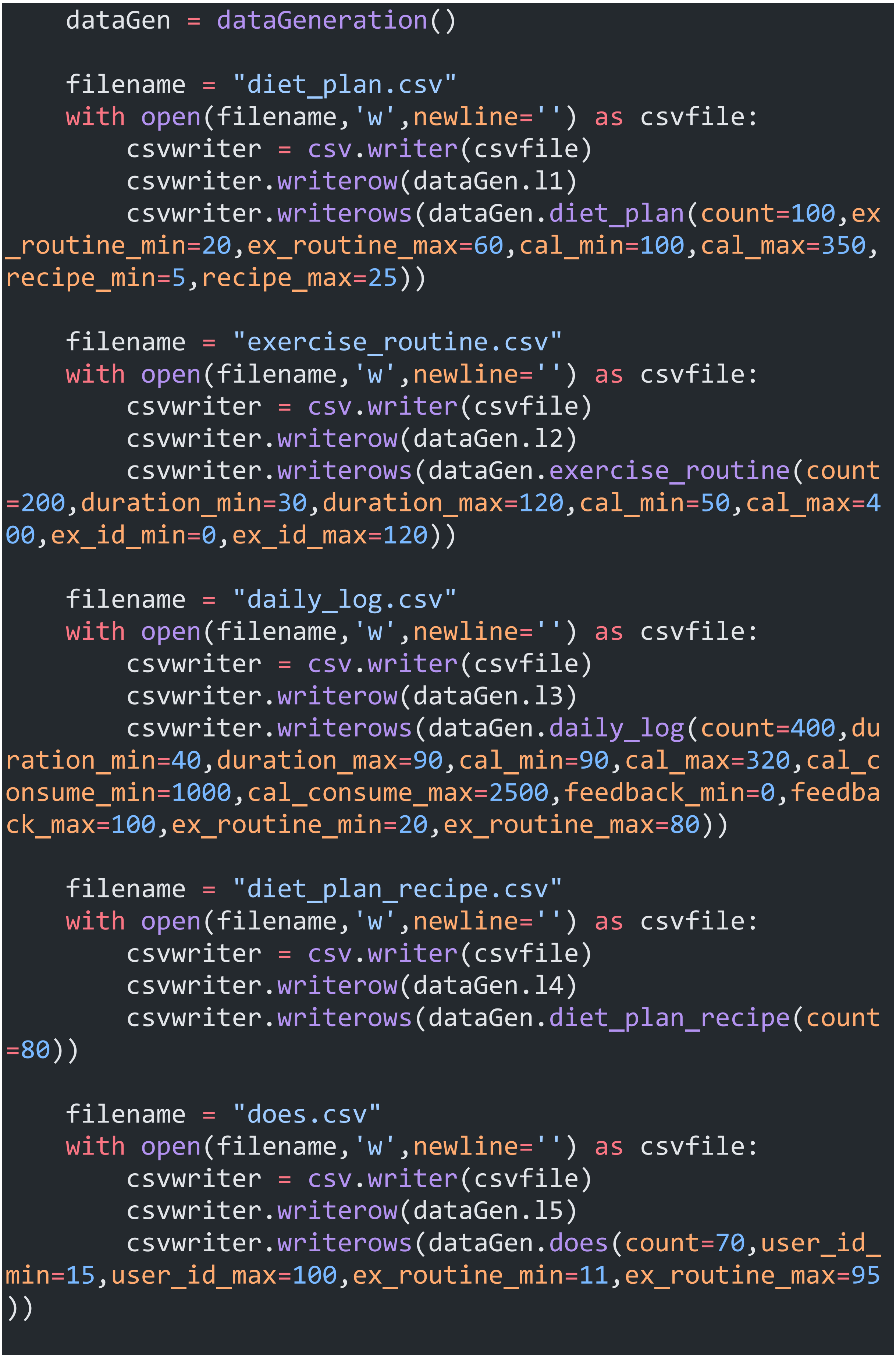
```
import csv
from random import randint as r

class dataGeneration:
    def __init__(self):
        self.l1 = ['Calories','EX_Id',"Recipe"]
        self.l2 =
["Ex_routine_Id",'Duration',"Calories","Ex_id"]
        self.l3 =
['Loyalty_Id',"Duration","Calories_burnt","Calories_consum
ed","Feedback","Ex_routine_Id"]
        self.l4 = ["Recipe"]
        self.l5 = ["Id","Ex_routine_Id"]
        self.l6 = ["Ex_id","Description","Type"]
        self.l7 = ["Streaks","Level" , "Loyalty_Id"]
        self.l8 =
["Id","Gender","Height","Weight","Fname","Mname","Lname"]
        self.l9 =
["Type_id","Duration","Amount","Id","Trainer_Id"]
        self.l10 = ["Email","Id"]
        self.l11 =
["Trainer_Id","Phoneno","amount","Name"]

    def
diet_plan(self,count,ex_routine_min,ex_routine_max,cal_min
,cal_max,recipe_min,recipe_max):
        #f1
        result = []
        for i in range(count):
            result.append([r(cal_min,cal_max),'EX_routine'
+str(r(ex_routine_min,ex_routine_max)),"Recipe"+str(r(reci
pe_min,recipe_max))])
        return result
```



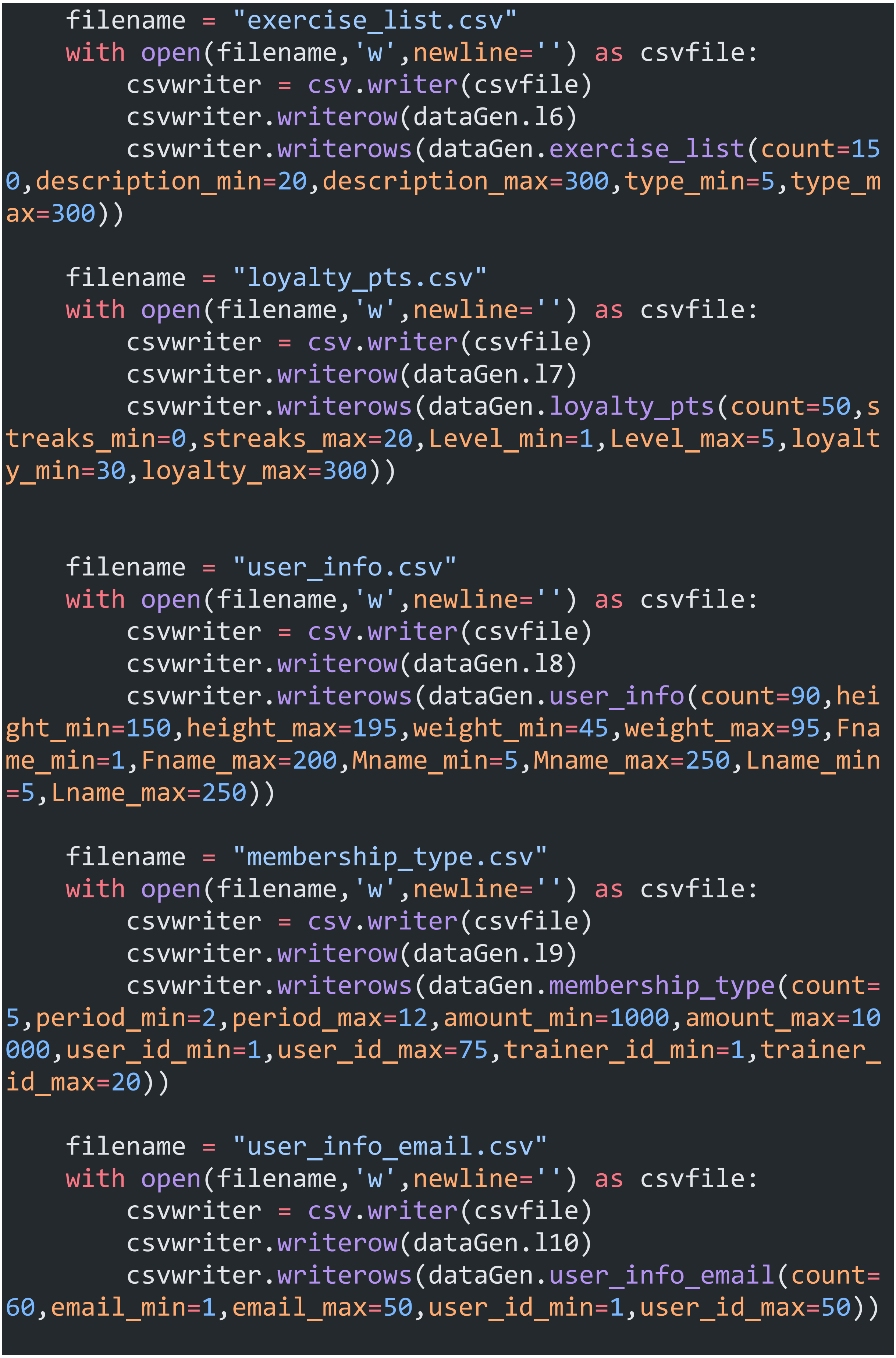
```
    def
exercise_routine(self,count,duration_min,duration_max,cal_
min,cal_max,ex_id_min,ex_id_max):
        #f2
        result = []
        for i in range(count):
            result.append(['EX_routine'+str(i),r(duration_
min,duration_max),r(cal_min,cal_max),"EX_ID"+str(r(ex_id_m
in,ex_id_max))])
        return result

    def
daily_log(self,count,duration_min,duration_max,cal_min,cal
_max,cal_consume_min,cal_consume_max,feedback_min,feedback
_max,ex_routine_min,ex_routine_max):
        #f3
        result = []
        for i in range(count):
            result.append(["LYL"+str(i),r(duration_min,dur
ation_max),r(cal_min,cal_max),r(cal_consume_min,cal_consum
e_max),"Feedback"+str(r(feedback_min,feedback_max),),'EX_r
outine'+str(r(ex_routine_min,ex_routine_max))])
        return result

    def diet_plan_recipe(self,count):
        #f4
        result = []
        for i in range(count):
            result.append(["Recipe"+str(i)])
        return result

    def
does(self,count,user_id_min,user_id_max,ex_routine_min,ex_
routine_max):
        #f5
        result = []
        check = []
        for i in range(count):
            id = "USR"+str(r(user_id_min,user_id_max))
            ex_r_id =
'EX_routine'+str(r(ex_routine_min,ex_routine_max))
            if (id,ex_r_id) in check:
```



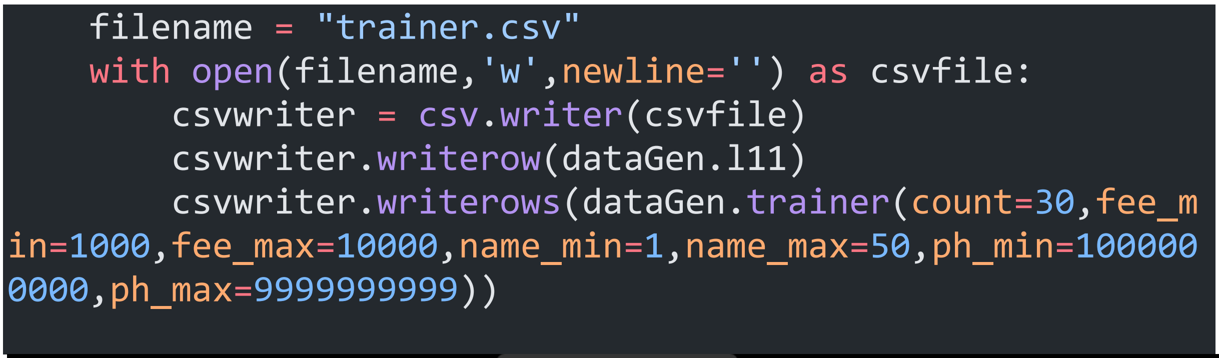
```
                pass
            else:
                result.append([id,ex_r_id])
                check.append((id,ex_r_id))
        return result

    def
exercise_list(self,count,description_min,description_max,t
ype_min,type_max):
        #f6
        result = []
        for i in range(count):
            result.append(["EX_ID"+str(i),"Description"+st
r(r(description_min,description_max)),"Type"+str(r(type_mi
n,type_max))])
        return result

    def
loyalty_pts(self,count,streaks_min,streaks_max,Level_min,L
evel_max,loyalty_min,loyalty_max):
        #f7
        result = []
        for i in range(count):
            result.append([r(streaks_min,streaks_max),r(Le
vel_min,Level_max),"LYL"+str(r(loyalty_min,loyalty_max))])
        return result

    def
user_info(self,count,height_min,height_max,weight_min,weig
ht_max,Fname_min,Fname_max,Mname_min,Mname_max,Lname_min,L
name_max):
        #f8
        gender_min = 0
        gender_max = 2
        result = []
        for i in range(count):
            result.append(["USR"+str(i),r(gender_min,gende
r_max),r(height_min,height_max),r(weight_min,weight_max),"
Fname"+str(r(Fname_min,Fname_max)),"Mname"+str(r(Mname_min
,Mname_max)),"Lname"+str(r(Lname_min,Lname_max))])
        return result
    def membership_type(self,count,period_min,period_max,amount_min,amount_max,user_id_min,user_id_max,trainer_id_min,trainer_id_max):
        #f9
        result = []
        for i in range(count):
            result.append(["MEM"+str(i),r(period_min,period_max),r(amount_min,amount_max),"USR"+str(r(user_id_min,user_id_max)),"TRAINER"+str(r(trainer_id_min,trainer_id_max))])
        return result

    def user_info_email(self,count,email_min,email_max,user_id_min,user_id_max):
        #f10
        result = []
        check = list()
        for i in range(count):
            email = "email.id."+str(r(email_min,email_max))+"@email.com"
            id = "USR"+str(r(user_id_min,user_id_max))
            if (email,id) in check:
                pass
            else:
                result.append([email,id])
                check.append((email,id))
        return result

    def trainer(self,count,fee_min,fee_max,name_min,name_max,ph_min=1000000000,ph_max=9999999999):
        #f11
        result = []
        for i in range(count):
            result.append(["TRAINER"+str(i),r(ph_min,ph_max),r(fee_min,fee_max),"TrainerName"+str(r(name_min,name_max))])
        return result

if __name__=='__main__':
```



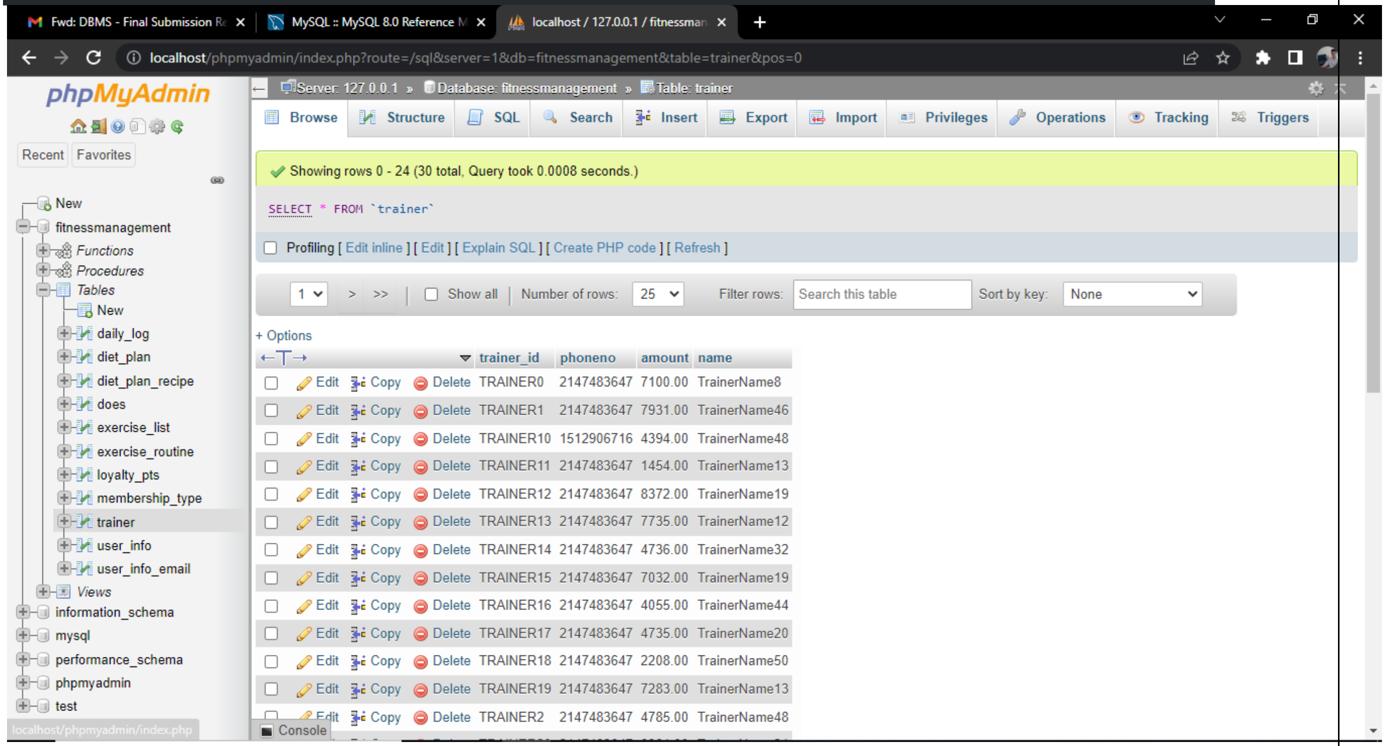
```
    dataGen = dataGeneration()

    filename = "diet_plan.csv"
    with open(filename,'w',newline='') as csvfile:
        csvwriter = csv.writer(csvfile)
        csvwriter.writerow(dataGen.l1)
        csvwriter.writerows(dataGen.diet_plan(count=100,ex
_routine_min=20,ex_routine_max=60,cal_min=100,cal_max=350,
recipe_min=5,recipe_max=25))

    filename = "exercise_routine.csv"
    with open(filename,'w',newline='') as csvfile:
        csvwriter = csv.writer(csvfile)
        csvwriter.writerow(dataGen.l2)
        csvwriter.writerows(dataGen.exercise_routine(count
=200,duration_min=30,duration_max=120,cal_min=50,cal_max=4
00,ex_id_min=0,ex_id_max=120))

    filename = "daily_log.csv"
    with open(filename,'w',newline='') as csvfile:
        csvwriter = csv.writer(csvfile)
        csvwriter.writerow(dataGen.l3)
        csvwriter.writerows(dataGen.daily_log(count=400,du
ration_min=40,duration_max=90,cal_min=90,cal_max=320,cal_c
onsume_min=1000,cal_consume_max=2500,feedback_min=0,feedba
ck_max=100,ex_routine_min=20,ex_routine_max=80))

    filename = "diet_plan_recipe.csv"
    with open(filename,'w',newline='') as csvfile:
        csvwriter = csv.writer(csvfile)
        csvwriter.writerow(dataGen.l4)
        csvwriter.writerows(dataGen.diet_plan_recipe(count
=80))

    filename = "does.csv"
    with open(filename,'w',newline='') as csvfile:
        csvwriter = csv.writer(csvfile)
        csvwriter.writerow(dataGen.l5)
        csvwriter.writerows(dataGen.does(count=70,user_id_
min=15,user_id_max=100,ex_routine_min=11,ex_routine_max=95
))
```



```
    filename = "exercise_list.csv"
    with open(filename,'w',newline='') as csvfile:
        csvwriter = csv.writer(csvfile)
        csvwriter.writerow(dataGen.l6)
        csvwriter.writerows(dataGen.exercise_list(count=15
0,description_min=20,description_max=300,type_min=5,type_m
ax=300))

    filename = "loyalty_pts.csv"
    with open(filename,'w',newline='') as csvfile:
        csvwriter = csv.writer(csvfile)
        csvwriter.writerow(dataGen.l7)
        csvwriter.writerows(dataGen.loyalty_pts(count=50,s
treaks_min=0,streaks_max=20,Level_min=1,Level_max=5,loyalt
y_min=30,loyalty_max=300))


    filename = "user_info.csv"
    with open(filename,'w',newline='') as csvfile:
        csvwriter = csv.writer(csvfile)
        csvwriter.writerow(dataGen.l8)
        csvwriter.writerows(dataGen.user_info(count=90,hei
ght_min=150,height_max=195,weight_min=45,weight_max=95,Fna
me_min=1,Fname_max=200,Mname_min=5,Mname_max=250,Lname_min
=5,Lname_max=250))

    filename = "membership_type.csv"
    with open(filename,'w',newline='') as csvfile:
        csvwriter = csv.writer(csvfile)
        csvwriter.writerow(dataGen.l9)
        csvwriter.writerows(dataGen.membership_type(count=
5,period_min=2,period_max=12,amount_min=1000,amount_max=10
000,user_id_min=1,user_id_max=75,trainer_id_min=1,trainer_
id_max=20))

    filename = "user_info_email.csv"
    with open(filename,'w',newline='') as csvfile:
        csvwriter = csv.writer(csvfile)
        csvwriter.writerow(dataGen.l10)
        csvwriter.writerows(dataGen.user_info_email(count=
60,email_min=1,email_max=50,user_id_min=1,user_id_max=50))
```



```
    filename = "trainer.csv"
    with open(filename,'w',newline='') as csvfile:
        csvwriter = csv.writer(csvfile)
        csvwriter.writerow(dataGen.l11)
        csvwriter.writerows(dataGen.trainer(count=30,fee_min=1000,fee_max=10000,name_min=1,name_max=50,ph_min=1000000000,ph_max=9999999999))
```



✓ Showing rows 0 - 24 (30 total, Query took 0.0008 seconds.)

```
SELECT * FROM `trainer`
```

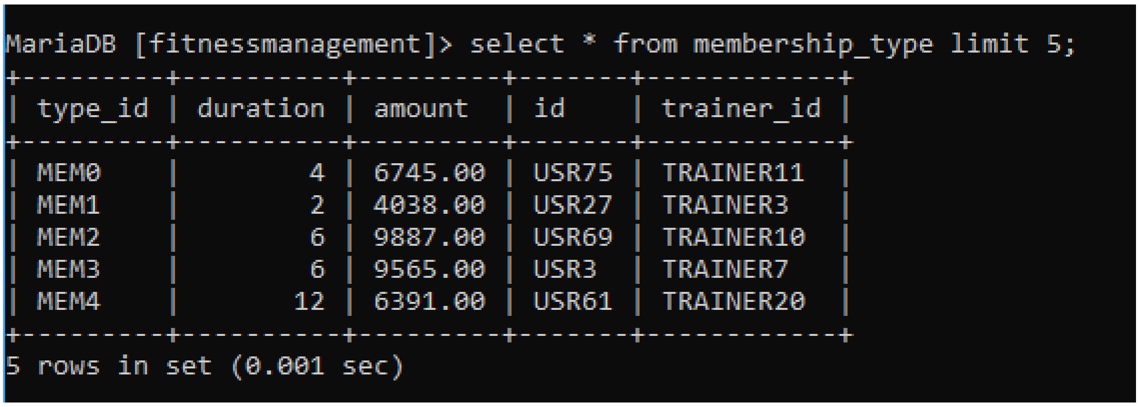
□ Profiling [ Edit inline ] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh ]

1 > >> □ Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

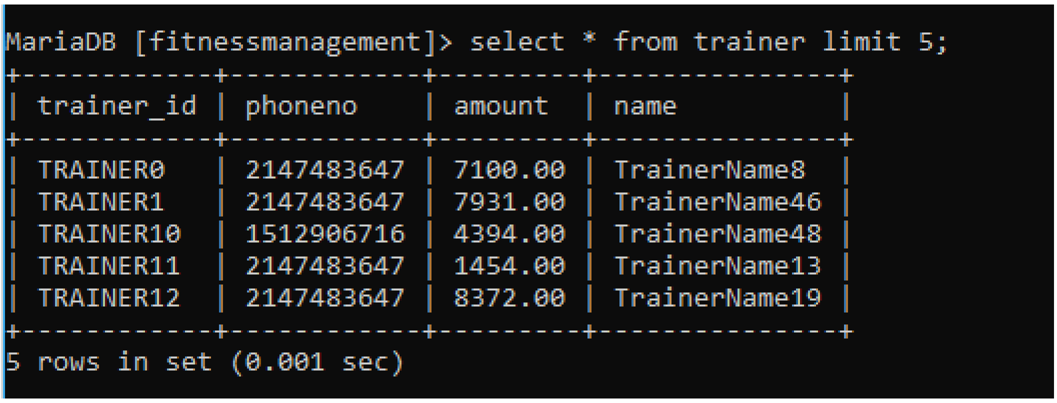
+ Options

| | trainer_id | phoneno | amount | name |
|---|---|---|---|---|
| □ Edit Copy Delete | TRAINER0 | 2147483647 | 7100.00 | TrainerName8 |
| □ Edit Copy Delete | TRAINER1 | 2147483647 | 7931.00 | TrainerName46 |
| □ Edit Copy Delete | TRAINER10 | 1512906716 | 4394.00 | TrainerName48 |
| □ Edit Copy Delete | TRAINER11 | 2147483647 | 1454.00 | TrainerName13 |
| □ Edit Copy Delete | TRAINER12 | 2147483647 | 8372.00 | TrainerName19 |
| □ Edit Copy Delete | TRAINER13 | 2147483647 | 7735.00 | TrainerName12 |
| □ Edit Copy Delete | TRAINER14 | 2147483647 | 4736.00 | TrainerName32 |
| □ Edit Copy Delete | TRAINER15 | 2147483647 | 7032.00 | TrainerName19 |
| □ Edit Copy Delete | TRAINER16 | 2147483647 | 4055.00 | TrainerName44 |
| □ Edit Copy Delete | TRAINER17 | 2147483647 | 4735.00 | TrainerName20 |
| □ Edit Copy Delete | TRAINER18 | 2147483647 | 2208.00 | TrainerName50 |
| □ Edit Copy Delete | TRAINER19 | 2147483647 | 7283.00 | TrainerName13 |
| □ Edit Copy Delete | TRAINER2 | 2147483647 | 4785.00 | TrainerName48 |

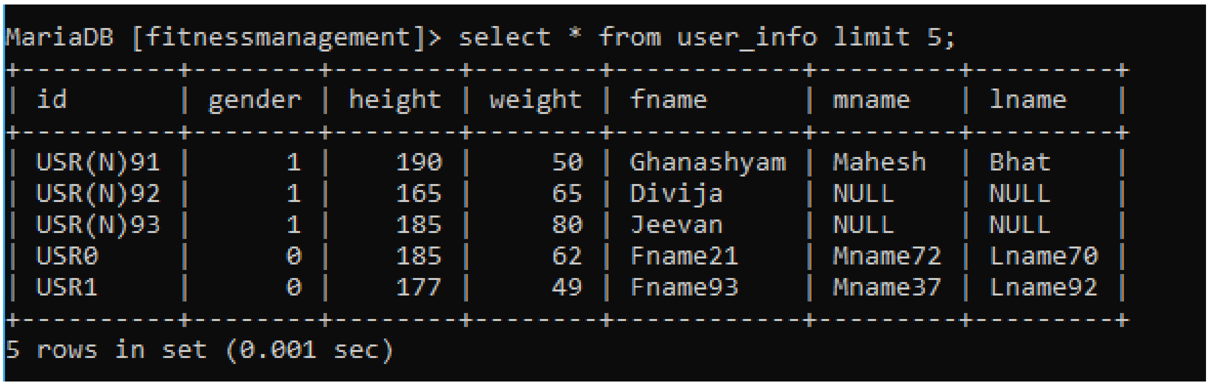
Sample data of every table after population of database



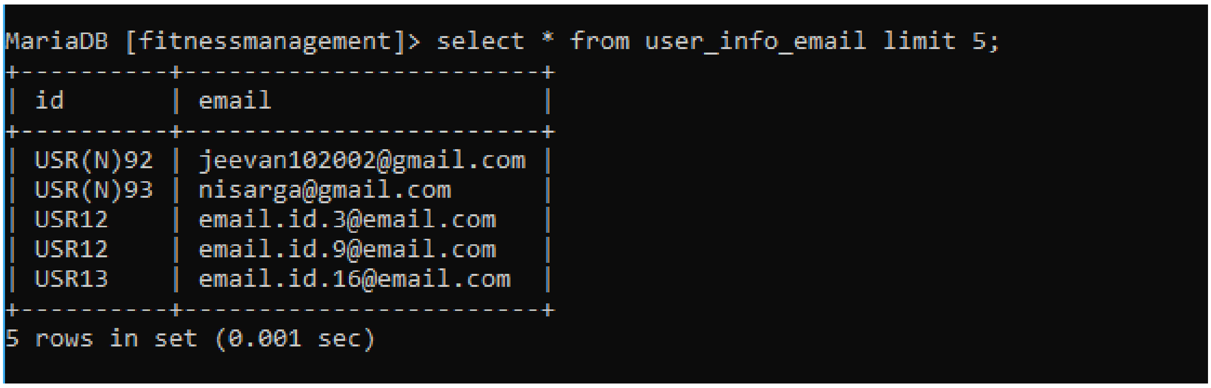
```
MariaDB [fitnessmanagement]> select * from membership_type limit 5;
+---------+----------+---------+-------+------------+
| type_id | duration | amount  | id    | trainer_id |
+---------+----------+---------+-------+------------+
| MEM0    |        4 | 6745.00 | USR75 | TRAINER11  |
| MEM1    |        2 | 4038.00 | USR27 | TRAINER3   |
| MEM2    |        6 | 9887.00 | USR69 | TRAINER10  |
| MEM3    |        6 | 9565.00 | USR3  | TRAINER7   |
| MEM4    |       12 | 6391.00 | USR61 | TRAINER20  |
+---------+----------+---------+-------+------------+
5 rows in set (0.001 sec)
```



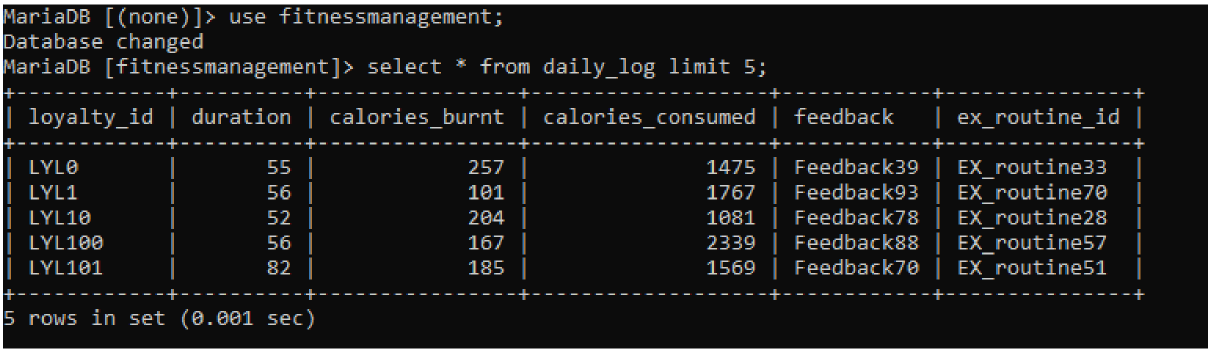
```
MariaDB [fitnessmanagement]> select * from trainer limit 5;
+------------+------------+---------+---------------+
| trainer_id | phoneno    | amount  | name          |
+------------+------------+---------+---------------+
| TRAINER0   | 2147483647 | 7100.00 | TrainerName8  |
| TRAINER1   | 2147483647 | 7931.00 | TrainerName46 |
| TRAINER10  | 1512906716 | 4394.00 | TrainerName48 |
| TRAINER11  | 2147483647 | 1454.00 | TrainerName13 |
| TRAINER12  | 2147483647 | 8372.00 | TrainerName19 |
+------------+------------+---------+---------------+
5 rows in set (0.001 sec)
```



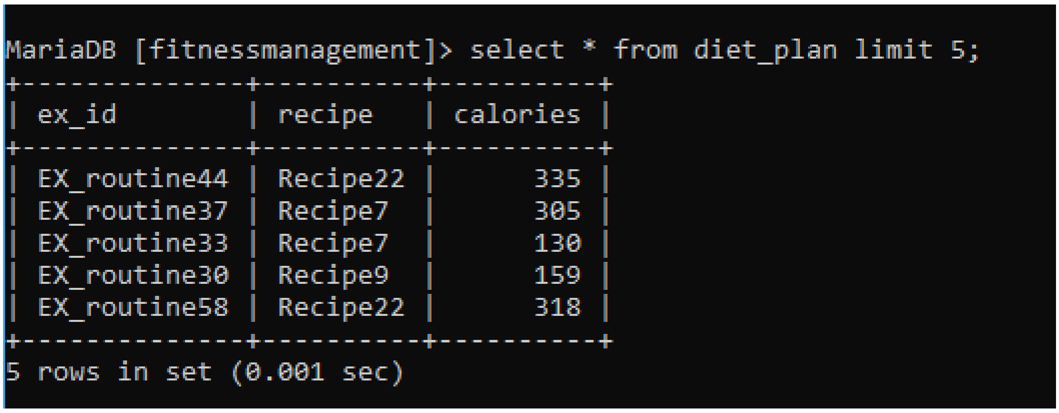
```
MariaDB [fitnessmanagement]> select * from user_info limit 5;
+----------+--------+--------+--------+------------+---------+---------+
| id       | gender | height | weight | fname      | mname   | lname   |
+----------+--------+--------+--------+------------+---------+---------+
| USR(N)91 |      1 |    190 |     50 | Ghanashyam | Mahesh  | Bhat    |
| USR(N)92 |      1 |    165 |     65 | Divija     | NULL    | NULL    |
| USR(N)93 |      1 |    185 |     80 | Jeevan     | NULL    | NULL    |
| USR0     |      0 |    185 |     62 | Fname21    | Mname72 | Lname70 |
| USR1     |      0 |    177 |     49 | Fname93    | Mname37 | Lname92 |
+----------+--------+--------+--------+------------+---------+---------+
5 rows in set (0.001 sec)
```



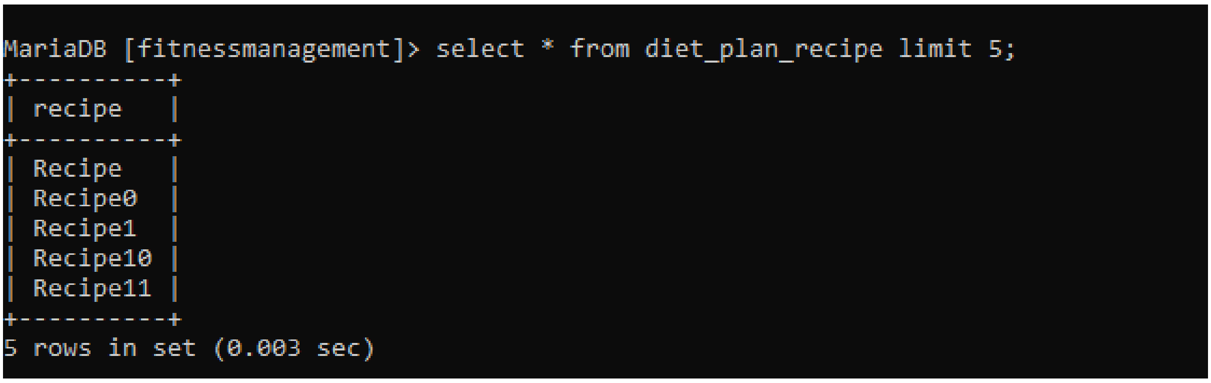
```
MariaDB [fitnessmanagement]> select * from user_info_email limit 5;
+----------+-----------------------+
| id       | email                 |
+----------+-----------------------+
| USR(N)92 | jeevan102002@gmail.com |
| USR(N)93 | nisarga@gmail.com     |
| USR12    | email.id.3@email.com  |
| USR12    | email.id.9@email.com  |
| USR13    | email.id.16@email.com |
+----------+-----------------------+
5 rows in set (0.001 sec)
```



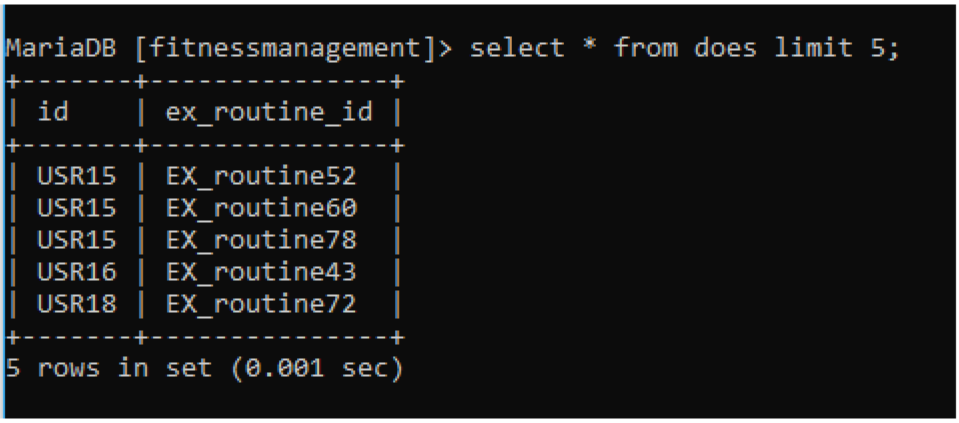
```
MariaDB [(none)]> use fitnessmanagement;
Database changed
MariaDB [fitnessmanagement]> select * from daily_log limit 5;
+------------+----------+----------------+-------------------+------------+---------------+
| loyalty_id | duration | calories_burnt | calories_consumed | feedback   | ex_routine_id |
+------------+----------+----------------+-------------------+------------+---------------+
| LYL0       |       55 |            257 |              1475 | Feedback39 | EX_routine33  |
| LYL1       |       56 |            101 |              1767 | Feedback93 | EX_routine70  |
| LYL10      |       52 |            204 |              1081 | Feedback78 | EX_routine28  |
| LYL100     |       56 |            167 |              2339 | Feedback88 | EX_routine57  |
| LYL101     |       82 |            185 |              1569 | Feedback70 | EX_routine51  |
+------------+----------+----------------+-------------------+------------+---------------+
5 rows in set (0.001 sec)
```



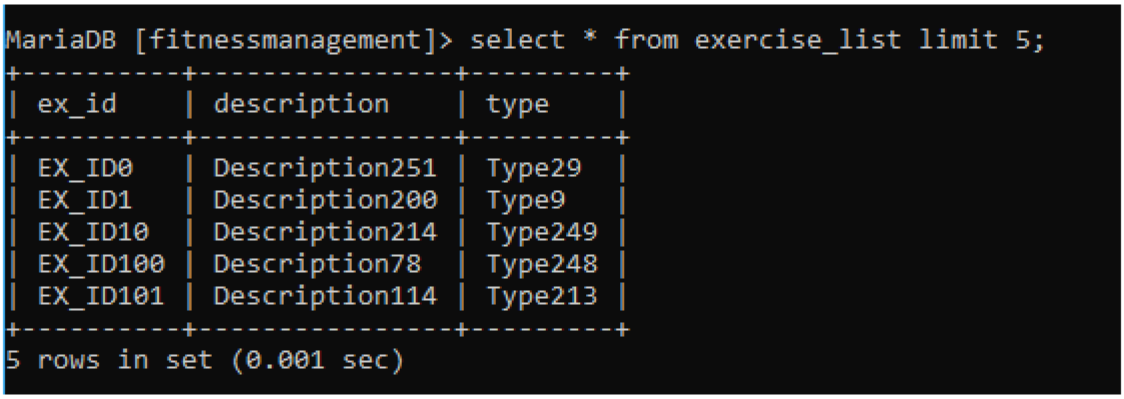
```
MariaDB [fitnessmanagement]> select * from diet_plan limit 5;
+--------------+----------+----------+
| ex_id        | recipe   | calories |
+--------------+----------+----------+
| EX_routine44 | Recipe22 |      335 |
| EX_routine37 | Recipe7  |      305 |
| EX_routine33 | Recipe7  |      130 |
| EX_routine30 | Recipe9  |      159 |
| EX_routine58 | Recipe22 |      318 |
+--------------+----------+----------+
5 rows in set (0.001 sec)
```



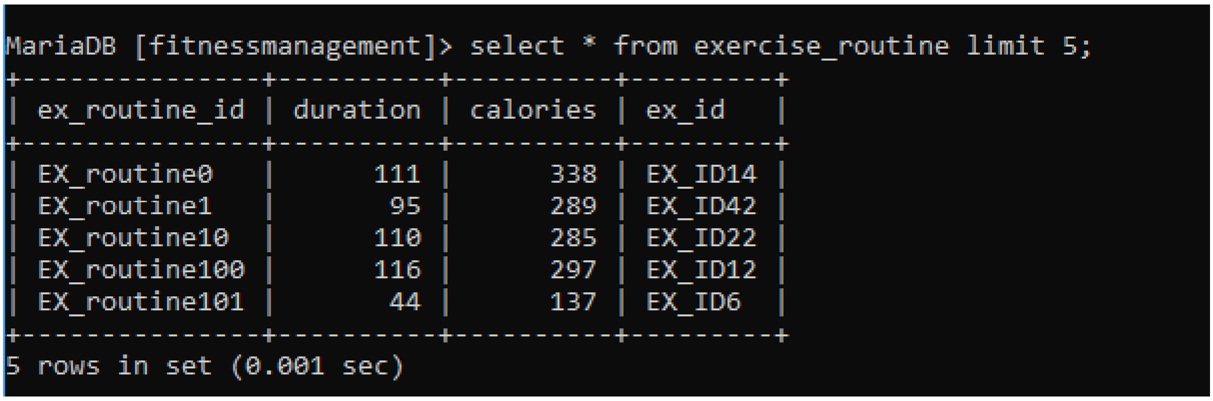
```
MariaDB [fitnessmanagement]> select * from diet_plan_recipe limit 5;
+----------+
| recipe   |
+----------+
| Recipe   |
| Recipe0  |
| Recipe1  |
| Recipe10 |
| Recipe11 |
+----------+
5 rows in set (0.003 sec)
```



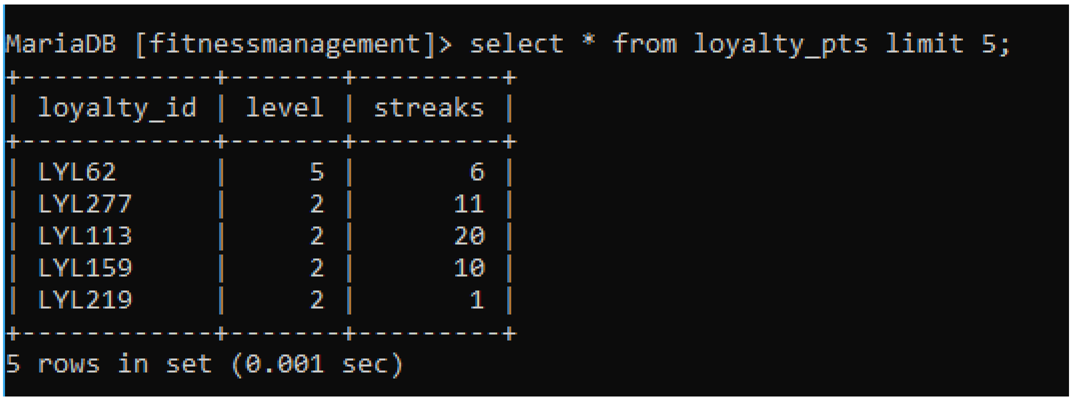
```
MariaDB [fitnessmanagement]> select * from does limit 5;
+-------+---------------+
| id    | ex_routine_id |
+-------+---------------+
| USR15 | EX_routine52  |
| USR15 | EX_routine60  |
| USR15 | EX_routine78  |
| USR16 | EX_routine43  |
| USR18 | EX_routine72  |
+-------+---------------+
5 rows in set (0.001 sec)
```



```
MariaDB [fitnessmanagement]> select * from exercise_list limit 5;
+----------+----------------+---------+
| ex_id    | description    | type    |
+----------+----------------+---------+
| EX_ID0   | Description251 | Type29  |
| EX_ID1   | Description200 | Type9   |
| EX_ID10  | Description214 | Type249 |
| EX_ID100 | Description78  | Type248 |
| EX_ID101 | Description114 | Type213 |
+----------+----------------+---------+
5 rows in set (0.001 sec)
```



```
MariaDB [fitnessmanagement]> select * from exercise_routine limit 5;
+---------------+----------+----------+---------+
| ex_routine_id | duration | calories | ex_id   |
+---------------+----------+----------+---------+
| EX_routine0   |      111 |      338 | EX_ID14 |
| EX_routine1   |       95 |      289 | EX_ID42 |
| EX_routine10  |      110 |      285 | EX_ID22 |
| EX_routine100 |      116 |      297 | EX_ID12 |
| EX_routine101 |       44 |      137 | EX_ID6  |
+---------------+----------+----------+---------+
5 rows in set (0.001 sec)
```



```
MariaDB [fitnessmanagement]> select * from loyalty_pts limit 5;
+------------+-------+---------+
| loyalty_id | level | streaks |
+------------+-------+---------+
| LYL62      |     5 |       6 |
| LYL277     |     2 |      11 |
| LYL113     |     2 |      20 |
| LYL159     |     2 |      10 |
| LYL219     |     2 |       1 |
+------------+-------+---------+
5 rows in set (0.001 sec)
```

## Tool Used

The below are the tools used for the project development

| Frontend | Backend |
|---|---|
| Flask | mysql |
| HTML | Sql sqlalchemy |
| Bootstrap | Python3.x |
| Jinja | javascript |

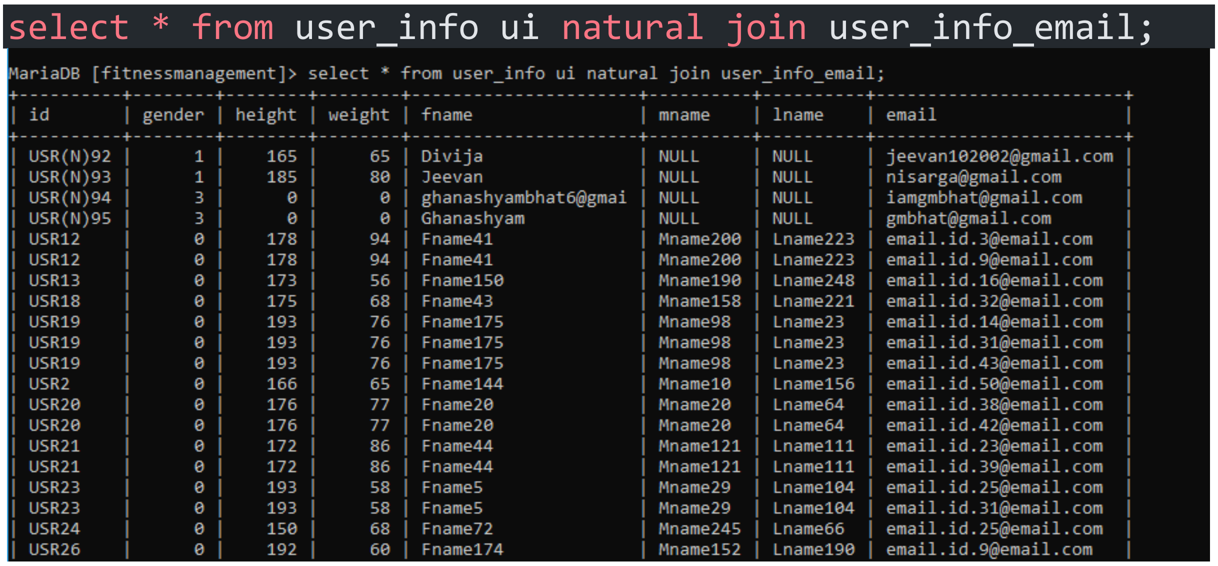
**Queries**

**Join queries (at least 6)**

**Regualar Join (2 queries):**

1. To display the user information along with the user email ID by combining user_info and user_info_email table.

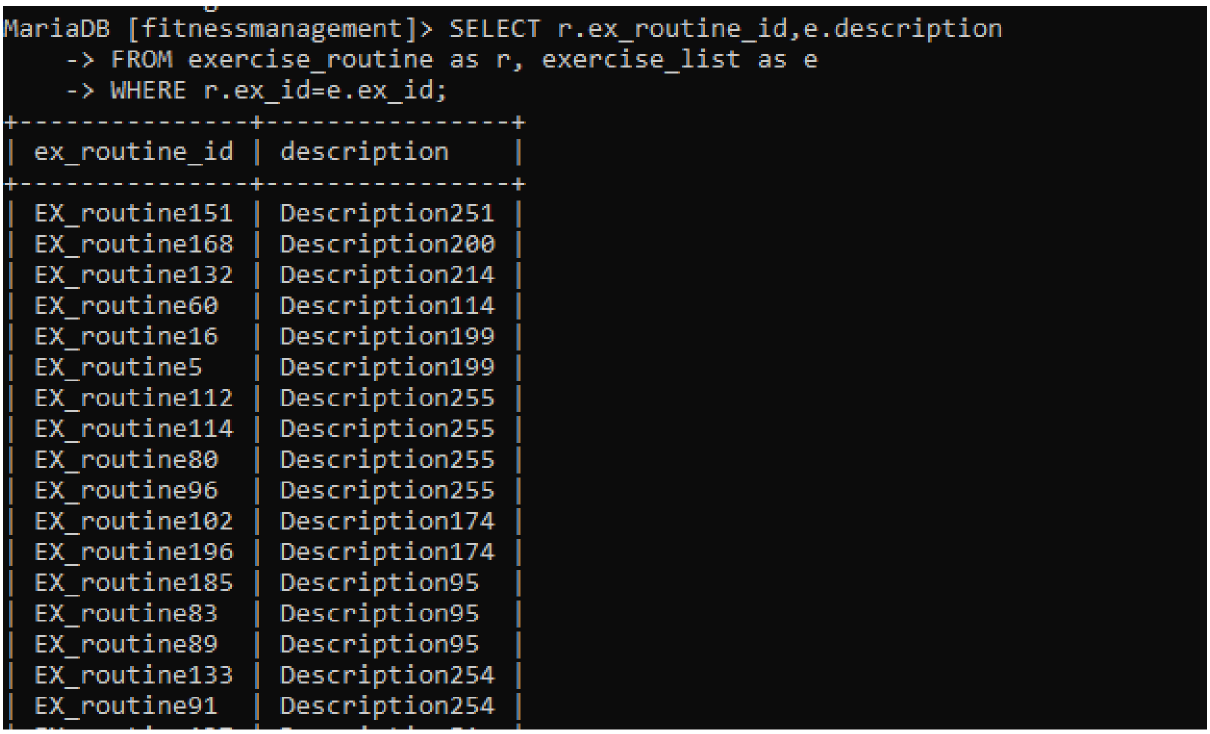
```
select * from user_info ui natural join user_info_email;
```



```
MariaDB [fitnessmanagement]> select * from user_info ui natural join user_info_email;
+----------+--------+--------+--------+----------------------+----------+----------+------------------------+
| id       | gender | height | weight | fname                | mname    | lname    | email                  |
+----------+--------+--------+--------+----------------------+----------+----------+------------------------+
| USR(N)92 |      1 |    165 |     65 | Divija               | NULL     | NULL     | jeevan102002@gmail.com |
| USR(N)93 |      1 |    185 |     80 | Jeevan               | NULL     | NULL     | nisarga@gmail.com      |
| USR(N)94 |      3 |      0 |      0 | ghanashyambhat6@gmai | NULL     | NULL     | iamgmbhat@gmail.com    |
| USR(N)95 |      3 |      0 |      0 | Ghanashyam           | NULL     | NULL     | gmbhat@gmail.com       |
| USR12    |      0 |    178 |     94 | Fname41              | Mname200 | Lname223 | email.id.3@email.com   |
| USR12    |      0 |    178 |     94 | Fname41              | Mname200 | Lname223 | email.id.9@email.com   |
| USR13    |      0 |    173 |     56 | Fname150             | Mname190 | Lname248 | email.id.16@email.com  |
| USR18    |      0 |    175 |     68 | Fname43              | Mname158 | Lname221 | email.id.32@email.com  |
| USR19    |      0 |    193 |     76 | Fname175             | Mname98  | Lname23  | email.id.14@email.com  |
| USR19    |      0 |    193 |     76 | Fname175             | Mname98  | Lname23  | email.id.31@email.com  |
| USR19    |      0 |    193 |     76 | Fname175             | Mname98  | Lname23  | email.id.43@email.com  |
| USR2     |      0 |    166 |     65 | Fname144             | Mname10  | Lname156 | email.id.50@email.com  |
| USR20    |      0 |    176 |     77 | Fname20              | Mname20  | Lname64  | email.id.38@email.com  |
| USR20    |      0 |    176 |     77 | Fname20              | Mname20  | Lname64  | email.id.42@email.com  |
| USR21    |      0 |    172 |     86 | Fname44              | Mname121 | Lname111 | email.id.23@email.com  |
| USR21    |      0 |    172 |     86 | Fname44              | Mname121 | Lname111 | email.id.39@email.com  |
| USR23    |      0 |    193 |     58 | Fname5               | Mname29  | Lname104 | email.id.25@email.com  |
| USR23    |      0 |    193 |     58 | Fname5               | Mname29  | Lname104 | email.id.31@email.com  |
| USR24    |      0 |    150 |     68 | Fname72              | Mname245 | Lname66  | email.id.25@email.com  |
| USR26    |      0 |    192 |     60 | Fname174             | Mname152 | Lname190 | email.id.9@email.com   |
```

2. Display each exercise routine id along with the exercise description by combining excercise list and exercise routine table

```
SELECT r.ex_routine_id,e.description
FROM exercise_routine as r, exercise_list as e
WHERE r.ex_id=e.ex_id;
```

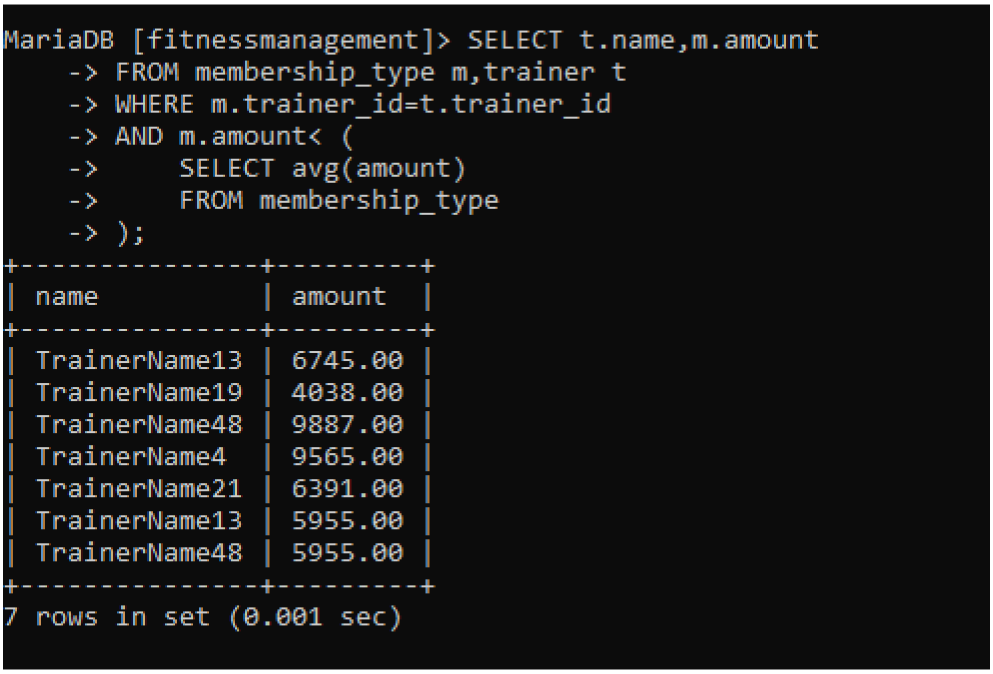


```
MariaDB [fitnessmanagement]> SELECT r.ex_routine_id,e.description
    -> FROM exercise_routine as r, exercise_list as e
    -> WHERE r.ex_id=e.ex_id;
+----------------+----------------+
| ex_routine_id  | description    |
+----------------+----------------+
| EX_routine151  | Description251 |
| EX_routine168  | Description200 |
| EX_routine132  | Description214 |
| EX_routine60   | Description114 |
| EX_routine16   | Description199 |
| EX_routine5    | Description199 |
| EX_routine112  | Description255 |
| EX_routine114  | Description255 |
| EX_routine80   | Description255 |
| EX_routine96   | Description255 |
| EX_routine102  | Description174 |
| EX_routine196  | Description174 |
| EX_routine185  | Description95  |
| EX_routine83   | Description95  |
| EX_routine89   | Description95  |
| EX_routine133  | Description254 |
| EX_routine91   | Description254 |
```

### Co-related Join (2 Queries)

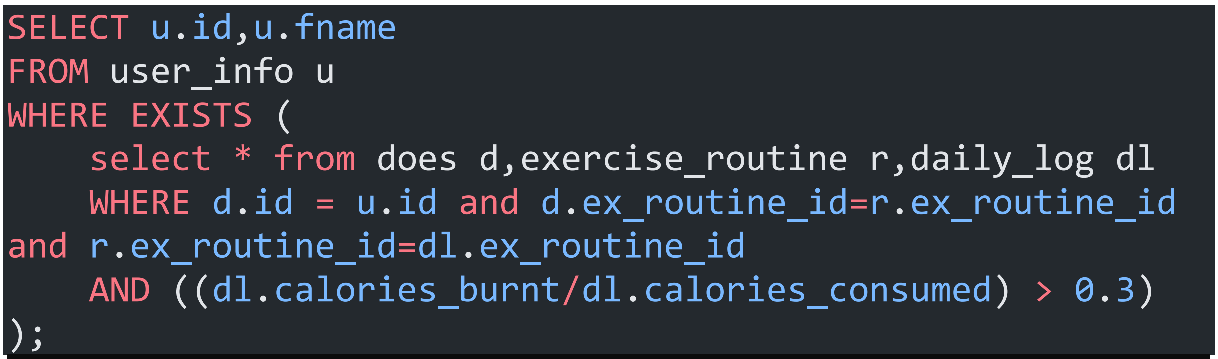
1. Display name of the trainer and the amount if the amount charged by the trainer is less than the average amount

```
SELECT t.name,m.amount
FROM membership_type m,trainer t
WHERE m.trainer_id=t.trainer_id
AND m.amount< (
    SELECT avg(amount)
    FROM membership_type
);
```

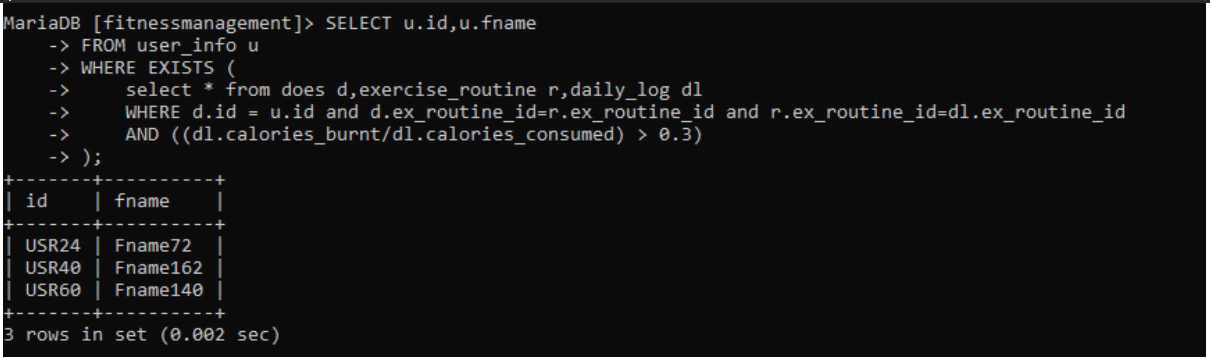


```
MariaDB [fitnessmanagement]> SELECT t.name,m.amount
    -> FROM membership_type m,trainer t
    -> WHERE m.trainer_id=t.trainer_id
    -> AND m.amount< (
    ->     SELECT avg(amount)
    ->     FROM membership_type
    -> );
+---------------+---------+
| name          | amount  |
+---------------+---------+
| TrainerName13 | 6745.00 |
| TrainerName19 | 4038.00 |
| TrainerName48 | 9887.00 |
| TrainerName4  | 9565.00 |
| TrainerName21 | 6391.00 |
| TrainerName13 | 5955.00 |
| TrainerName48 | 5955.00 |
+---------------+---------+
7 rows in set (0.001 sec)
```

2. Display the ID and name of the user if he burns more than 30% of the calories consumed.



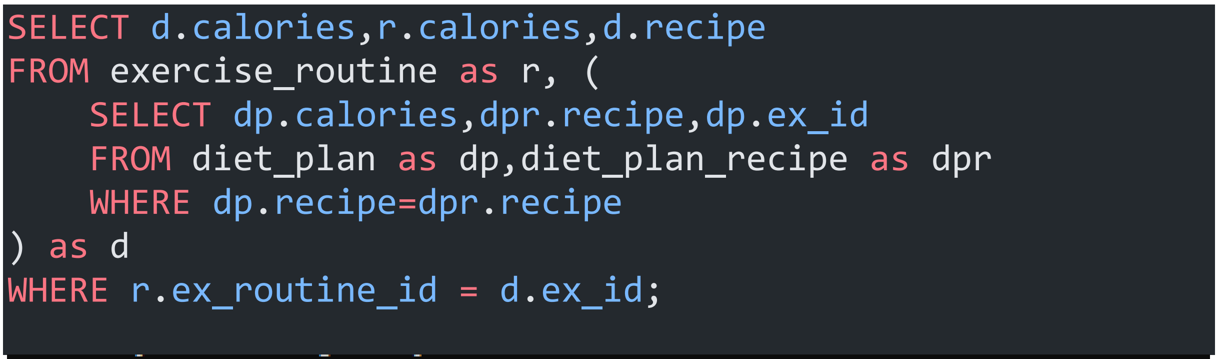
```
SELECT u.id,u.fname
FROM user_info u
WHERE EXISTS (
    select * from does d,exercise_routine r,daily_log dl
    WHERE d.id = u.id and d.ex_routine_id=r.ex_routine_id
and r.ex_routine_id=dl.ex_routine_id
    AND ((dl.calories_burnt/dl.calories_consumed) > 0.3)
);
```



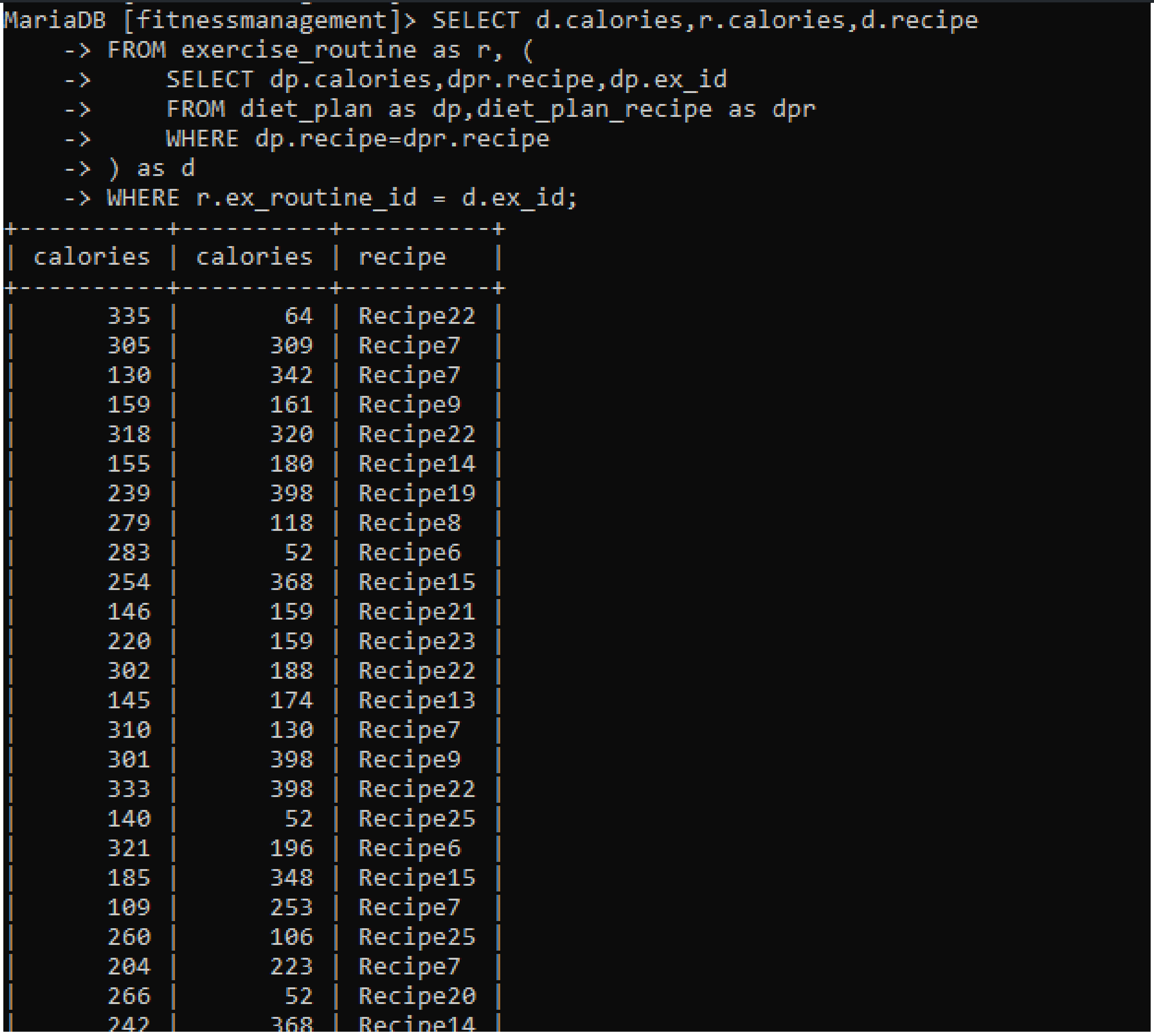
```
MariaDB [fitnessmanagement]> SELECT u.id,u.fname
    -> FROM user_info u
    -> WHERE EXISTS (
    ->     select * from does d,exercise_routine r,daily_log dl
    ->     WHERE d.id = u.id and d.ex_routine_id=r.ex_routine_id and r.ex_routine_id=dl.ex_routine_id
    ->     AND ((dl.calories_burnt/dl.calories_consumed) > 0.3)
    -> );
+-------+----------+
| id    | fname    |
+-------+----------+
| USR24 | Fname72  |
| USR40 | Fname162 |
| USR60 | Fname140 |
+-------+----------+
3 rows in set (0.002 sec)
```

**Nested Join (2 Queries)**

1. Display exercise routine and recipe with calories consumed and calories burned.



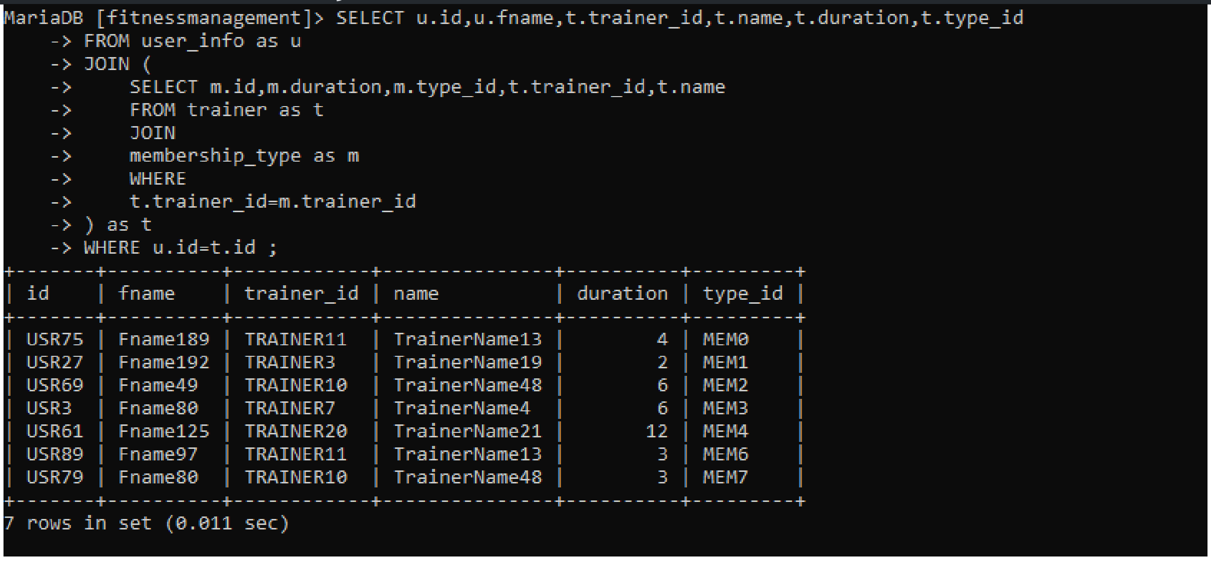
```
SELECT d.calories,r.calories,d.recipe
FROM exercise_routine as r, (
    SELECT dp.calories,dpr.recipe,dp.ex_id
    FROM diet_plan as dp,diet_plan_recipe as dpr
    WHERE dp.recipe=dpr.recipe
) as d
WHERE r.ex_routine_id = d.ex_id;
```



```
MariaDB [fitnessmanagement]> SELECT d.calories,r.calories,d.recipe
    -> FROM exercise_routine as r, (
    ->     SELECT dp.calories,dpr.recipe,dp.ex_id
    ->     FROM diet_plan as dp,diet_plan_recipe as dpr
    ->     WHERE dp.recipe=dpr.recipe
    -> ) as d
    -> WHERE r.ex_routine_id = d.ex_id;
+----------+----------+----------+
| calories | calories | recipe   |
+----------+----------+----------+
|      335 |       64 | Recipe22 |
|      305 |      309 | Recipe7  |
|      130 |      342 | Recipe7  |
|      159 |      161 | Recipe9  |
|      318 |      320 | Recipe22 |
|      155 |      180 | Recipe14 |
|      239 |      398 | Recipe19 |
|      279 |      118 | Recipe8  |
|      283 |       52 | Recipe6  |
|      254 |      368 | Recipe15 |
|      146 |      159 | Recipe21 |
|      220 |      159 | Recipe23 |
|      302 |      188 | Recipe22 |
|      145 |      174 | Recipe13 |
|      310 |      130 | Recipe7  |
|      301 |      398 | Recipe9  |
|      333 |      398 | Recipe22 |
|      140 |       52 | Recipe25 |
|      321 |      196 | Recipe6  |
|      185 |      348 | Recipe15 |
|      109 |      253 | Recipe7  |
|      260 |      106 | Recipe25 |
|      204 |      223 | Recipe7  |
|      266 |       52 | Recipe20 |
|      242 |      368 | Recipe14 |
```

2. List user info, subscription purchased and trainer info for the user who has subscribed to a membership

```
SELECT
u.id,u.fname,t.trainer_id,t.name,t.duration,t.type_id
FROM user_info as u
JOIN (
    SELECT m.id,m.duration,m.type_id,t.trainer_id,t.name
    FROM trainer as t
    JOIN
    membership_type as m
    WHERE
    t.trainer_id=m.trainer_id
) as t
WHERE u.id=t.id ;
```

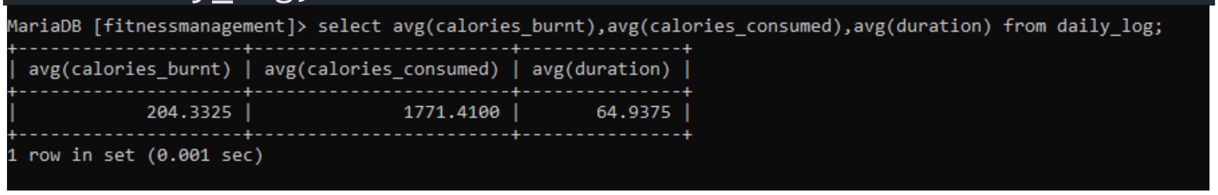


```
MariaDB [fitnessmanagement]> SELECT u.id,u.fname,t.trainer_id,t.name,t.duration,t.type_id
    -> FROM user_info as u
    -> JOIN (
    ->     SELECT m.id,m.duration,m.type_id,t.trainer_id,t.name
    ->     FROM trainer as t
    ->     JOIN
    ->     membership_type as m
    ->     WHERE
    ->     t.trainer_id=m.trainer_id
    -> ) as t
    -> WHERE u.id=t.id ;
+-------+----------+------------+--------------+----------+---------+
| id    | fname    | trainer_id | name         | duration | type_id |
+-------+----------+------------+--------------+----------+---------+
| USR75 | Fname189 | TRAINER11  | TrainerName13 |        4 | MEM0    |
| USR27 | Fname192 | TRAINER3   | TrainerName19 |        2 | MEM1    |
| USR69 | Fname49  | TRAINER10  | TrainerName48 |        6 | MEM2    |
| USR3  | Fname80  | TRAINER7   | TrainerName4  |        6 | MEM3    |
| USR61 | Fname125 | TRAINER20  | TrainerName21 |       12 | MEM4    |
| USR89 | Fname97  | TRAINER11  | TrainerName13 |        3 | MEM6    |
| USR79 | Fname80  | TRAINER10  | TrainerName48 |        3 | MEM7    |
+-------+----------+------------+--------------+----------+---------+
7 rows in set (0.011 sec)
```

### Aggregate Functions (at least 2)

1.Display the average calories consumed, average calories burned and duration of exercise by all the users.

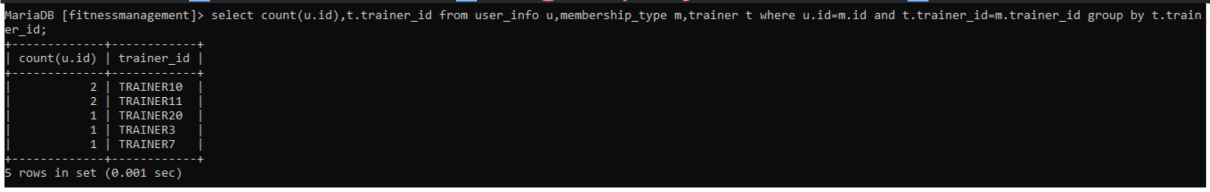
```
select
avg(calories_burnt),avg(calories_consumed),avg(duration)
from daily_log;
```



```
MariaDB [fitnessmanagement]> select avg(calories_burnt),avg(calories_consumed),avg(duration) from daily_log;
+---------------------+-----------------------+---------------+
| avg(calories_burnt) | avg(calories_consumed) | avg(duration) |
+---------------------+-----------------------+---------------+
|            204.3325 |             1771.4100 |       64.9375 |
+---------------------+-----------------------+---------------+
1 row in set (0.001 sec)
```

2. Display number of users per trainer as per the membership purchased

```
select count(u.id),t.trainer_id from user_info
u,membership_type m,trainer t where u.id=m.id and
t.trainer_id=m.trainer_id group by t.trainer_id;
```

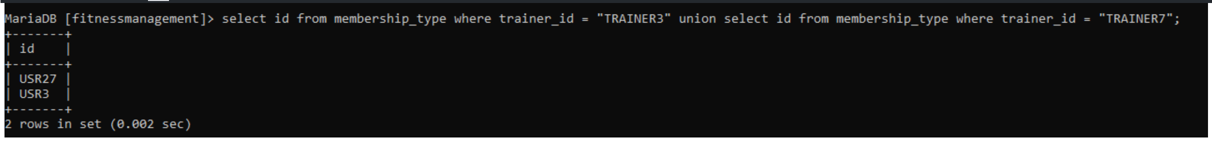


```
MariaDB [fitnessmanagement]> select count(u.id),t.trainer_id from user_info u,membership_type m,trainer t where u.id=m.id and t.trainer_id=m.trainer_id group by t.train
er_id;
+-------------+------------+
| count(u.id) | trainer_id |
+-------------+------------+
|           2 | TRAINER10  |
|           2 | TRAINER11  |
|           1 | TRAINER20  |
|           1 | TRAINER3   |
|           1 | TRAINER7   |
+-------------+------------+
5 rows in set (0.001 sec)
```

## Set Operations (at least 2)

**1.** Display users who have subscribed to Trainer3 or Trainer7

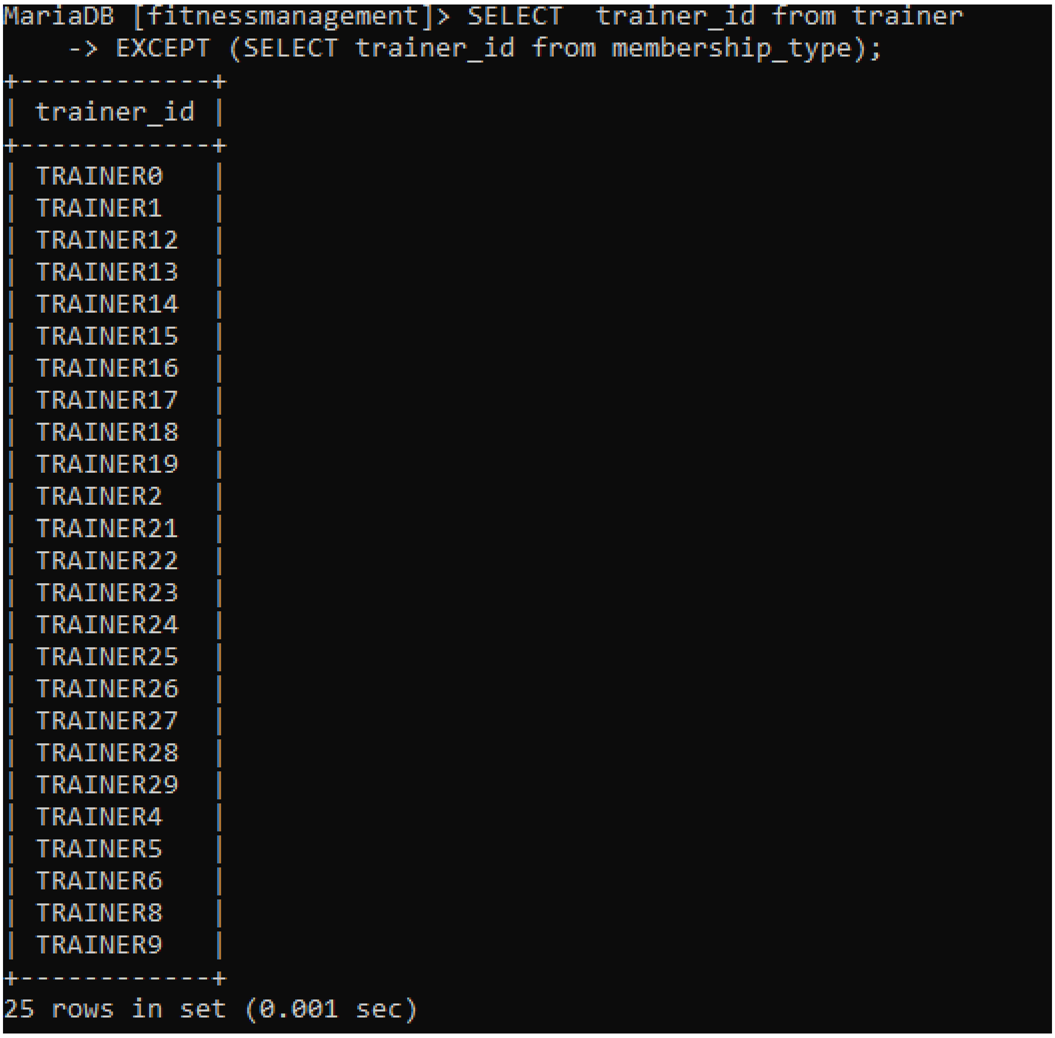
```
select id from membership_type where trainer_id =
"TRAINER3" union select id from membership_type where
trainer_id = "TRAINER7";
```



```
MariaDB [fitnessmanagement]> select id from membership_type where trainer_id = "TRAINER3" union select id from membership_type where trainer_id = "TRAINER7";
+-------+
| id    |
+-------+
| USR27 |
| USR3  |
+-------+
2 rows in set (0.002 sec)
```

**2.** Display all the trainers who are not assigned to any user

```
SELECT  trainer_id from trainer
EXCEPT (SELECT trainer_id from membership_type);
```

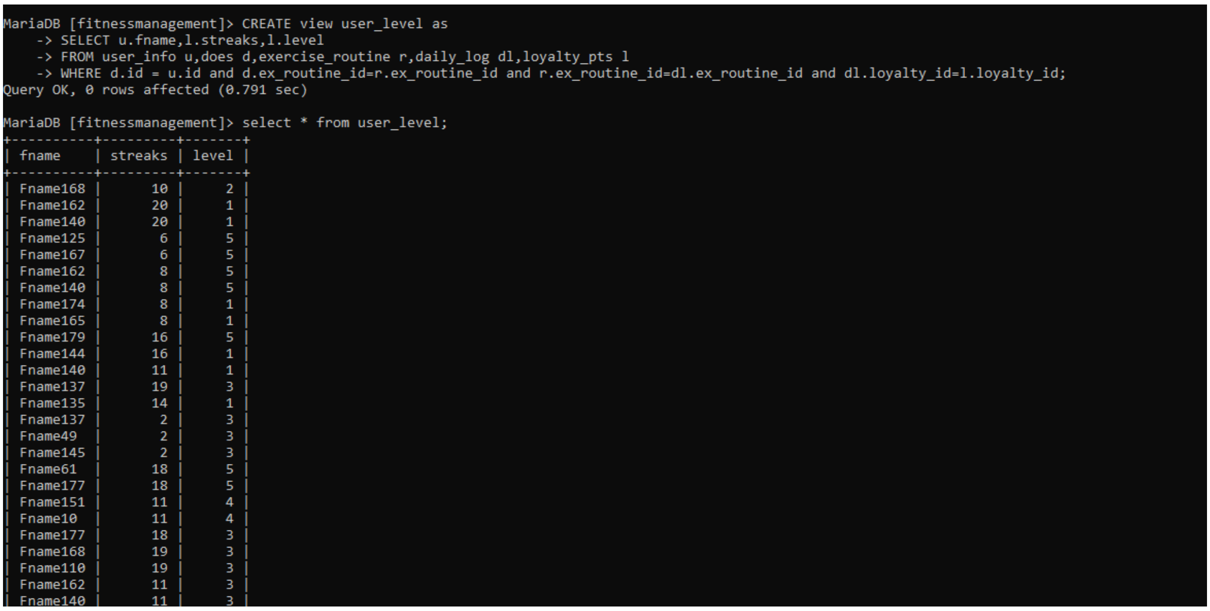


```
MariaDB [fitnessmanagement]> SELECT  trainer_id from trainer
    -> EXCEPT (SELECT trainer_id from membership_type);
+------------+
| trainer_id |
+------------+
| TRAINER0   |
| TRAINER1   |
| TRAINER12  |
| TRAINER13  |
| TRAINER14  |
| TRAINER15  |
| TRAINER16  |
| TRAINER17  |
| TRAINER18  |
| TRAINER19  |
| TRAINER2   |
| TRAINER21  |
| TRAINER22  |
| TRAINER23  |
| TRAINER24  |
| TRAINER25  |
| TRAINER26  |
| TRAINER27  |
| TRAINER28  |
| TRAINER29  |
| TRAINER4   |
| TRAINER5   |
| TRAINER6   |
| TRAINER8   |
| TRAINER9   |
+------------+
25 rows in set (0.001 sec)
```

### View (atleast 1)

The view is created for easier access of Streak and Level information of every user based on their daily log.

```
CREATE view user_level as
SELECT u.fname,l.streaks,l.level
FROM user_info u,does d,exercise_routine r,daily_log
dl,loyalty_pts l
WHERE d.id = u.id and d.ex_routine_id=r.ex_routine_id and
r.ex_routine_id=dl.ex_routine_id and
dl.loyalty_id=l.loyalty_id;
```



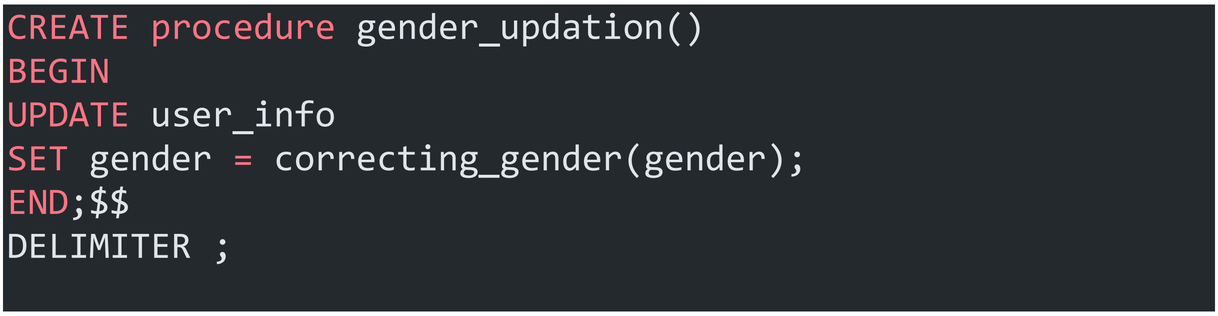
```
MariaDB [fitnessmanagement]> CREATE view user_level as
    -> SELECT u.fname,l.streaks,l.level
    -> FROM user_info u,does d,exercise_routine r,daily_log dl,loyalty_pts l
    -> WHERE d.id = u.id and d.ex_routine_id=r.ex_routine_id and r.ex_routine_id=dl.ex_routine_id and dl.loyalty_id=l.loyalty_id;
Query OK, 0 rows affected (0.791 sec)

MariaDB [fitnessmanagement]> select * from user_level;
+----------+---------+-------+
| fname    | streaks | level |
+----------+---------+-------+
| Fname168 |      10 |     2 |
| Fname162 |      20 |     1 |
| Fname140 |      20 |     1 |
| Fname125 |       6 |     5 |
| Fname167 |       6 |     5 |
| Fname162 |       8 |     5 |
| Fname140 |       8 |     5 |
| Fname174 |       8 |     1 |
| Fname165 |       8 |     1 |
| Fname179 |      16 |     5 |
| Fname144 |      16 |     1 |
| Fname140 |      11 |     1 |
| Fname137 |      19 |     3 |
| Fname135 |      14 |     1 |
| Fname137 |       2 |     3 |
| Fname49  |       2 |     3 |
| Fname145 |       2 |     3 |
| Fname61  |      18 |     5 |
| Fname177 |      18 |     5 |
| Fname151 |      11 |     4 |
| Fname10  |      11 |     4 |
| Fname177 |      18 |     3 |
| Fname168 |      19 |     3 |
| Fname110 |      19 |     3 |
| Fname162 |      11 |     3 |
| Fname140 |      11 |     3 |
```

## Function and Procedure

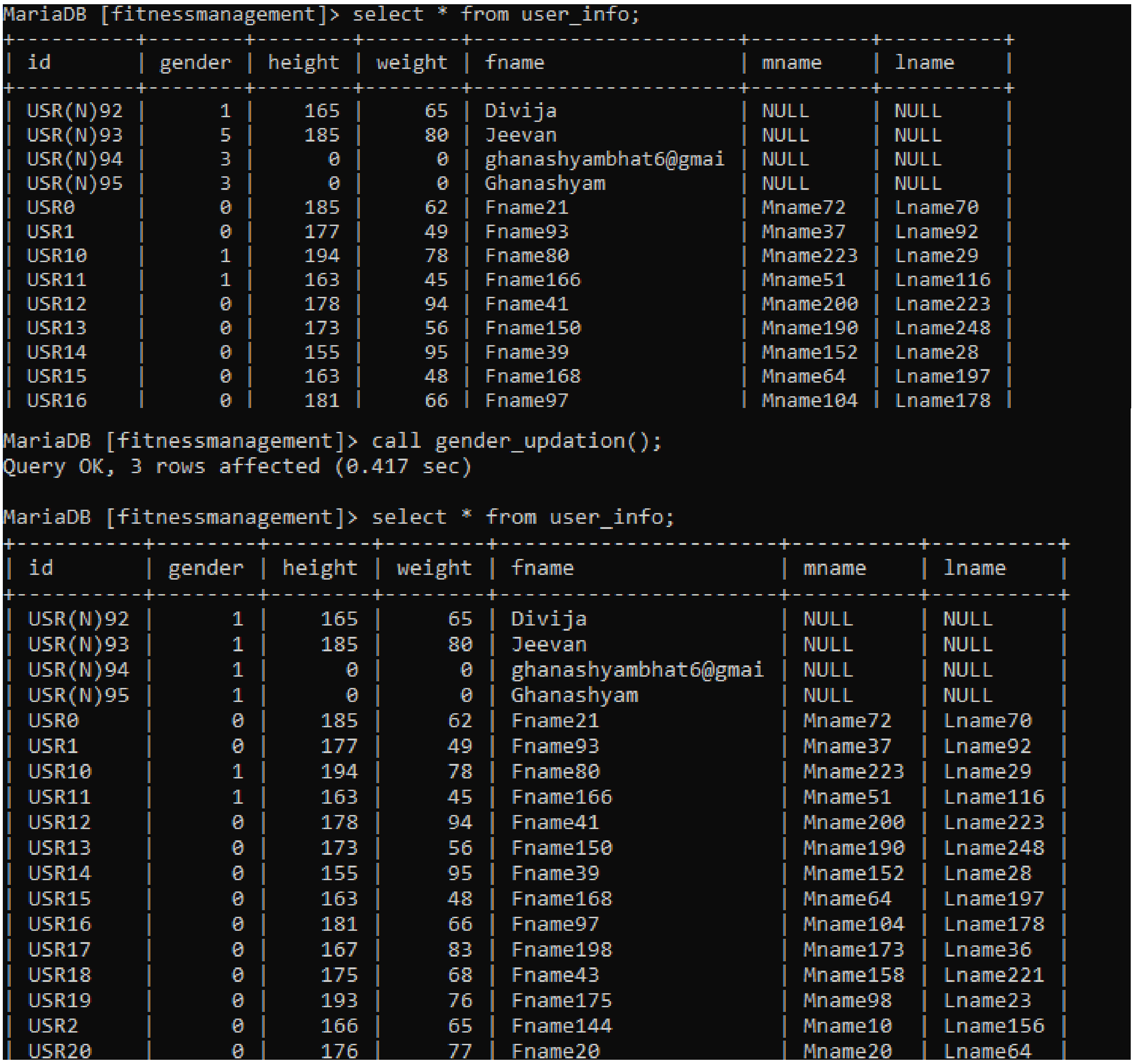
The function takes gender value (INT) as input and returns 1, if the value is greater than 0, otherewise returns 0.

The procedure has been created with this function to make the gender as binary value in the database.

```
DELIMITER $$ ;
CREATE FUNCTION correcting_gender(GENDER1 INT)
RETURNS INT
DETERMINISTIC
BEGIN
   DECLARE gender INT;
   SET gender = GENDER1 ;
   IF gender > 0 THEN
   SET gender = 1;
   ELSE
   SET gender = 0;
   END IF;
   RETURN gender;

END; $$
DELIMITER ;


DELIMITER $$
```



```
CREATE procedure gender_updation()
BEGIN
UPDATE user_info
SET gender = correcting_gender(gender);
END;$$
DELIMITER ;
```



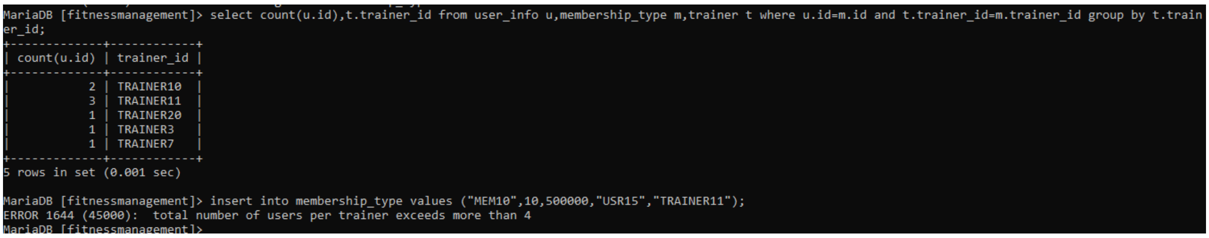
```
MariaDB [fitnessmanagement]> select * from user_info;
+----------+--------+--------+--------+----------------------+----------+----------+
| id       | gender | height | weight | fname                | mname    | lname    |
+----------+--------+--------+--------+----------------------+----------+----------+
| USR(N)92 |      1 |    165 |     65 | Divija               | NULL     | NULL     |
| USR(N)93 |      5 |    185 |     80 | Jeevan               | NULL     | NULL     |
| USR(N)94 |      3 |      0 |      0 | ghanashyambhat6@gmai | NULL     | NULL     |
| USR(N)95 |      3 |      0 |      0 | Ghanashyam           | NULL     | NULL     |
| USR0     |      0 |    185 |     62 | Fname21              | Mname72  | Lname70  |
| USR1     |      0 |    177 |     49 | Fname93              | Mname37  | Lname92  |
| USR10    |      1 |    194 |     78 | Fname80              | Mname223 | Lname29  |
| USR11    |      1 |    163 |     45 | Fname166             | Mname51  | Lname116 |
| USR12    |      0 |    178 |     94 | Fname41              | Mname200 | Lname223 |
| USR13    |      0 |    173 |     56 | Fname150             | Mname190 | Lname248 |
| USR14    |      0 |    155 |     95 | Fname39              | Mname152 | Lname28  |
| USR15    |      0 |    163 |     48 | Fname168             | Mname64  | Lname197 |
| USR16    |      0 |    181 |     66 | Fname97              | Mname104 | Lname178 |

MariaDB [fitnessmanagement]> call gender_updation();
Query OK, 3 rows affected (0.417 sec)

MariaDB [fitnessmanagement]> select * from user_info;
+----------+--------+--------+--------+----------------------+----------+----------+
| id       | gender | height | weight | fname                | mname    | lname    |
+----------+--------+--------+--------+----------------------+----------+----------+
| USR(N)92 |      1 |    165 |     65 | Divija               | NULL     | NULL     |
| USR(N)93 |      1 |    185 |     80 | Jeevan               | NULL     | NULL     |
| USR(N)94 |      1 |      0 |      0 | ghanashyambhat6@gmai | NULL     | NULL     |
| USR(N)95 |      1 |      0 |      0 | Ghanashyam           | NULL     | NULL     |
| USR0     |      0 |    185 |     62 | Fname21              | Mname72  | Lname70  |
| USR1     |      0 |    177 |     49 | Fname93              | Mname37  | Lname92  |
| USR10    |      1 |    194 |     78 | Fname80              | Mname223 | Lname29  |
| USR11    |      1 |    163 |     45 | Fname166             | Mname51  | Lname116 |
| USR12    |      0 |    178 |     94 | Fname41              | Mname200 | Lname223 |
| USR13    |      0 |    173 |     56 | Fname150             | Mname190 | Lname248 |
| USR14    |      0 |    155 |     95 | Fname39              | Mname152 | Lname28  |
| USR15    |      0 |    163 |     48 | Fname168             | Mname64  | Lname197 |
| USR16    |      0 |    181 |     66 | Fname97              | Mname104 | Lname178 |
| USR17    |      0 |    167 |     83 | Fname198             | Mname173 | Lname36  |
| USR18    |      0 |    175 |     68 | Fname43              | Mname158 | Lname221 |
| USR19    |      0 |    193 |     76 | Fname175             | Mname98  | Lname23  |
| USR2     |      0 |    166 |     65 | Fname144             | Mname10  | Lname156 |
| USR20    |      0 |    176 |     77 | Fname20              | Mname20  | Lname64  |
```

## Trigger

The trigger here prevent the Trainer from having more than 3 subscribers.

When a new user takes membership, he cannot choose the trainer with already 3 subscribers.

```
DELIMITER $$
CREATE TRIGGER total_no_of_user_per_trainer_exceed_check
BEFORE INSERT
ON membership_type FOR EACH ROW
BEGIN
    DECLARE error_msg VARCHAR(255);
    SET error_msg = (' total number of users per trainer
exceeds more than 3');
    IF (select count(*) from membership_type where
trainer_id=new.trainer_id group by trainer_id) > 2 THEN
    SIGNAL SQLSTATE '45000'
    SET MESSAGE_TEXT = error_msg;
    END IF;
END $$
DELIMITER ;
```



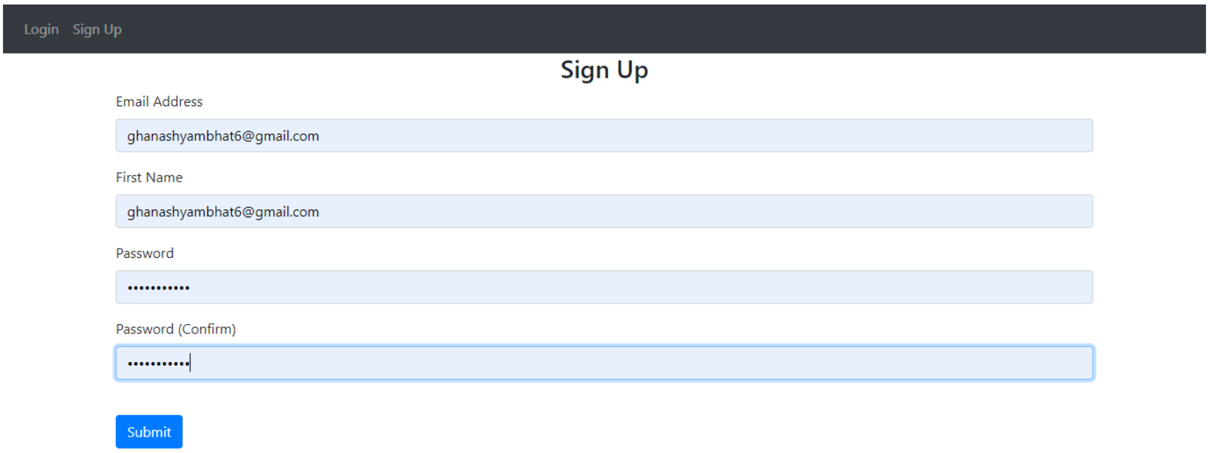
```
MariaDB [fitnessmanagement]> select count(u.id),t.trainer_id from user_info u,membership_type m,trainer t where u.id=m.id and t.trainer_id=m.trainer_id group by t.train
er_id;
+-------------+------------+
| count(u.id) | trainer_id |
+-------------+------------+
|           2 | TRAINER10  |
|           3 | TRAINER11  |
|           1 | TRAINER20  |
|           1 | TRAINER3   |
|           1 | TRAINER7   |
+-------------+------------+
5 rows in set (0.001 sec)

MariaDB [fitnessmanagement]> insert into membership_type values ("MEM10",10,500000,"USR15","TRAINER11");
ERROR 1644 (45000):  total number of users per trainer exceeds more than 4
MariaDB [fitnessmanagement]>
```

## Developing a Frontend

The frontend should support

1. Addition, Modification and Deletion of records from any chosen table

   Addition of data
   When the user signs up, new user will be added to the database. The data like Name, password, email will be stored in the database. New user ID will be allocated to each user on creation of new account.



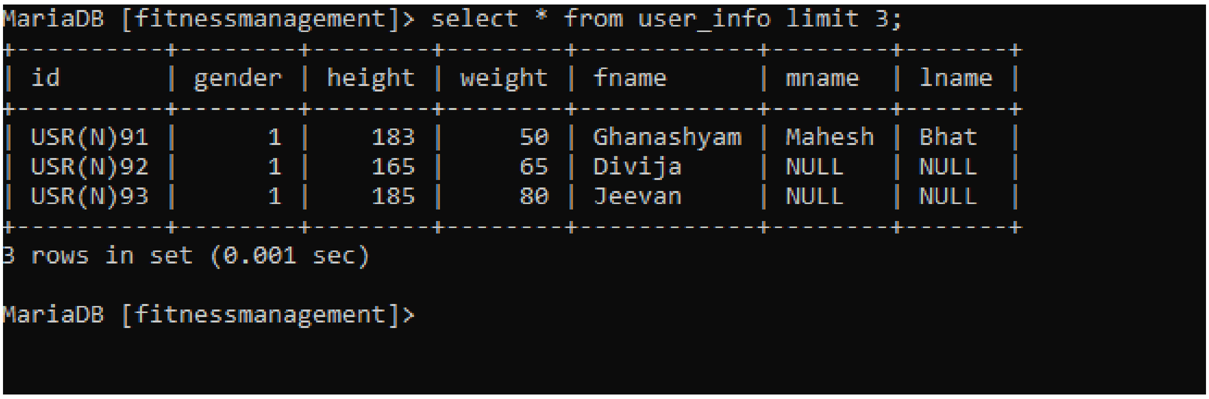
Sign Up

Email Address
ghanashyambhat6@gmail.com

First Name
ghanashyambhat6@gmail.com

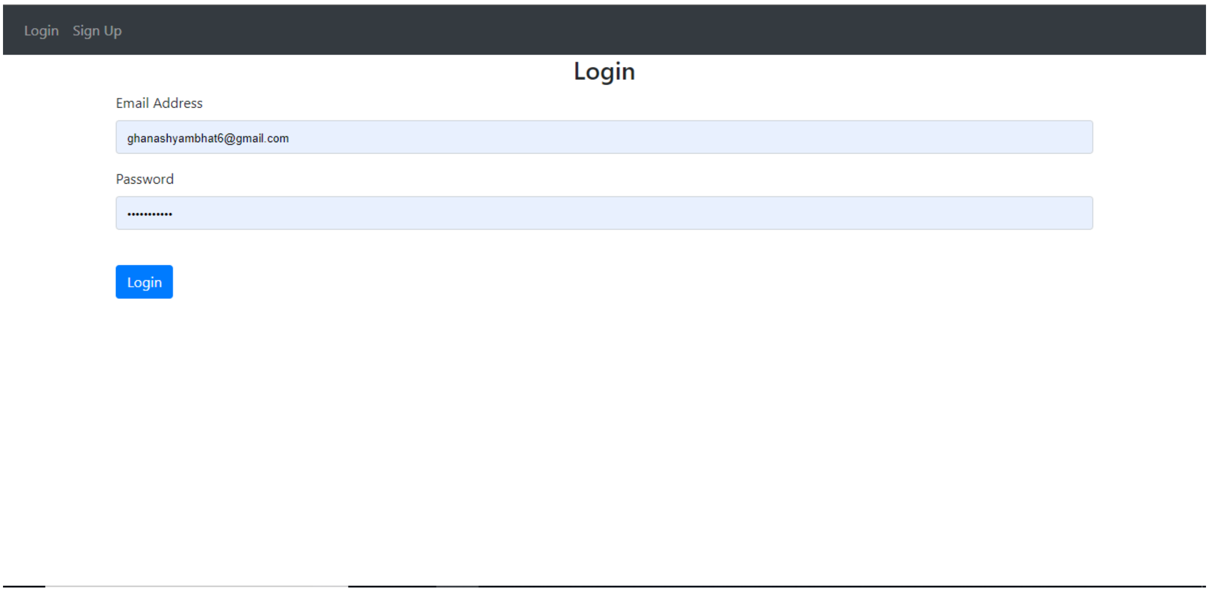
Password
•••••••••••

Password (Confirm)
•••••••••••



```
MariaDB [fitnessmanagement]> select * from user_info limit 3;
+----------+--------+--------+--------+------------+--------+-------+
| id       | gender | height | weight | fname      | mname  | lname |
+----------+--------+--------+--------+------------+--------+-------+
| USR(N)91 |      1 |    183 |     50 | Ghanashyam | Mahesh | Bhat  |
| USR(N)92 |      1 |    165 |     65 | Divija     | NULL   | NULL  |
| USR(N)93 |      1 |    185 |     80 | Jeevan     | NULL   | NULL  |
+----------+--------+--------+--------+------------+--------+-------+
3 rows in set (0.001 sec)

MariaDB [fitnessmanagement]>
```

Fetch Data
The user who already has an account can log in to the account and access all his data by providing the correct password.
The password will be checked with the stored hash in the database and the user will be logged in if it matches.

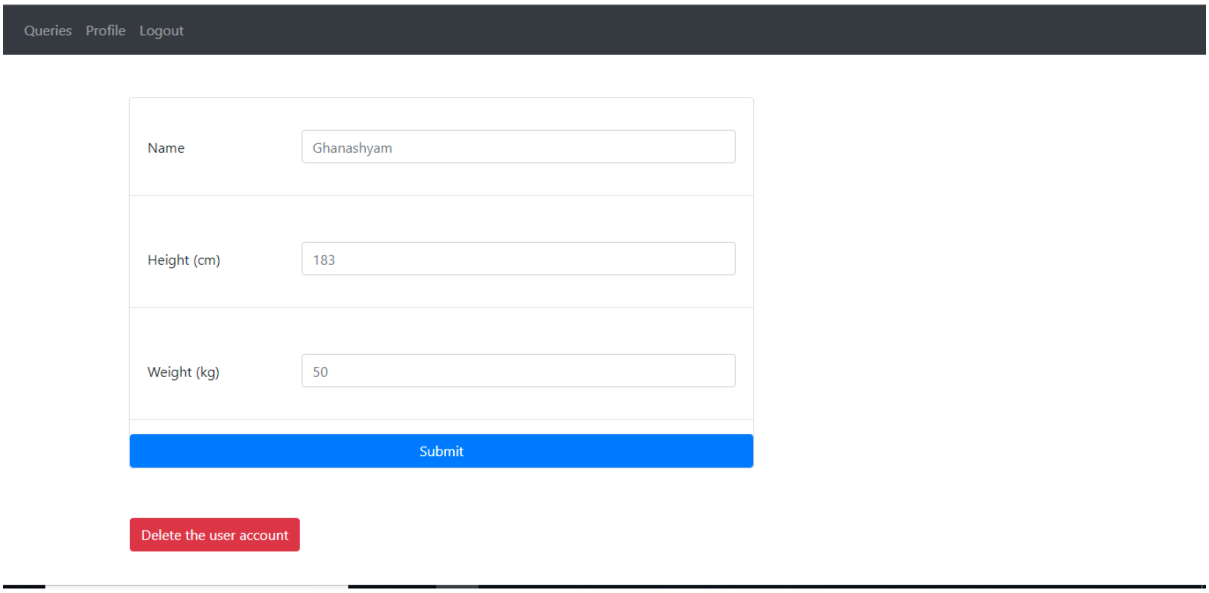


Email Address
ghanashyambhat6@gmail.com

Password
•••••••••••

## Data Modification

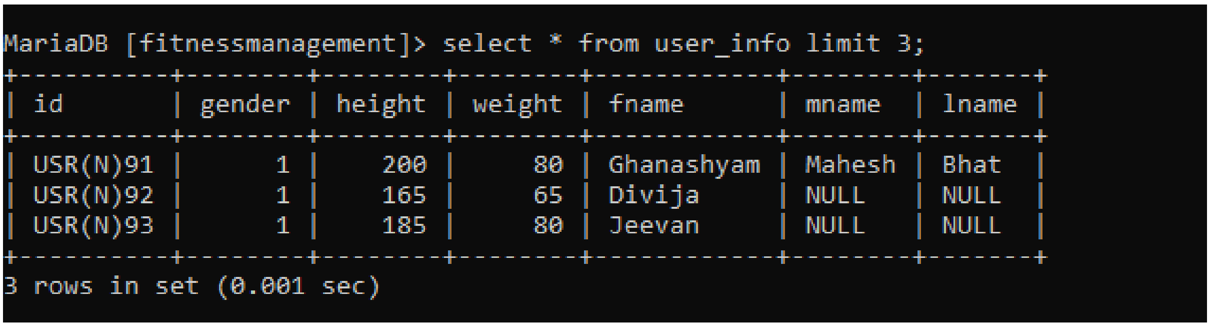
The user can modify his name,height and weight data. On clicking the submit button, the data gets updated.



Name: Ghanashyam

Height (cm): 183

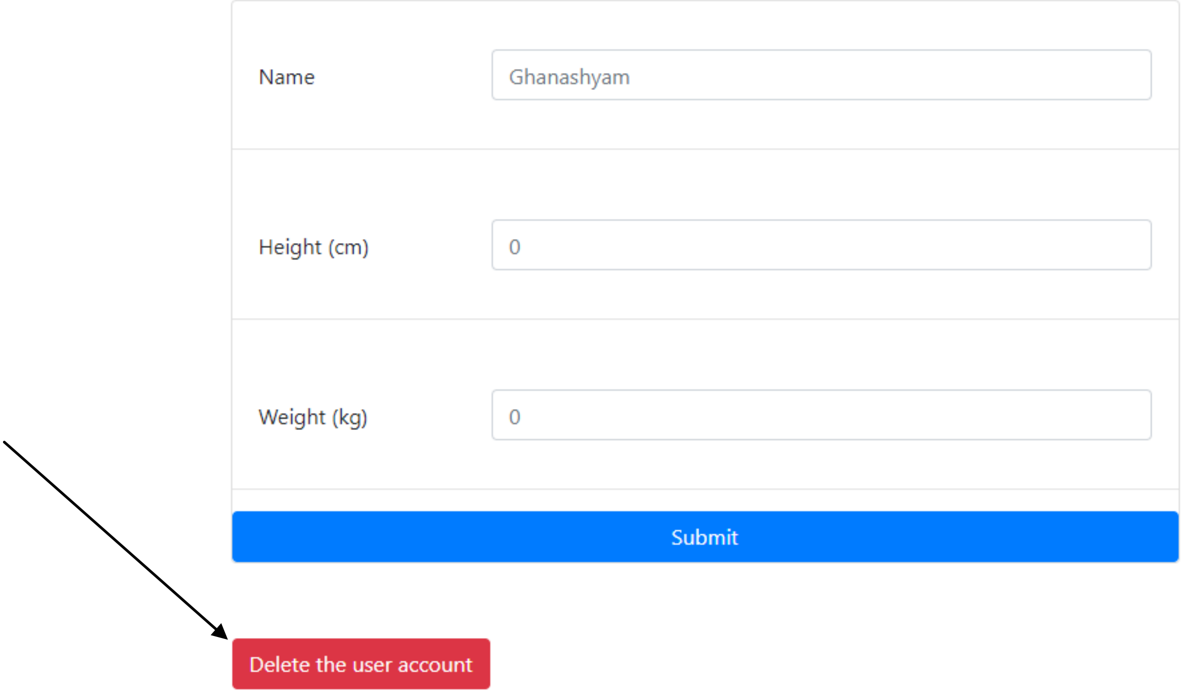
Weight (kg): 50



```
MariaDB [fitnessmanagement]> select * from user_info limit 3;
+----------+--------+--------+--------+------------+--------+-------+
| id       | gender | height | weight | fname      | mname  | lname |
+----------+--------+--------+--------+------------+--------+-------+
| USR(N)91 |      1 |    200 |     80 | Ghanashyam | Mahesh | Bhat  |
| USR(N)92 |      1 |    165 |     65 | Divija     | NULL   | NULL  |
| USR(N)93 |      1 |    185 |     80 | Jeevan     | NULL   | NULL  |
+----------+--------+--------+--------+------------+--------+-------+
3 rows in set (0.001 sec)
```

Delete Data

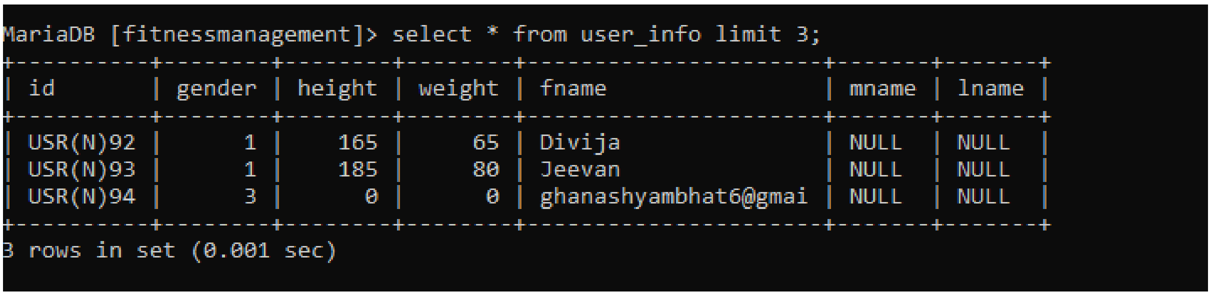
On pressing delete account button, the user account will be deleted from the database and the user cannot login using same account in future.



Name: Ghanashyam

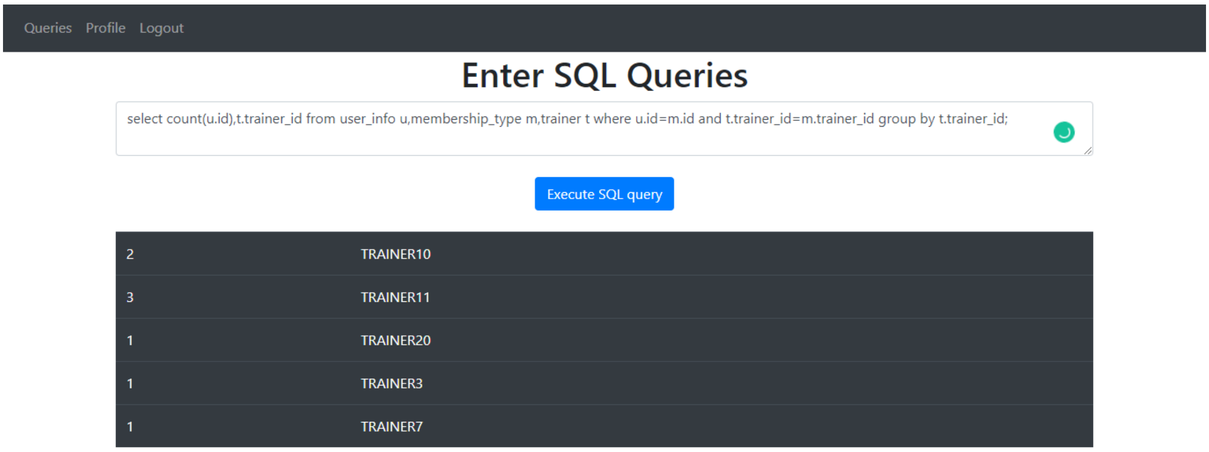
Height (cm): 0

Weight (kg): 0



```
MariaDB [fitnessmanagement]> select * from user_info limit 3;
+----------+--------+--------+--------+----------------------+-------+-------+
| id       | gender | height | weight | fname                | mname | lname |
+----------+--------+--------+--------+----------------------+-------+-------+
| USR(N)92 |      1 |    165 |     65 | Divija               | NULL  | NULL  |
| USR(N)93 |      1 |    185 |     80 | Jeevan               | NULL  | NULL  |
| USR(N)94 |      3 |      0 |      0 | ghanashyambhat6@gmai | NULL  | NULL  |
+----------+--------+--------+--------+----------------------+-------+-------+
3 rows in set (0.001 sec)
```

2. There should be a window to accept and run any SQL statement and display the result



```
select count(u.id),t.trainer_id from user_info u,membership_type m,trainer t where u.id=m.id and t.trainer_id=m.trainer_id group by t.trainer_id;
```

| | |
|---|---|
| 2 | TRAINER10 |
| 3 | TRAINER11 |
| 1 | TRAINER20 |
| 1 | TRAINER3 |
| 1 | TRAINER7 |