

CS 5200 - Database Management Systems

Project Proposal

Fitness Fusion Gym Management System

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Introduction

A fitness chain called "Fitness Fusion" has locations all throughout Boston. The Fitness Fusion Gym Management System is a platform that gives gym clients a reliable and efficient way to manage their subscriptions, follow their fitness journey, and consult the daily exercise and diet programs. Furthermore, it enables the staff members to manage member registration, comprehend their roles, and monitor the advancement of their clients.

Database Description

The database contains information regarding the functioning of several branches of Fitness Fusion Gym across Boston. Every branch has a unique id, unique address which contains street number, street name, city, state and zipcode. Each branch also has a telephone number and an email address.

Each branch can have one to many staff members working in it. However, each staff member works only at a single branch. Each staff member has a unique id, name, a unique phone number, unique email address, a shift-start time, a shift-end time and salary associated with them. The staff members in the gym are assigned different responsibilities based on their job role. A staff member can either be a manager, a trainer or a cleaner.

Every branch has a single manager and every manager manages only one branch. All branches record the date when their managers took over the position. A manager of the branch is responsible for registering new clients at the branch. While registering a new client, the manager guides the client through all the available membership plans and then registers the client at the branch. The manager can register multiple clients at the branch with the same membership plan. However, each client can select only one membership plan.

A membership plan has a unique type and fees associated with it. Whenever the manager registers a new client, a membership start and end date is recorded for the client.

A trainer is responsible for guiding the gym members with their exercises. For each trainer, their specialization and years of experience are tracked. A trainer can train one to many gym members. Each gym member is trained by only a single trainer assigned to them.

The cleaners in the branch maintain the hygiene at the gym by cleaning the workout equipment. A cleaner can clean one or more equipment. However, each piece of equipment is cleaned only by one cleaner.

Each registered member at a branch has a unique id, a name, a unique email id, a phone number and an address. When a member registers at a branch, a health report is generated for the member which indicates the fitness status of the member. Multiple health reports can be generated for the members after certain time intervals to track their progress.

A health report for a gym member consists of a unique id, member's weight, height, body mass index(BMI), fat percentage and date of report creation. A health report also indicates whether the gym member smokes, drinks, has any disability or has undergone any surgery.

On the basis of the results of the health report, the customer is given a diet plan. The schedule of the diet for each unique category (High Protein Diet, Low Carb Diet, Mediterranean Diet, Vegan or Vegetarian Diet, Intermittent Fasting Diet) is included in the diet plan. The user is given a schedule from Monday through Sunday that includes a description of each meal as well as the time and calories associated with it.

Each branch owns equipment which has a unique equipment id, equipment name and equipment description. Each Equipment is used in various exercises.

Each exercise may require various equipment. Exercise contains a unique exercise id, exercise name and exercise description.

There are unique exercise routines which are designed for clients. These routines are Resistance Training, High Intensity Training, Cardiovascular Training, Functional Training. Based on the health report, the client is provided with one of the above routines. The client receives a schedule that goes from Monday through Saturday which specifies the number of sets and reps for each exercise. Each routine can have multiple exercises and each exercise is associated with multiple routines.

User Interaction

The application has four types of users.

- The gym members can use the application to view their health reports, view their diet plan, view their trainer's details and also refer to their exercise schedules. The members can also check the details of the exercises suggested in their exercise schedules and go through the equipment to be used in each of the exercises.

- The branch managers can use the application to view and update the details of their branch members, trainers and cleaners. They can also register new gym members at their branch by selecting one of the available membership plans.
- Trainers can use the application to view as well as update the diet plan and exercise schedule for their assigned clients. Trainer can also view and create new health reports for their assigned clients. They can view and update the details of exercise as well as the equipment used for that exercise.
- Cleaners can use the application to view which equipment they have to clean.

Why does this interest us?

A significant piece of wellness and good health is fitness, which includes emotional, mental, and physical aspects. Understanding this, we have always been interested in staying in good shape. Thus, having been members at several gyms and fitness clubs, we realized that there is no proper connection between the gym staff members and the clients. The gym clients must have a convenient way to refer to their schedules whenever required; asking trainers which exercises to complete each day and which diet to follow, is a tiresome duty for both the gym trainer and the members. Similarly, the gym staff members should also be able to easily check their assigned responsibilities and monitor the progress of their assigned clients. Thus, having a centralized database for gym management would make it easier to keep track of the data and the front end application for the users will allow them to conveniently manage their activities.

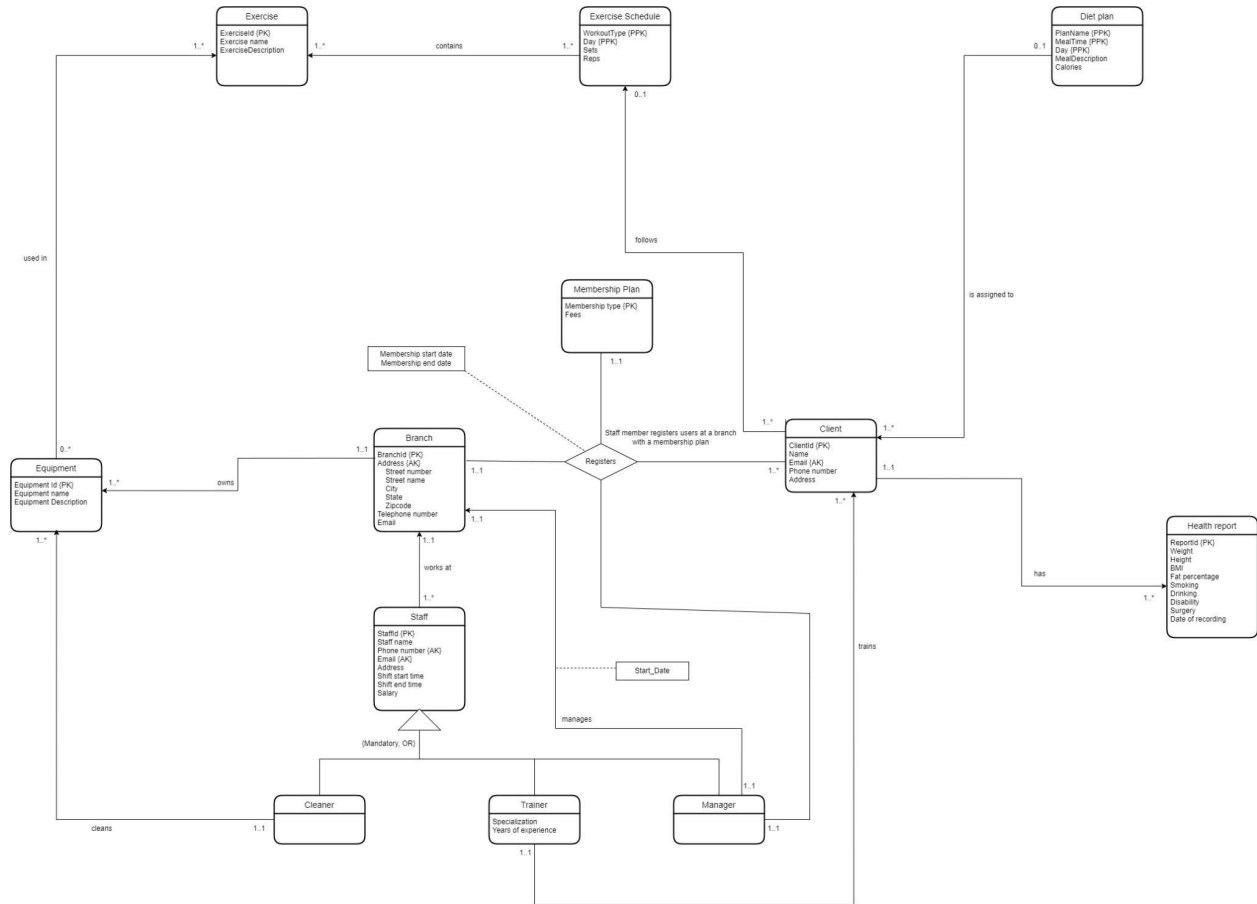
Database Software:

- MySQL Workbench, PhpMyAdmin

Language:

- HTML, CSS, JavaScript, Python
- SQL to manage the database
- No machine Restrictions

UML Diagram:



UML Activity Design:

