Gym and Nutrition Management System

Team Number 27
Team Name GymNation

Individual Contribution:

1. Aashish -Query writing, sample data filling and features writing(auth and cookies).
2. Shashank - er diagram, schema, attributes, feature writing.
3. Arihant - Entities, attributes, relationships, ER diagram
4. Vikhyat - worked on ER diagram, conceptual schema
5. Bhavesh - Query writing, documentation, entities

WEEK 1

- Got Familiarised with the teammates started brainstorming about the topic.

WEEK 2 - 3

- Decided the online store application that we would like to develop.
- Identified the stakeholders(over 7 stakeholders) and their roles, and for what purpose they will be using the database.

WEEK 4

- Based on the decided stakeholders, created the Entity Relationship Diagram.

WEEK 5

- Defined the schema for each table, and the constraints, like, Foreign key, Primary key relationship etc.
- Created database schema and tables.

WEEK 6

- Populated these tables with dummy data from various online platforms that satisfies all the requirements based on the tables created.

Introduction:

Our project aims to make a systematic, organized and centralized system for all the Gym Freaks out here.
What if we told you that you could keep a track of all your health records, exercise routines, bmi, calories burned, diets to be followed, your personal best lifting records and much more, all under a single application! That's exactly what our team is focused and dedicated to do.
With over 7 stakeholders from various domains, GymNation plans to bring about a dynamic change in the fitness industry.

Stakeholders and Their Roles:

Listed below are the various stakeholders and their respective roles that our project aims on capturing:

1. Gym Owners:
   These stakeholders are the ones with highest access privileges. They have access to almost all the data of the trainers, accounts department and the clients who have bought the gym membership.
   We have kept privacy in mind and hence only give Gym owners (ones with highest access privilege) the details necessary. The health reports of clients, their ids and passwords, their card details will all be stored as MD5 Hashes in our database, thereby assuring that they do not have any unnecessary access or abuse of power.

2. Nutritionists:
   They will have a separate database altogether and will be linked to the Gym Clients and Trainers by a key that links them together, probably a subscription type that gives the clients access to a Nutritionist and gets them to prepare a diet chart for the clients. They will have access to all the health data of the client and trainers.

3. Doctors and Physiotherapists:
   This feature is for those who are going to gym owing to a particular medical condition such as diabetes or blood pressure and for the ones who are trying to recover from an injury. They will have access to the particular client and specialised trainers who serve the same purpose.

4. Trainers:
   These trainers will be of various types, such as Specialised Trainers for medical injuries, Calisthenic Trainers for ones looking for basic fitness and sports, Zumba etc.
   They will have access to clients data, based upon their subscription package.

5. Accounts Department:
   These stakeholders will keep track of subscription packages and timely payments of clients.

6. Supplements Suppliers:
   These stakeholders will yet again have an entirely different database, linking them to Gym Owners, Trainers, Doctors and Physiotherapists, and the clients.
   The supplements and protein boxes can be bought from here at discounted rates, provided they have a deal with a particular gym owner.

7. Gym Equipment Suppliers:
   They will be linked to Gym Owners and the two can exchange quotations and prices for equipment that a gym might need or would like to repair or replace.

8. Workers:
   These stakeholders will have their own database linking them with the gym owners and information about their shift timings, what work needs to be done, what work has already been done etc. will be stored in this database.

Entities

We can define entities as real world objects which can help us differentiate them from some other objects.

For our project based on the Gym management system database, we can identify the following entities:

Entities and Attributes:

1. Trainee:
    a. Personal :
        i. Name
        ii. ID
        iii. Phone
        iv. Address
    b. Exercise Information:
        i. Day, Exercise to Do (Set * Reps)
        ii. Diet.
        iii. Time for Gym
    c. Administration information://gym membership
        i. Branch Manager (Name,Phno.)
        ii. Subscription Left
        iii. Fee Due/Changes
2. Owner(or Manager) :
    a. Personal(Name, etc)
3. Non-Worker(Plumber, Electrician, etc)
    a. Personal(Name, etc)
    b. Previous Work done by him/her
4. Trainer:
    a. Personal
        i. Specialisation
        ii. Time
        iii. Personal Trainees
        iv. Personal Workout Schedule
        v. Time to Come and go
    b. Administration
        i. Salary information
5. Equipments/Supplements Supplier:

    a. Type(Medical or equipment) - constraint - CHECK constraint such that type can be one of the following - Medical or Equipment
    b. address
    c. Phone Number
    d. Joining date
    e. Delivery Day
6. Equipments in store:
    a. Item name
    b. Id
    c. Number of items
7. Doctor:
    a. Personal: (similar to above)
        i. Name
        ii. Id
        iii. Medical Qualification
    b. Customer
    c. Timing

Relationships:

1. Trainee connected to trainer, doctor, equipment in store.
2. Trainer connected to trainee, owner, equipment in store, doctor.
3. Owner connected to All. (one to many)
4. Supplier connected to owner.
5. Doctor connected to medical supplier.
6. Supplier supplies to owner equipments and supplements

ER diagram :
https://lucid.app/lucidchart/invitations/accept/3a03af0a-03cf-4099-b77e-604046e9c6e2

Schema:
https://lucid.app/lucidchart/b7841f61-7478-4822-a47c-54cf287e128d/edit?shared=true&page=0_0#

Personal Information

Fields	Data type
Name	varchar(25)
Phone number	varchar(10)
ID	varchar(4)
address	varchar(200)
E-mail	varchar(30)
Type	varchar(20)
Gender	varchar(10)

Payroll

Fields	Data type
PaymentID	varchar(5)
ReceiverID	varchar(4)
Date paid	varchar(10)
Gross pay	varchar(10)
Hours worked	varchar(5)

Trainee

Fields	Data type
ID	varchar(4)
Fee due/paid	varchar(6)
Subscription plan	varchar(10)
timings	varchar(50)

Trainer

Fields	Data type
ID	varchar(4)
salary	varchar(6)
Salary status	varchar(1)
timings	varchar(50)

Doctor

Fields	Data type
ID	varchar(4)
specialisation	varchar(15)
salary	varchar(6)
Salary status	varchar(1)

Exercise Schedule

Fields	Data type
Equipment	varchar(15)
day	varchar(10)
Time to complete	varchar(5)
No. of sets	varchar(2)
Exercise type	varchar(10)

Queries:

Authentication**:
select cookie from PII where username='[username input]' and password='[password input]' ;
If the cookie returned. it will be used from here on in all subsequent requests to derive ID of user and use it for other operations.
Else login failed.
Example of how we will derive ID (primary key) from cookie:
select ID from PII where cookie='[cookie on successful login]';
Scenario: Flow of a trainee (Aisha Khan) logging in and viewing available trainers:
select cookie from PII where username='AishaK2001' and password='YouWontGuessThisOne' ;
Since right password, cookie returned:
cookie=437322789708948
Now, to check for available trainers using cookie:

1. When she clicks on view trainers, what happens in backed is a multi-step process:**select ID from PII where cookie='437322789708948';**
   returns: 2001
2. **select gender from PII where id=2001;returns: female**
3. If female returned, display result of the command:

Select PII.Name, Trainer.Timings from PII inner join Trainer on Trainer.TrainerID=PII.ID;

4. Else if Male returned, display result of the command:

Select PII.Name, Trainer.Timings from PII inner join Trainer on Trainer.TrainerID=PII.ID where PII.gender='male';

Commands for Trainee:

1. To Check Availability of Trainer
   a. Male Trainee: (Can't see female trainer):**Select PII.Name, Trainer.Timings from PII inner join Trainer on Trainer.TrainerID=PII.ID where PII.gender='male';**
   b. Female Trainee: (Can see all Trainers): **Select PII.Name, Trainer.Timings from PII inner join Trainer on Trainer.TrainerID=PII.ID;**
2. To see exercise schedule chart: **select * from schedule where schedule.TraineeID=[USER_ID]**;
3. 3. To check for available doctor timings: **Select PII.Name, Doctor.Timings from PII inner join Doctor on Doctor.ID=PII.ID;**
4. Elite trainee can see all doctor timings:
   Select PII.Name, doctor.specialization, doctor.timings from PII inner join doctor on doctor.ID=PII.ID;
5. Sport trainee can see Nutritionist and Physiotherapist: **Select PII.Name, doctor.specialization, doctor.timings from PII inner join doctor on doctor.ID=PII.ID where doctor.specialization='Nutritionist' or doctor.specialization='Physiotherapist';**
6. Trainer, Trainee and Physiotherapist can see equipments: **Select available_equipments.Name from available_equipments where isSupplement=0;**

7. Trainer, Trainee, General Doctor and Nutritionist can see all supplements: **Select available_equipments.Name from available_equipments where isSupplement=1;**

Commands for Owner:

A. Financial Duties
   - For owner to check for unpaid fees:
     - **Select PII.Name, PII.phone, PII.email, PII.address, Trainee.subscription, trainee.fee_due from PII inner join Trainee on Trainee.TraineeID=PII.ID and Trainee.fee_due>0;**
   - For owner to check for unpaid trainers:
     - **Select PII.Name, PII.phone, PII.email, PII.address, payroll.salary, payroll.date, payroll.hours from PII inner join payroll on Payroll.ID = PII.ID and payroll.status=0 and PII.type='trainer';**
     -
   - For owner to check for unpaid doctors:
     - **Select PII.Name, PII.phone, PII.email, PII.address, payroll.salary, payroll.date, payroll.hours from PII inner join payroll on Payroll.ID = PII.ID and payroll.status=0 and PII.type='doctor';**
   - . For owner to check for all unpaid workers:
     - **Select PII.Name, PII.phone, PII.email, PII.address, payroll.salary, payroll.date, payroll.hours, PII.type from PII inner join payroll on Payroll.ID = PII.ID and payroll.status=0;**

B. Health And Nutrients:
   - Owner can see all equipments: **select Name, ItemID, Quantity from available_equipments where isSupplement=0;**
   - Owner can see all Supplements:**select Name, ItemID, Quantity from available_equipments where isSupplement=1;**
   - Owner can see all required equipments: **select Name, ItemID, Quantity, Requirement from available_equipments where isSupplement=0 and Requirement>0;**
   - Owner can see all required Supplements: **select Name, ItemID, Quantity, Requirement from available_equipments where isSupplement=1 and Requirement>0;**

C. Administration:
   a. Owner can see name, phone, email of trainee whose fee is unpaid:**Select PII.Name, PII.email, PII.phone from PII inner join Trainee on Trainee.TraineeID=PII.ID where Fee_Due>0**;

b.
c.

Command For Trainer:

1. Trainer can see exercise schedule of a trainee:**Select PII.Name, schedule.day, schedule.equipment, schedule.type, schedule.sets from PII inner join schedule on schedule.TraineeID=PII.ID where PII.name='[TraineeName]';**
2. Trainers can see all doctors:**Select PII.Name, doctor.specialization, doctor.timings from PII inner join doctor on doctor.ID=PII.ID;**
3. Trainer can watch trainees:
    a. Male trainer can only see Name, phone and email of male trainee not female: **select PII.name, PII.phone, Pii.email from pii where gender='male' and type='trainee';**

    b. Female trainer can see Name, phone and email of all trainees:**select PII.name, PII.phone, Pii.email from pii where type='trainee';**
4. Doctor, Trainer can check his salary:**Select PII.Name, payroll.salary, payroll.hours, payroll.date, payroll.status from PII inner join payroll on payroll.ID=PII.ID where PII.name='[Trainer Name]';**

Commands for Doctors:

1. Doctor can see Trainer details: **Select PII.Name, PII.email, PII.phone from PII inner join Trainer on Trainer.TrainerID=PII.ID;**
2. General Doctor can see details of elite trainees: **Select PII.Name, PII.email, PII.phone from PII inner join Trainee on Trainee.TraineeID=PII.ID where Trainee.subscription='elite';**
3. Nutrionists and Physiotherapists (only) can see details of elite and sport trainees:**Select PII.Name, PII.email, PII.phone from PII inner join Trainee on Trainee.TraineeID=PII.ID where Trainee.subscription='elite' or Trainee.Subscription='Sport';**

Tables:

- Submitted in a text file attached in the mail with file name: T27_table.

Description of the tables:

- Submitted in a text file attached in the mail with file name: T27_describe_sql.