



DBMS Mini Project Report

Fitness Management System

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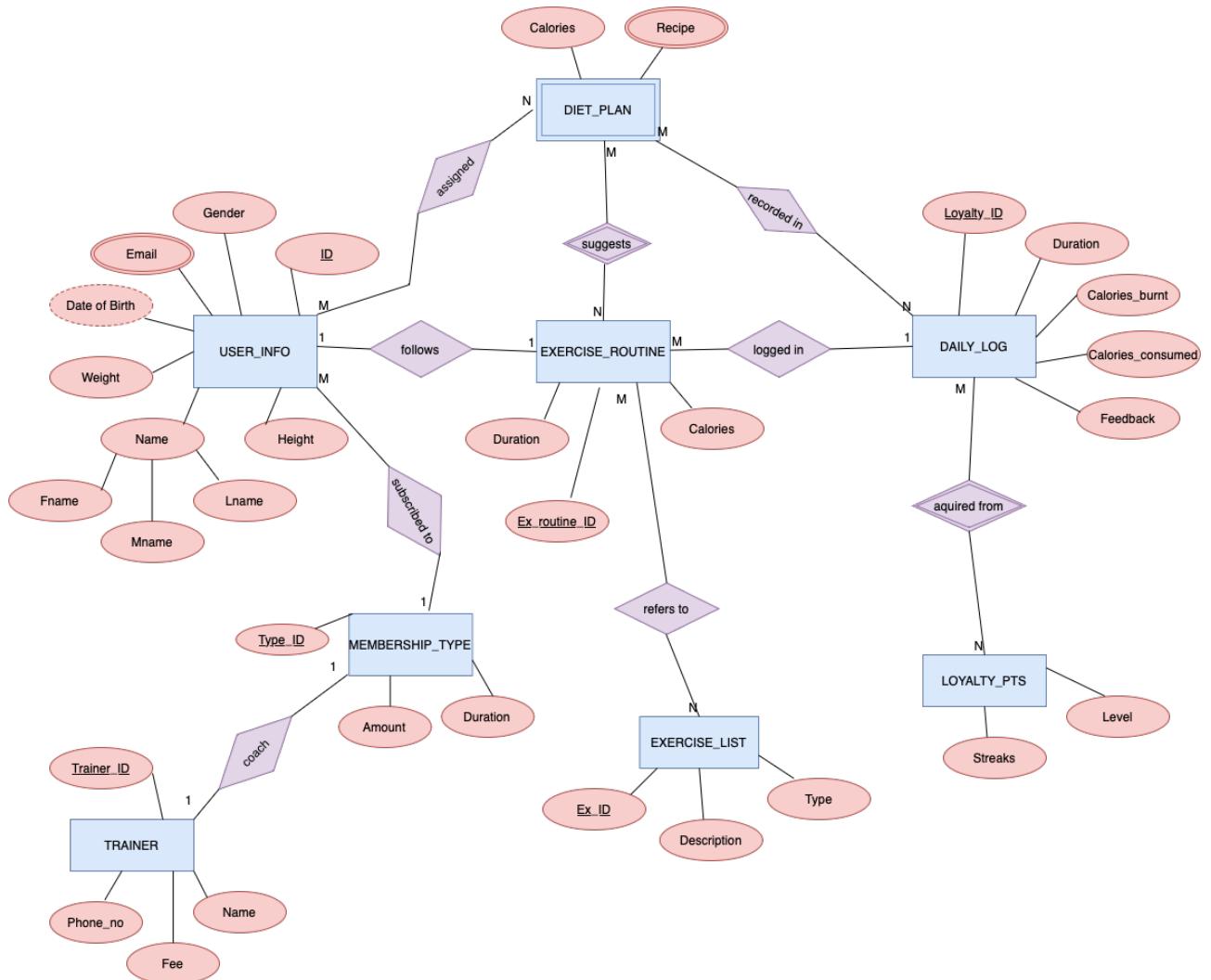
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Abstract

Our project ‘Fitness management system’ utilises MySQL to create a backend to store relevant details of health conscious users, such as their height, weight, age, etc. and track their nutritional checkpoints easily. We strove to provide a seamless user experience, and a database replete with all the information required to allow users to make informed fitness decisions. With a daily log of information that users are encouraged to update every day (using a loyalty point system to award their diligence), the application provides a one-stop-for-all for users monitoring their physical activity, calories, exercises, etc. A simplistic UI allows registered users to query the database efficiently and retrieve data corresponding to their needs. By integrating sql and GUI to create a responsive and intuitive health app, we aim to better our understanding of Relational Database Management Systems and employ them to befit society.

Entity-Relationship Diagram



Relational Schema

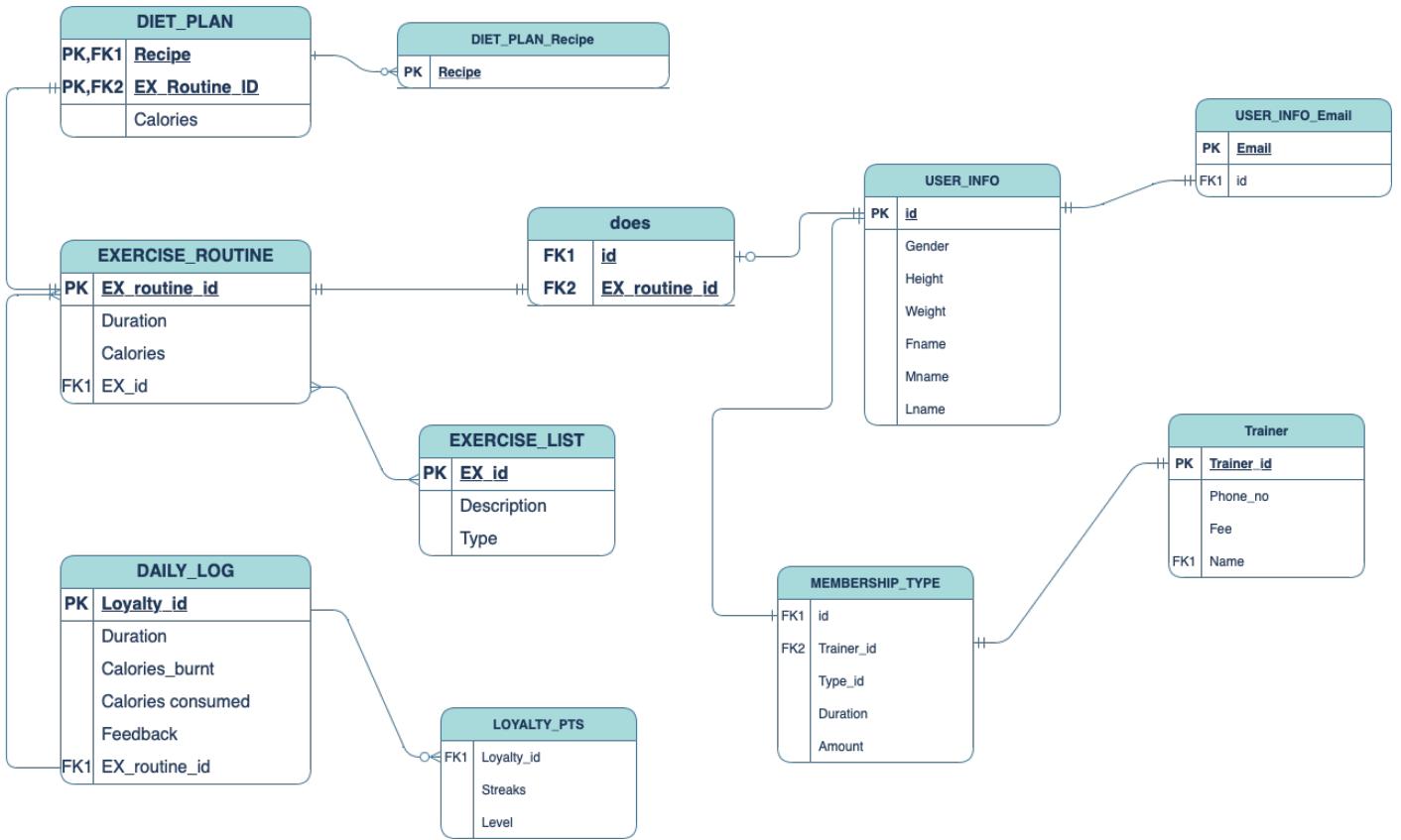


Table Creation Operations:

```
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) DEFAULT 3,
    height int NOT NULL,
    weight int NOT NULL,
    fname varchar(20) NOT NULL,
    mname varchar(20) DEFAULT NULL,
    lname varchar(20) DEFAULT NULL,
    age int,
    bmi int
);

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
);
```

More DDL commands

```
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);
```

Screenshots

| Table | Action | Rows | Type | Collation | Size | Overhead |
|------------------|---|-------|--------|--------------------|-----------|----------|
| daily_log | ★ Browse Structure Search Insert Empty Drop | 400 | InnoDB | utf8mb4_general_ci | 80.0 KiB | - |
| diet_plan | ★ Browse Structure Search Insert Empty Drop | 300 | InnoDB | utf8mb4_general_ci | 80.0 KiB | - |
| diet_plan_recipe | ★ Browse Structure Search Insert Empty Drop | 81 | InnoDB | utf8mb4_general_ci | 32.0 KiB | - |
| does | ★ Browse Structure Search Insert Empty Drop | 60 | InnoDB | utf8mb4_general_ci | 48.0 KiB | - |
| exercise_list | ★ Browse Structure Search Insert Empty Drop | 151 | InnoDB | utf8mb4_general_ci | 16.0 KiB | - |
| exercise_routine | ★ Browse Structure Search Insert Empty Drop | 200 | InnoDB | utf8mb4_general_ci | 32.0 KiB | - |
| loyalty_pts | ★ Browse Structure Search Insert Empty Drop | 50 | InnoDB | utf8mb4_general_ci | 32.0 KiB | - |
| membership_type | ★ Browse Structure Search Insert Empty Drop | 6 | InnoDB | utf8mb4_general_ci | 48.0 KiB | - |
| trainer | ★ Browse Structure Search Insert Empty Drop | 30 | InnoDB | utf8mb4_general_ci | 16.0 KiB | - |
| user | ★ Browse Structure Search Insert Empty Drop | 2 | InnoDB | utf8mb4_general_ci | 32.0 KiB | - |
| user_info | ★ Browse Structure Search Insert Empty Drop | 93 | InnoDB | utf8mb4_general_ci | 16.0 KiB | - |
| user_info_email | ★ Browse Structure Search Insert Empty Drop | 63 | InnoDB | utf8mb4_general_ci | 32.0 KiB | - |
| 12 tables | Sum | 1,436 | InnoDB | utf8mb4_general_ci | 464.0 KiB | 0 B |

```
[mysql] > show tables;
+-----+
| Tables_in_fitness |
+-----+
| daily_log          |
| diet_plan          |
| diet_plan_recipe   |
| does               |
| exercise_list      |
| exercise_routine   |
| loyalty_pts        |
| membership_type    |
| trainer             |
| user                |
| user_info           |
| user_info_email     |
+-----+
12 rows in set (0.00 sec)
```

```

mysql> DESC daily_log;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| loyalty_id | varchar(20) | NO | PRI | NULL | 
| duration | int | NO | | NULL | 
| calories_burnt | int | YES | | NULL | 
| calories_consumed | int | YES | | NULL | 
| feedback | varchar(20) | YES | | NULL | 
| ex_routine_id | varchar(20) | NO | MUL | NULL | 
+-----+-----+-----+-----+-----+
6 rows in set (0.01 sec)

mysql> DESC diet_plan;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| ex_id | varchar(20) | NO | MUL | NULL | 
| recipe | varchar(30) | YES | MUL | NULL | 
| calories | int | YES | | NULL | 
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> DESC diet_plan_recipe;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| recipe | varchar(30) | YES | MUL | NULL | 
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> 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 (0.01 sec)

mysql> 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 (0.00 sec)

mysql> DESC exercise_routine;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| ex_routine_id | varchar(20) | NO | PRI | NULL | 
| duration | int | NO | | NULL | 
| calories | int | YES | | NULL | 
| ex_id | varchar(20) | NO | MUL | NULL | 
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

```

```

mysql> DESC loyalty_pts;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| loyalty_id | varchar(20) | NO | MUL | NULL |      |
| level | int | NO |      | NULL |      |
| streaks | int | NO |      | 0 |      |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> DESC membership_type;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| type_id | varchar(20) | NO | PRI | NULL |      |
| duration | int | 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 (0.00 sec)

mysql> DESC trainer;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| trainer_id | varchar(20) | NO | PRI | NULL |      |
| phoneno | varchar(20) | NO |      | NULL |      |
| amount | decimal(10,2) | NO |      | NULL |      |
| name | varchar(20) | NO |      | NULL |      |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> DESC user;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| id | int | NO | PRI | NULL | auto_increment |
| email | varchar(150) | YES | UNI | NULL |      |
| password | varchar(150) | YES |      | NULL |      |
| first_name | varchar(150) | YES |      | NULL |      |
| Userid | varchar(150) | YES |      | NULL |      |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> DESC user_info;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| id | varchar(20) | NO | PRI | NULL |      |
| gender | int | NO |      | NULL |      |
| height | int | NO |      | NULL |      |
| weight | int | NO |      | NULL |      |
| fname | varchar(20) | NO |      | NULL |      |
| mname | varchar(20) | YES |      | NULL |      |
| lname | varchar(20) | YES |      | NULL |      |
| age | int | YES |      | NULL |      |
| bmi | int | YES |      | NULL |      |
+-----+-----+-----+-----+-----+
9 rows in set (0.00 sec)

```

DML commands

```
DROP VIEW IF EXISTS completeuserinfo;
DROP VIEW IF EXISTS loyalty_pts_feedback;
DROP VIEW IF EXISTS exercise_routine_dailylog;
DROP VIEW IF EXISTS exercise_routine_fname;
DROP VIEW IF EXISTS no_of_user_per_trainer;
DROP VIEW IF EXISTS userid_of_trainer_3and7;
DROP VIEW IF EXISTS user_level;

-- natural join
create view completeuserinfo as select * from user_info ui
natural join user_info_email;
select * from completeuserinfo;

-- join operation

create view loyalty_pts_feedback as select
dl.loyalty_id,feedback from daily_log dl join loyalty_pts lp
on dl.loyalty_id = lp.loyalty_id;
select* from loyalty_pts_feedback;

-- 2 more examples for join
create view exercise_routine_dailylog as select * from
exercise_routine natural join daily_log;
select * from exercise_routine_dailylog;

create view exercise_routine_fname as select
d.ex_routine_id,ui.fname from user_info ui join does d on
d.id = ui.id;
select * from exercise_routine_fname;

-- aggregate function
create view no_of_user_per_trainer as select
trainer_id,count(*) as no_of_user_per_trainer from
membership_type group by trainer_id;
```

```
mysql> DESC user_info_email;
+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+
| id   | varchar(30) | NO   | PRI | NULL    |       |
| email | varchar(30) | NO   | PRI | NULL    |       |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```

select * from no_of_user_per_trainer;

select max(calories_burnt) from exercise_routine_dailylog;

select min(calories_consumed) from exercise_routine_dailylog;

select avg(calories_burnt) as calories_burnt,duration from
exercise_routine_dailylog group by duration;
-- set operator
create view userid_of_trainer_3and7 as select id from
membership_type where trainer_id = "TRAINER3" union select id
from membership_type where trainer_id = "TRAINER7";

-- nested queries

select fname from exercise_routine_fname where
ex_routine_id="EX_routine52" and exists (select fname from
exercise_routine_fname where ex_routine_id="EX_routine93");

select fname from exercise_routine_fname where
ex_routine_id="EX_routine39" and exists (select fname from
exercise_routine_fname where ex_routine_id="EX_routine29");

(select ex_id from exercise_routine where
ex_routine_id="EX_routine52") union (select ex_id from
exercise_routine where ex_routine_id="EX_routine93");

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;

insert into membership_type values
("MEM6",3,5955.00,"USR79","TRAINER11");

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;

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 ;

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

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

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;

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
);

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)
);

```

```

mysql> create view completeuserinfo as select * from user_info ui natural join user_info_email;
Query OK, 0 rows affected (0.00 sec)

mysql> select * from completeuserinfo;
+----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| id | gender | height | weight | fname | mname | lname | age | bmi | email |
+----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| USR(N)90 | 1 | 0 | 0 | riya | NULL | NULL | 0 | NULL | riyambansal@gmail.com |
| USR(N)91 | 1 | 165 | 68 | Riya | NULL | NULL | 0 | 25 | riyambansal@gmail.com |
| USR(N)92 | 1 | 180 | 60 | rahul | NULL | NULL | 0 | 19 | rahulrrao2002@gmail.com |
| USR(N)93 | 3 | 0 | 0 | Riya | NULL | NULL | 0 | NULL | riya@yahoo.com |
| USR(N)94 | 3 | 0 | 0 | rohan | NULL | NULL | 0 | NULL | rohan@yahoo.com |
| USR(N)95 | 3 | 0 | 0 | rohan | NULL | NULL | 0 | NULL | rohan@yahoo.com |
| USR(N)96 | 3 | 0 | 0 | rohan | NULL | NULL | 0 | NULL | rohan@yahoo.com |
| USR(N)97 | 3 | 180 | 65 | rohan | NULL | NULL | 27 | NULL | rohan@yahoo.com |
+----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)

mysql> -- join operation
Query OK, 0 rows affected (0.00 sec)

mysql> create view loyalty_pts_feedback as select dl.loyalty_id,feedback from daily_log dl join loyalty_pts lp on dl.loyalty_id = lp.loyalty_id;
Query OK, 0 rows affected (0.00 sec)

mysql> select* from loyalty_pts_feedback;
+-----+-----+
| loyalty_id | feedback |
+-----+-----+
| LYL101 | Feedback3 |
| LYL104 | Feedback40 |
| LYL110 | Feedback3 |
| LYL113 | Feedback27 |
| LYL117 | Feedback83 |
| LYL118 | Feedback77 |
| LYL121 | Feedback92 |
| LYL126 | Feedback32 |
| LYL170 | Feedback80 |
| LYL177 | Feedback4 |
| LYL180 | Feedback18 |
| LYL183 | Feedback5 |
| LYL184 | Feedback21 |
| LYL185 | Feedback70 |
| LYL185 | Feedback70 |
| LYL186 | Feedback64 |
| LYL188 | Feedback17 |
| LYL193 | Feedback96 |
| LYL195 | Feedback79 |
| LYL206 | Feedback30 |
| LYL206 | Feedback30 |
| LYL208 | Feedback1 |
| LYL209 | Feedback95 |
| LYL210 | Feedback16 |
| LYL219 | Feedback62 |
| LYL221 | Feedback94 |
| LYL224 | Feedback67 |
| LYL229 | Feedback28 |
| LYL238 | Feedback92 |
| LYL239 | Feedback89 |
| LYL261 | Feedback52 |
| LYL276 | Feedback25 |
| LYL286 | Feedback57 |
| LYL293 | Feedback46 |
| LYL297 | Feedback74 |
| LYL35 | Feedback25 |
+-----+-----+

```

```

mysql> -- aggregate function
Query OK, 0 rows affected (0.00 sec)

mysql> create view no_of_user_per_trainer as select trainer_id,count(*) as no_of_user_per_trainer from membership_type group by trainer_id;
Query OK, 0 rows affected (0.00 sec)

mysql> select * from no_of_user_per_trainer;
+-----+-----+
| trainer_id | no_of_user_per_trainer |
+-----+-----+
| TRAINER10 | 1 |
| TRAINER11 | 2 |
| TRAINER12 | 1 |
| TRAINER20 | 1 |
| TRAINER6 | 1 |
+-----+-----+
5 rows in set (0.01 sec)

mysql>
mysql> select max(calories_burnt) from exercise_routine_dailylog;
+-----+
| max(calories_burnt) |
+-----+
| 314 |
+-----+
1 row in set (0.00 sec)

mysql>
mysql> select min(calories_consumed) from exercise_routine_dailylog;
+-----+
| min(calories_consumed) |
+-----+
| 1068 |
+-----+
1 row in set (0.00 sec)

mysql>
mysql> select avg(calories_burnt) as calories_burnt,duration from exercise_routine_dailylog group by duration;
+-----+-----+
| calories_burnt | duration |
+-----+-----+
| 314.0000 | 50 |
| 219.0000 | 78 |
| 260.0000 | 65 |
| 188.5000 | 66 |
| 94.0000 | 46 |
| 235.0000 | 45 |
| 273.0000 | 77 |
| 289.0000 | 90 |
| 210.0000 | 55 |
| 191.0000 | 89 |
| 279.0000 | 80 |
| 128.0000 | 87 |
+-----+-----+
12 rows in set (0.00 sec)

```

```

mysql> -- set operator
Query OK, 0 rows affected (0.00 sec)

mysql> create view userid_of_trainer_3and7 as select id from membership_type where trainer_id = "TRAINER3" union select id from membership_type where trainer_id = "TRAINER7";
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> select fname from exercise_routine_fname where ex_routine_id="EX_routine52" and exists (select fname from exercise_routine_fname where ex_routine_id="EX_routine93");
+-----+
| fname   |
+-----+
| Fname10 |
+-----+
1 row in set (0.00 sec)

mysql>
mysql> select fname from exercise_routine_fname where ex_routine_id="EX_routine39" and exists (select fname from exercise_routine_fname where ex_routine_id="EX_routine29");
Empty set (0.00 sec)

mysql>
mysql> (select ex_id from exercise_routine where ex_routine_id="EX_routine52") union (select ex_id from exercise_routine where ex_routine_id="EX_routine93");
+-----+
| ex_id  |
+-----+
| EX_ID66 |
| EX_ID18 |
+-----+
2 rows in set (0.00 sec)

mysql>
mysql>
mysql> 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;
+-----+-----+
| count(u.id) | trainer_id |
+-----+-----+
|      1 | TRAINER6 |
|      1 | TRAINER12 |
|      2 | TRAINER11 |
|      1 | TRAINER20 |
|      1 | TRAINER10 |
+-----+-----+
5 rows in set (0.00 sec)

mysql>
mysql> insert into membership_type values ("MEM6",3,5955.00,"USR79","TRAINER11");
ERROR 1062 (23000): Duplicate entry 'MEM6' for key 'membership_type.PRIMARY'
mysql>
mysql>
mysql> 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  |
+-----+-----+-----+
|    106 |    316 | Recipe20 |
|    110 |    125 | Recipe18 |
|    102 |    182 | Recipe10 |
|    168 |     85 | Recipe16 |
|    320 |    375 | Recipe20 |
|    122 |    271 | Recipe24 |

```

```

mysql> create view exercise_routine_dailylog as select * from exercise_routine natural join daily_log;
Query OK, 0 rows affected (0.00 sec)

mysql> select * from exercise_routine_dailylog;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| ex_routine_id | duration | calories | ex_id | loyalty_id | calories_burnt | calories_consumed | feedback |
+-----+-----+-----+-----+-----+-----+-----+-----+
| EX_routine44 |      50 |     224 | EX_ID84 |    LYL1 |          314 |        1671 | Feedback21 |
| EX_routine27 |      78 |      75 | EX_ID82 |  LYL196 |          219 |        1109 | Feedback47 |
| EX_routine20 |      65 |      97 | EX_ID31 |  LYL224 |          260 |        1346 | Feedback67 |
| EX_routine35 |      66 |     347 | EX_ID106 | LYL251 |          163 |        2027 | Feedback46 |
| EX_routine36 |      46 |     276 | EX_ID98 | LYL275 |          94 |        1603 | Feedback44 |
| EX_routine80 |      45 |     309 | EX_ID115 | LYL28 |          235 |        2083 | Feedback14 |
| EX_routine50 |      77 |      85 | EX_ID103 | LYL291 |          273 |        2418 | Feedback75 |
| EX_routine43 |      90 |     390 | EX_ID18 | LYL321 |          289 |        1068 | Feedback63 |
| EX_routine35 |      66 |     347 | EX_ID106 | LYL329 |          214 |        1474 | Feedback58 |
| EX_routine48 |      55 |     160 | EX_ID3 |  LYL361 |          210 |        1306 | Feedback64 |
| EX_routine77 |      89 |     135 | EX_ID31 | LYL74 |          191 |        2065 | Feedback74 |
| EX_routine38 |      80 |      63 | EX_ID9 |  LYL75 |          279 |        1854 | Feedback23 |
| EX_routine22 |      87 |     286 | EX_ID83 |  LYL93 |          128 |        2481 | Feedback54 |
+-----+-----+-----+-----+-----+-----+-----+-----+
13 rows in set (0.01 sec)

mysql>
mysql> create view exercise_routine_fname as select d.ex_routine_id,ui.fname from user_info ui join does d on d.id = ui.id;
Query OK, 0 rows affected (0.00 sec)

mysql> select * from exercise_routine_fname;
+-----+-----+
| ex_routine_id | fname |
+-----+-----+
| EX_routine60 | Fname68 |
| EX_routine23 | Fname200 |
| EX_routine55 | Fname200 |
| EX_routine72 | Fname200 |
| EX_routine65 | Fname59 |
| EX_routine24 | Fname2 |
| EX_routine30 | Fname2 |
| EX_routine20 | Fname155 |
| EX_routine89 | Fname155 |
| EX_routine68 | Fname50 |
| EX_routine93 | Fname121 |
| EX_routine31 | Fname98 |
| EX_routine35 | Fname98 |
| EX_routine67 | Fname163 |
| EX_routine93 | Fname163 |
| EX_routine37 | Fname76 |
| EX_routine40 | Fname76 |
| EX_routine54 | Fname91 |
| EX_routine70 | Fname173 |
| EX_routine16 | Fname149 |
| EX_routine39 | Fname149 |
| EX_routine67 | Fname149 |
| EX_routine44 | Fname68 |
| EX_routine46 | Fname68 |
| EX_routine49 | Fname145 |
| EX_routine74 | Fname133 |
| EX_routine22 | Fname5 |
| EX_routine16 | Fname174 |
| EX_routine38 | Fname174 |
| EX_routine55 | Fname174 |
| EX_routine95 | Fname121 |
+-----+-----+

```

```

mysql> 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 |
+-----+-----+-----+-----+-----+-----+
| USR71 | Fname9 | TRAINER6   | TrainerName11 | 2 | MEM0   |
| USR60 | Fname175 | TRAINER12  | TrainerName7  | 9 | MEM1   |
| USR53 | Fname63  | TRAINER11  | TrainerName35 | 5 | MEM2   |
| USR16 | Fname76  | TRAINER20  | TrainerName30 | 2 | MEM3   |
| USR53 | Fname63  | TRAINER10  | TrainerName15 | 2 | MEM4   |
| USR79 | Fname42  | TRAINER11  | TrainerName35 | 3 | MEM6   |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql>
mysql> select avg(calories_burnt),avg(calories_consumed),avg(duration) from daily_log;
+-----+-----+-----+
| avg(calories_burnt) | avg(calories_consumed) | avg(duration) |
+-----+-----+-----+
| 204.3525 | 1736.8775 | 64.7775 |
+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
mysql> SELECT trainer_id from trainer
--> EXCEPT (SELECT trainer_id from membership_type);
+-----+
| trainer_id |
+-----+
| TRAINER0 |
| TRAINER1 |
| TRAINER13 |
| TRAINER14 |
| TRAINER15 |
| TRAINER16 |
| TRAINER17 |
| TRAINER18 |
| TRAINER19 |
| TRAINER2 |
| TRAINER21 |
| TRAINER22 |
| TRAINER23 |
| TRAINER24 |
| TRAINER25 |
| TRAINER26 |
| TRAINER27 |
| TRAINER28 |
| TRAINER29 |
| TRAINER3 |
| TRAINER4 |
| TRAINER5 |
| TRAINER7 |
| TRAINER8 |
| TRAINER9 |
+-----+
25 rows in set (0.00 sec)

```

```

mysql> 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 (0.00 sec)

mysql> 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 |
+-----+-----+
| TrainerName11 | 1528.00 |
| TrainerName7 | 3952.00 |
| TrainerName30 | 2694.00 |
| TrainerName15 | 4093.00 |
+-----+-----+
4 rows in set (0.01 sec)

```

Procedures and Functions

```
-- Correcting Gender
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 ;
```

```
-- BMI calculation function
DELIMITER $$

CREATE FUNCTION bmi_cal(height INT, weight INT)
RETURNS FLOAT
DETERMINISTIC
BEGIN
    DECLARE BMI FLOAT;
    SET BMI = weight / POWER((height / 100), 2);
    RETURN BMI;
END $$

DELIMITER ;
```

```
-- BMI calculation procedure
DELIMITER $$

CREATE PROCEDURE bmi_updation()
BEGIN
    UPDATE user_info
    SET bmi = bmi_cal(user_info.height, user_info.weight);
END $$

DELIMITER ;
```

```
call gender_updation();
call bmi_updation();
```

```
SELECT
    routine_name
FROM
    information_schema.routines
WHERE
```

```
routine_type = 'procedures';
```

| id | gender | height | weight | fname | mname | lname | age | bmi |
|----------|--------|--------|--------|----------|----------|----------|-----|-----|
| USR(N)91 | 1 | 165 | 68 | Riya | NULL | NULL | 0 | 25 |
| USR(N)92 | 1 | 180 | 60 | rahul | NULL | NULL | 0 | 19 |
| USR(N)97 | 1 | 180 | 65 | rohan | NULL | NULL | 27 | 20 |
| USR0 | 1 | 168 | 64 | Fname180 | Mname227 | Lname99 | 0 | 23 |
| USR1 | 1 | 171 | 81 | Fname139 | Mname245 | Lname49 | 0 | 28 |
| USR10 | 1 | 180 | 48 | Fname170 | Mname235 | Lname219 | 0 | 15 |
| USR11 | 1 | 155 | 45 | Fname59 | Mname47 | Lname211 | 0 | 19 |
| USR12 | 0 | 162 | 95 | Fname15 | Mname213 | Lname79 | 0 | 36 |
| USR13 | 1 | 151 | 80 | Fname165 | Mname89 | Lname225 | 0 | 35 |
| USR14 | 1 | 193 | 81 | Fname198 | Mname180 | Lname94 | 0 | 22 |
| USR15 | 1 | 182 | 66 | Fname167 | Mname172 | Lname184 | 0 | 20 |
| USR16 | 0 | 191 | 56 | Fname76 | Mname245 | Lname86 | 0 | 15 |
| USR17 | 0 | 168 | 48 | Fname68 | Mname232 | Lname205 | 0 | 17 |
| USR18 | 1 | 158 | 59 | Fname46 | Mname208 | Lname52 | 0 | 24 |
| USR19 | 1 | 161 | 60 | Fname200 | Mname8 | Lname60 | 0 | 23 |
| USR2 | 0 | 151 | 82 | Fname44 | Mname45 | Lname44 | 0 | 36 |
| USR20 | 1 | 195 | 72 | Fname173 | Mname9 | Lname113 | 0 | 19 |
| USR21 | 1 | 177 | 50 | Fname59 | Mname103 | Lname178 | 0 | 16 |
| USR22 | 1 | 193 | 45 | Fname2 | Mname15 | Lname98 | 0 | 12 |
| USR23 | 1 | 176 | 76 | Fname35 | Mname188 | Lname106 | 0 | 25 |
| USR24 | 0 | 154 | 82 | Fname155 | Mname198 | Lname74 | 0 | 35 |
| USR25 | 1 | 188 | 93 | Fname50 | Mname20 | Lname127 | 0 | 26 |
| USR26 | 0 | 163 | 86 | Fname173 | Mname163 | Lname67 | 0 | 32 |
| USR27 | 1 | 193 | 64 | Fname50 | Mname86 | Lname234 | 0 | 17 |
| USR28 | 1 | 159 | 79 | Fname96 | Mname181 | Lname178 | 0 | 31 |
| USR29 | 0 | 183 | 62 | Fname121 | Mname173 | Lname164 | 0 | 19 |
| USR3 | 1 | 174 | 83 | Fname139 | Mname215 | Lname37 | 0 | 27 |
| USR30 | 1 | 152 | 68 | Fname98 | Mname192 | Lname209 | 0 | 29 |
| USR31 | 1 | 190 | 84 | Fname43 | Mname80 | Lname205 | 0 | 23 |
| USR32 | 1 | 176 | 67 | Fname177 | Mname142 | Lname201 | 0 | 22 |
| USR33 | 1 | 163 | 67 | Fname163 | Mname100 | Lname65 | 0 | 25 |
| USR34 | 0 | 170 | 90 | Fname76 | Mname211 | Lname149 | 0 | 31 |
| USR35 | 1 | 165 | 52 | Fname91 | Mname172 | Lname23 | 0 | 19 |
| USR36 | 1 | 194 | 76 | Fname35 | Mname140 | Lname23 | 0 | 20 |
| USR37 | 1 | 167 | 63 | Fname89 | Mname227 | Lname145 | 0 | 23 |
| USR38 | 1 | 158 | 90 | Fname129 | Mname46 | Lname207 | 0 | 36 |
| USR39 | 0 | 167 | 85 | Fname173 | Mname140 | Lname204 | 0 | 30 |
| USR4 | 0 | 193 | 75 | Fname60 | Mname91 | Lname182 | 0 | 20 |
| USR40 | 1 | 175 | 59 | Fname7 | Mname108 | Lname136 | 0 | 19 |
| USR41 | 1 | 186 | 52 | Fname149 | Mname148 | Lname174 | 0 | 15 |
| USR42 | 1 | 189 | 75 | Fname68 | Mname120 | Lname59 | 0 | 21 |
| USR43 | 1 | 151 | 93 | Fname173 | Mname227 | Lname219 | 0 | 41 |
| USR44 | 1 | 190 | 93 | Fname145 | Mname64 | Lname132 | 0 | 26 |

| SHOW PROCEDURE STATUS WHERE Db = 'fitness'; | | | | | | | | | | | | |
|---|-----------------|-----------|----------|----------------|---------------------|---------------------|---------------|---------|----------------------|----------------------|--------------------|-----------|
| Db | Name | Type | Language | Definer | Modified | Created | Security_type | Comment | character_set_client | collation_connection | Database | Collation |
| fitness | bmi_updation | PROCEDURE | SQL | root@localhost | 2023-11-22 21:23:04 | 2023-11-22 21:23:04 | DEFINER | | utf8mb4 | utf8mb4_0900_ai_ci | utf8mb4_0900_ai_ci | |
| fitness | gender_updation | PROCEDURE | SQL | root@localhost | 2023-11-22 21:23:04 | 2023-11-22 21:23:04 | DEFINER | | utf8mb4 | utf8mb4_0900_ai_ci | utf8mb4_0900_ai_ci | |

Triggers

```
DELIMITER $$  
CREATE TRIGGER total_no_of_user_per_trainer_exceed_check  
BEFORE INSERT  
ON membership_type FOR EACH ROW  
BEGIN  
    DECLARE user_count INT;  
    SET user_count = (SELECT COUNT(*) FROM membership_type WHERE trainer_id =  
NEW.trainer_id);  
  
    IF user_count > 4 THEN  
        SIGNAL SQLSTATE '45000'  
        SET MESSAGE_TEXT = 'Total number of users per trainer exceeds more than 4';  
    END IF;  
END $$  
DELIMITER ;  
  
  
-- try  
INSERT INTO `membership_type` (`type_id`, `duration`, `amount`, `id`, `trainer_id`) VALUES  
('MEM12', 11, 3567, 'USR71', 'TRAINER20'),  
('MEM13', 11, 9752, 'USR54', 'TRAINER20'),  
('MEM14', 8, 2500, 'USR28', 'TRAINER20'),  
('MEM15', 12, 4800, 'USR63', 'TRAINER20'),  
('MEM16', 6, 1800, 'USR42', 'TRAINER20');
```

```
mysql> DELIMITER $$  
mysql> CREATE TRIGGER total_no_of_user_per_trainer_exceed_check  
-> BEFORE INSERT  
-> ON membership_type FOR EACH ROW  
-> BEGIN  
->     DECLARE user_count INT;  
->     SET user_count = (SELECT COUNT(*) FROM membership_type WHERE trainer_id = NEW.trainer_id);  
->  
->     IF user_count > 4 THEN  
->         SIGNAL SQLSTATE '45000'  
->         SET MESSAGE_TEXT = 'Total number of users per trainer exceeds more than 4';  
->     END IF;  
-> END $$  
Query OK, 0 rows affected (0.02 sec)  
  
mysql> DELIMITER ;  
mysql>  
mysql>  
mysql>  
mysql> -- try  
Query OK, 0 rows affected (0.00 sec)  
  
mysql> INSERT INTO `membership_type` (`type_id`, `duration`, `amount`, `id`, `trainer_id`) VALUES  
-> ('MEM12', 11, 3567, 'USR71', 'TRAINER20'),  
-> ('MEM13', 11, 9752, 'USR54', 'TRAINER20'),  
-> ('MEM14', 8, 2500, 'USR28', 'TRAINER20'),  
-> ('MEM15', 12, 4800, 'USR63', 'TRAINER20'),  
-> ('MEM16', 6, 1800, 'USR42', 'TRAINER20');  
ERROR 1644 (45000): Total number of users per trainer exceeds more than 4  
mysql> █
```

Frontend screenshots

```
Last login: Thu Nov 23 13:40:54 on ttys000
[riya@Riyas-MacBook-Air website % export FLASK_APP='__init__':
[riya@Riyas-MacBook-Air website % flask run
 * Serving Flask app '__init__':
 * Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
 * Running on http://127.0.0.1:5000
Press CTRL+C to quit
User loader: <class 'NoneType'>
User loader: <class 'NoneType'>
127.0.0.1 - - [23/Nov/2023 13:42:22] "GET / HTTP/1.1" 302 -
User loader: <class 'NoneType'>
User loader: <class 'NoneType'>
127.0.0.1 - - [23/Nov/2023 13:42:22] "GET /login?next=/ HTTP/1.1" 200 -
User loader: <class 'NoneType'>
User loader: <class 'NoneType'>
127.0.0.1 - - [23/Nov/2023 13:42:28] "POST /login?next=/ HTTP/1.1" 200 -
User loader: <class 'NoneType'>
User loader: <class 'NoneType'>
127.0.0.1 - - [23/Nov/2023 13:42:31] "POST /login?next=/ HTTP/1.1" 200 -
127.0.0.1 - - [23/Nov/2023 13:42:36] "POST /login?next=/ HTTP/1.1" 302 -
User loader: <class 'website.models.User'>
('USR(N)92', 3, 180, 60, 'rahul', None, None, 0, None)
```

The screenshot shows a web browser window with the address bar set to '127.0.0.1'. Below the address bar, there are links for 'Login' and 'Sign Up'. The main content area displays a 'Sign Up' form with the following fields:

- Email Address: A text input field containing 'Enter email'.
- First Name: A text input field containing 'Enter first name'.
- Password: A text input field containing 'Enter password'.
- Password (Confirm): A text input field containing 'Confirm password'.

At the bottom of the form is a blue 'Submit' button.

A screenshot of a web browser window showing a profile edit form. The browser's address bar displays '127.0.0.1'. The page header includes links for 'Queries', 'Profile', and 'Logout'. The main content area contains a form with the following fields:

| | |
|------------------|---------|
| Name | riya |
| Height (cm) | 165 |
| Weight (kg) | 57 |
| DOB (YYYY-MM-DD) | [empty] |

Below the form is a large blue 'Submit' button. At the bottom of the page is a red button with the text 'Delete the user account'.

A screenshot of a web-based SQL query interface. The title bar shows the URL 127.0.0.1. The main area is titled "Enter SQL Queries". Below the title is a large input field. Underneath the input field is a blue button labeled "Execute SQL query". To the left of the input field, there is a vertical list of database table names:

- completeuserinfo
- daily_log
- diet_plan
- diet_plan_recipe
- does
- exercise_list
- exercise_routine
- exercise_routine_dailylog
- exercise_routine_fname
- loyalty_pts
- loyalty_pts_feedback
- membership_type

A screenshot of a web-based SQL query interface, similar to the one above. The title bar shows the URL 127.0.0.1. The main area is titled "Enter SQL Queries". In the input field, the following SQL query is typed:

```
select * from completeuserinfo where fname = 'rahul'
```

Below the input field is a blue "Execute SQL query" button. At the bottom of the screen, there is a dark footer bar displaying user information:

| | | | | | | | | | |
|----------|---|-----|----|-------|------|------|----|------|------------------------|
| USR(N)92 | 3 | 180 | 60 | rahul | None | None | 21 | None | rahulrao2002@gmail.com |
|----------|---|-----|----|-------|------|------|----|------|------------------------|