Report on

TrackFit: Smarter Tracking for a Healthier Life

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Project Overview

The **TrackFit** is a MySQL-based solution designed to centralize and streamline fitness management by efficiently storing and managing user health data, workout routines, progress tracking, and goal management. This system provides a structured approach to fitness tracking, enabling users to monitor their physical activities, nutrition, and overall health progress in an organized and data-driven manner. Each user profile is stored with *detailed health metrics*, including user ID, name, age, gender, weight, height, BMI, fitness level, and medical history, ensuring a personalized fitness experience. The system maintains workout records, categorizing exercises by type, duration, intensity. It also tracks nutrition logs, recording daily calorie intake, macronutrients, and meal history to help users maintain a balanced diet. The goal-setting module allows users to define fitness objectives such as weight loss, muscle gain, endurance improvement, while SQL queries analyze progress and provide personalized workout recommendations. Activity tracking records daily step counts, heart rate, and exercise consistency, ensuring users stay on track with their fitness journeys. By consolidating all aspects of fitness management into a single, user-friendly platform, this DBMS empowers individuals to take control of their health, optimize their fitness journey, and achieve their personal wellness goals efficiently.

Contributions

Table 1: Team Member's Contributions

ID	Name	Tasks	Contribution
2221150042	Esrat Binte Smriti	• Project Plan • Project Overview • Project description • Logical Design Diagram • Project Schedule • Data Population • Query • Conclusion • Acknowledgements	34%
2231048642	Al Rakib	• Project Plan • Conceptual Design Diagram • Table Creation • Deliverable • Roles and Responsibilities • Data Population • Query	33%
2233329042	Sanjana Absar Trima	• Project Plan • Project Objective • Scope Statement • Key Milestones • Physical Design Diagram • Table Creation • Query	33%

1 Project Title

TrackFit: Smarter Tracking for a Healthier Life

2 Project Description

Our database application is a comprehensive health management and fitness tracking solution. It is designed to be an easy-to-use combination of workout planning, nutrition tracking, and health monitoring in a single functional system. We have named the system **TrackFit**. With a robust framework of independent modules for user profile management, workout logging, BMI and health tracking, nutrition monitoring, and goal setting, TrackFit is a new benchmark for data-driven fitness management. At the core of the system is a detailed profile for each user, which contains important health information such as user ID, name, age, gender, weight, height, BMI, fitness level, and medical history. With all this information in one place, TrackFit ensures that users receive personalized feedback on their fitness level so they can make informed decisions about their exercise and nutrition. The exercise module allows one to log particular exercise information, like type, duration, intensity, sets, and repetitions, to keep an orderly approach to fitness. Workouts can be labeled as strength training, cardio, flexibility, or endurance, which allows the user to tailor workouts to meet specific goals. Nutrition monitoring is also nicely integrated, enabling users to log daily caloric intake, macronutrient balance, and meal history. This function helps users maintain a balanced diet, track eating habits, and make the necessary adjustments to aid in fitness goals. Our goal-setting feature allows users to establish and track fitness goals, whether it is weight loss, muscle gain, or enhancement of endurance. Through these data points, users are more aware of their overall well-being. With all of these features combined, TrackFit allows individuals to take control of their own health, organize their fitness routines, and successfully achieve their wellness goals. By offering a structured, fact-based fitness system, the software ensures long-term success in pursuit of a healthier and more active lifestyle.

3 Project Objective

The objectives of the project:

Provide a comprehensive health management solution: This project helps to manage and tracks one's health by combining workout planning , nutrition and diet planning , tracking their daily activities and setting their personalized goal respective to their medical health condition.

Suggest personalized workouts and nutrition plans: Based on the user's medical history and health issues, provide tailored workout recommendations and a balanced diet to promote overall health for individuals of all ages.

Monitor daily nutrition intake: Enables users to log their daily caloric intake, macronutrient balance (proteins, carbs, fats), and meal history, which helps them maintain a balanced diet and reach their specific fitness goals. The system can also offer nutritional advice based on individual needs and fitness goals. Deliver tailored insights and advice based on users' detailed health profiles, including BMI, fitness level, age, gender, weight, height, and medical history. This allows for smarter decision-making in workout routines and dietary choices.

Log and track workouts efficiently: Provide users with the ability to record and track various workout parameters such as type, duration, intensity, sets, and repetitions. This helps them stay organized and allows for easy tracking of progress toward fitness goals.

Promote long-term health and wellness: Provide a structured, data-driven platform that ensures users can achieve sustainable fitness and health improvements over time.

Set and track fitness goals: Help users establish personalized fitness objectives (weight loss, muscle gain, endurance enhancement) and monitor progress to stay motivated.

4 Project Scope

4.1 Scope Statement:

This project encompasses the development of an integrated Health and Fitness Management System aimed at delivering a personalized and holistic wellness experience to users. The system will serve as a digital companion for individuals seeking to improve or maintain their health by focusing on customized fitness, nutrition, and lifestyle planning.The system will allow users to create detailed health profiles, including information such as age, gender, weight, height, BMI, fitness level, and medical history, which will be used to generate customized workout plans and nutritional guidance. It will enable users to log and track their daily workouts, including type, duration, intensity, sets, and repetitions, as well as monitor their daily nutritional intake in terms of calories and macronutrient balance. The platform will offer smart insights and recommendations based on users' health data to support goal-oriented progress, whether the objective is weight loss, muscle gain, or improved endurance. Additionally, the system will include features for setting and tracking personalized fitness goals, maintaining a history of physical activities and meals, and medical issues. The user interface will be designed to be intuitive and accessible, ensuring a smooth and engaging experience. This project focuses on building a structured, data-driven platform that supports sustainable health improvements and informed decision-making in fitness and dietary routines.

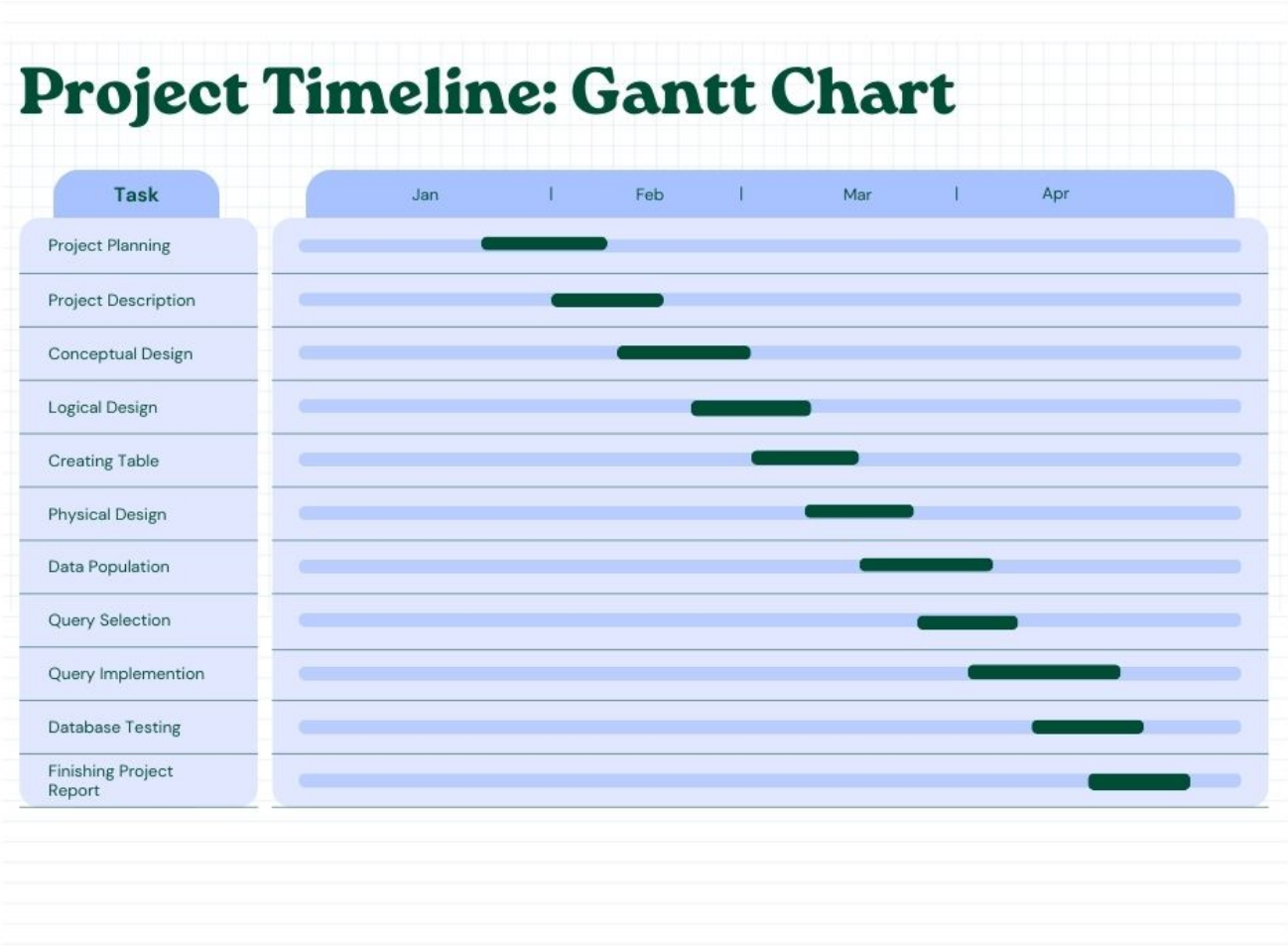
4.2 Key Milestones:

- Database Planning and Design.
- Design the system architecture, database schema, and user interface wireframes.
- User Profile Module Development.
- Nutrition and diet planning.
- Develop functionalities for suggesting type of workouts based on user's health history,age and other factors.
- Conduct testing with sample users to gather feedback, identify bugs, and make necessary improvements.
- Final deployment and documentation.

4.3 Roles and Responsibilities:

The Development Team takes charge of designing, building, and testing the TrackFit database system. They make sure all the key parts like user information management, BMI tracking, nutrition logging, and workout recording are properly implemented, run smoothly, and stay secure. Along the way, they also document the database and handle its ongoing maintenance. Meanwhile, the Project Manager keeps everything on track. They oversee the project's progress, manage the timeline and resources, and make sure the team hits all the important development milestones.

4.4 Project Schedule:



5 Deliverable

- **User Portal:** A user-friendly interface where user can log workouts, track nutrition, set fitness goals and monitor their overall health metrics. The portal ensures that users can easily view and manage their fitness journey.
- **Workout Management Module:** Tools that allow users to log daily workouts, track exercise types, durations and monitor their progress over time.
- **Nutrition Tracking Module:** A system for users to record daily food intake, including calories and macronutrients (protein, carbohydrates, fats). It also includes features to help users maintain dietary goals aligned with their fitness objectives.
- **Health Metrics Monitoring Module:** A feature that tracks key health indicators such as BMI, steps and heart rate. It allows users to plan workout according to their health conditions.
- **Goal Setting and Tracking System:** A dedicated module where users can set their fitness goals (e.g., weight loss, muscle gain, endurance improvement) and track their progress toward achieving them.
- **Medical History Management:** A secure section where users can document relevant medical information (e.g., injuries, allergies, chronic conditions) to personalize fitness and nutrition recommendations and ensure safe exercise practices.
- **Future Feature::** Planned development to allow real-time syncing with fitness trackers and smartwatches, enabling automatic workout, step count, sleep, and heart rate data logging for a more seamless user experience.

6 Diagrams

6.1 Conceptual Design Diagram

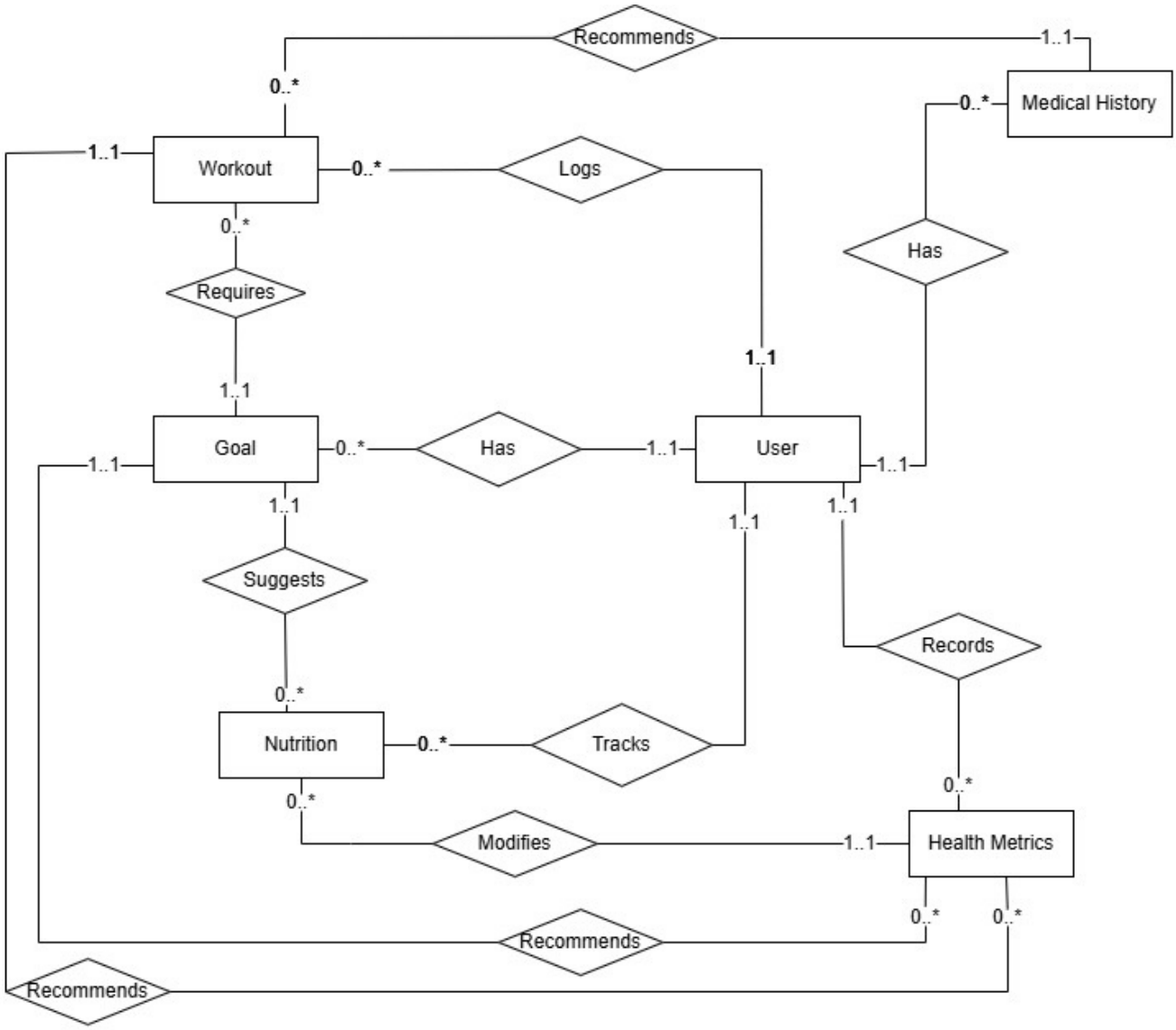


Figure 1: Conceptual design of the database

6.2 Logical Design Diagram

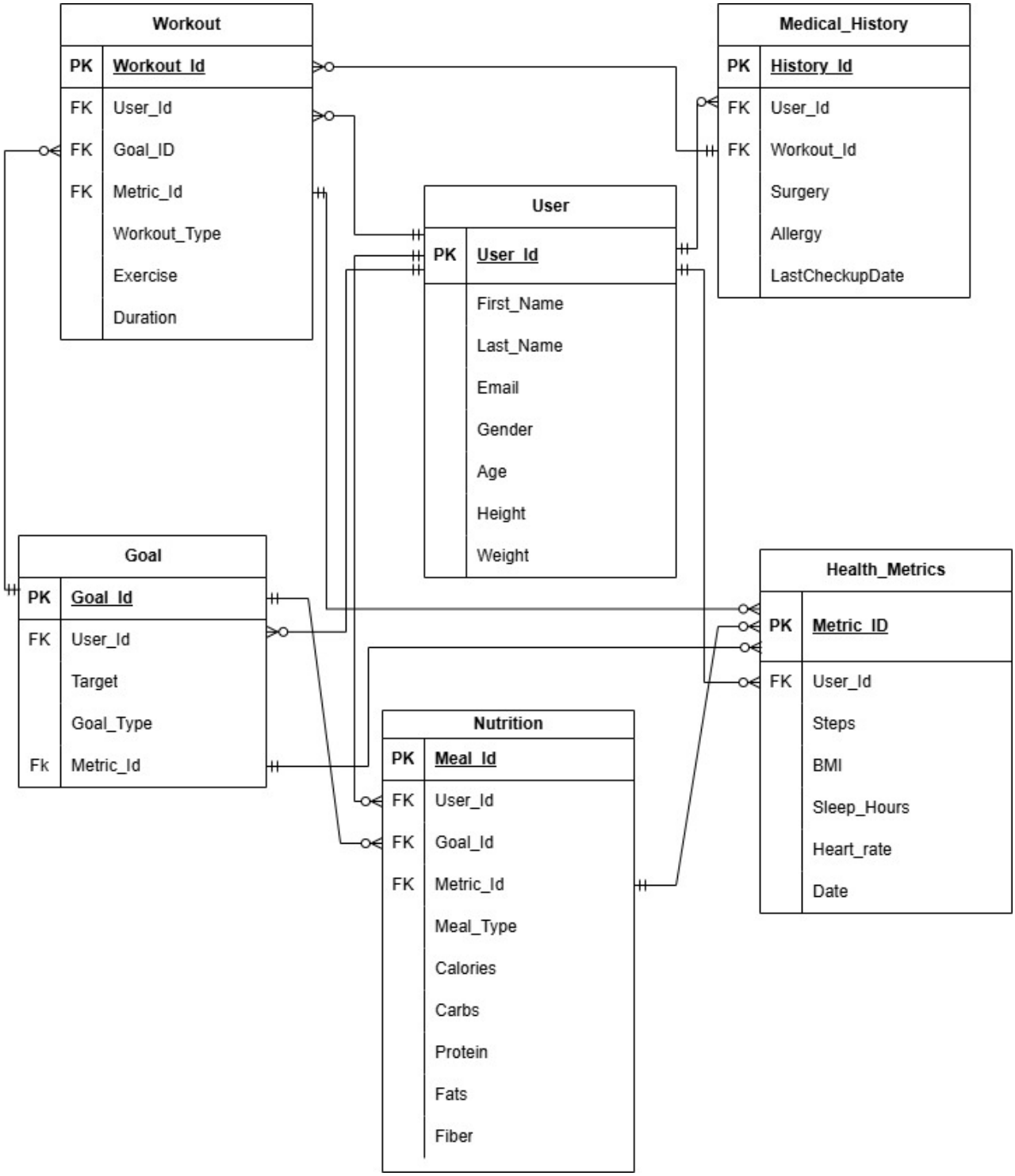


Figure 2: Logical design of the database

6.3 Physical Design Diagram

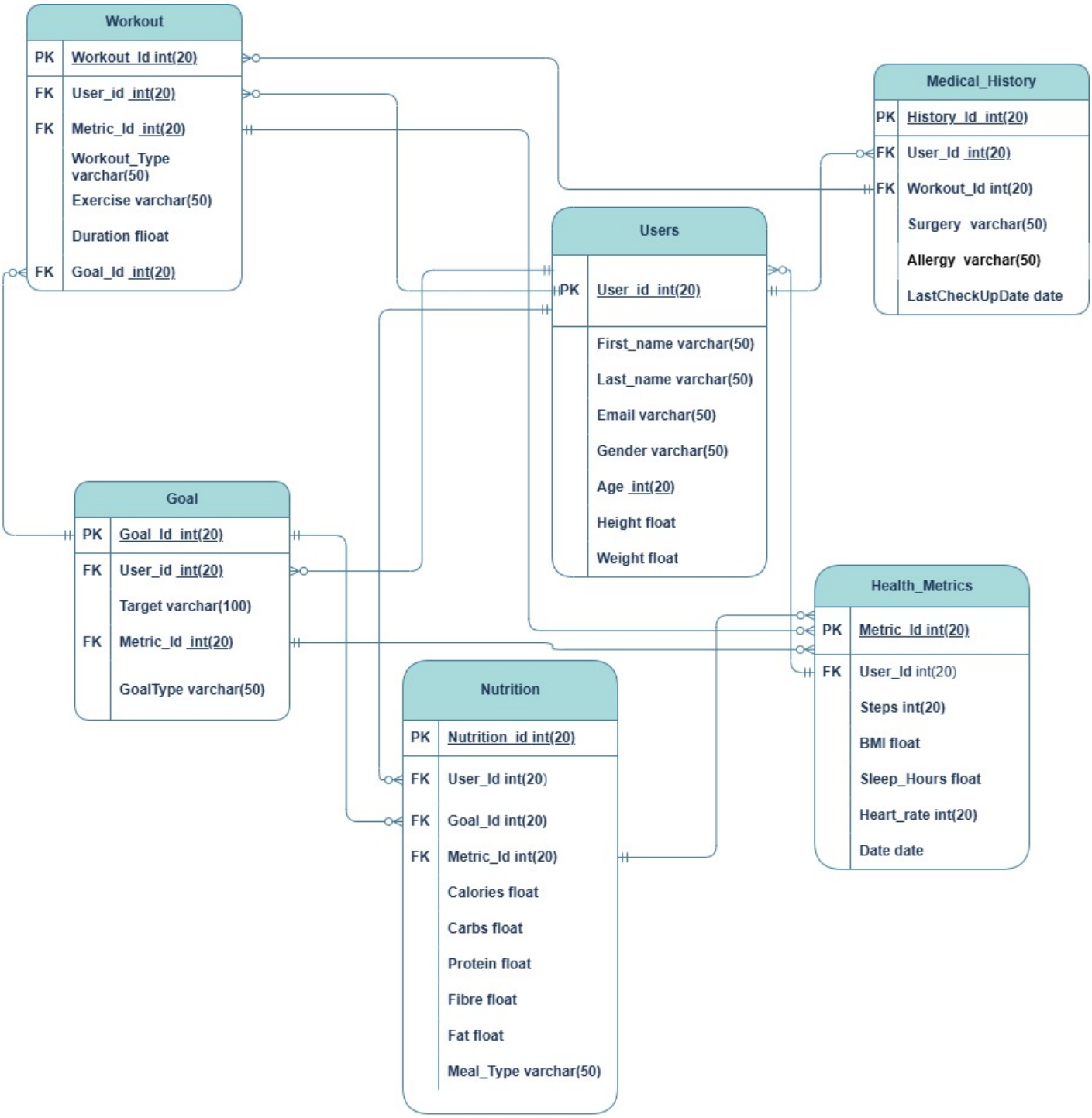


Figure 3: Physical design of the database

7 Table Creation

- **User:**

```sql
   CREATE TABLE User (
    User_Id INT PRIMARY KEY,
    First_Name VARCHAR(50),
    Last_Name VARCHAR(50),
    Email VARCHAR(100),
    Gender VARCHAR(10),
    Age INT,
    Height FLOAT,
    Weight FLOAT
);
```

- **Health Metrics:**

```sql
    CREATE TABLE Health_Metrics (
    Metric_Id INT PRIMARY KEY,
    User_Id INT,
    Steps INT,
    BMI FLOAT,
    Sleep_Hours FLOAT,
    Heart_rate INT,
    Date DATE,
    FOREIGN KEY (User_Id) REFERENCES Users(User_Id)
);
```

- **Goal:**

```sql

    CREATE TABLE Goal (
    Goal_Id INT PRIMARY KEY,
    User_Id INT,
    Target VARCHAR(100),
    Goal_Type VARCHAR(50),
    Metric_Id INT,
    FOREIGN KEY (User_Id) REFERENCES Users(User_Id),
    FOREIGN KEY (Metric_Id) REFERENCES Health_Metrics(Metric_Id)
);
```

- **Nutrition:**

```sql
    CREATE TABLE Nutrition (
    Meal_Id INT PRIMARY KEY,
    User_Id INT,
    Goal_Id INT,
    Metric_Id INT,
    Meal_Type VARCHAR(50),
    Calories FLOAT,
    Carbs FLOAT,
    Protein FLOAT,
    Fats FLOAT,
    Fiber FLOAT,
    FOREIGN KEY (User_Id) REFERENCES Users(User_Id),
    FOREIGN KEY (Goal_Id) REFERENCES Goal(Goal_Id),
    FOREIGN KEY (Metric_Id) REFERENCES Health_Metrics(Metric_Id)
);


```

- **Workout:**

```sql
        CREATE TABLE Workout (
    Workout_Id INT PRIMARY KEY,
    User_Id INT,
    Goal_Id INT,
    Metric_Id INT,
    Workout_Type VARCHAR(50),
    Exercise VARCHAR(100),
    Duration INT,
    FOREIGN KEY (User_Id) REFERENCES Users(User_Id),
    FOREIGN KEY (Goal_Id) REFERENCES Goal(Goal_Id),
    FOREIGN KEY (Metric_Id) REFERENCES Health_Metrics(Metric_Id)
);


```

- **Medical History:**

```sql
       CREATE TABLE Medical_History (
    History_Id INT PRIMARY KEY,
    User_Id INT,
    Workout_Id INT,
    Surgery VARCHAR(100),
    Allergy VARCHAR(100),
    LastCheckupDate DATE,
    FOREIGN KEY (User_Id) REFERENCES Users(User_Id),
    FOREIGN KEY (Workout_Id) REFERENCES Workout(Workout_Id)
);


```

7.1 Data Population:

Users:

```sql
INSERT INTO User (User_Id, First_Name, Last_Name, Email, Gender, Age, Height, Weight) VALUES
(1, 'Rahim', 'Uddin', 'rahim.uddin@example.com', 'Male', 28, 5.8, 68.5),
(2, 'Karim', 'Hossain', 'karim.hossain@example.com', 'Male', 35, 5.6, 72),
(3, 'Shorna', 'Akter', 'shorna.akter@example.com', 'Female', 25, 5.4, 55.2),
(4, 'Nusrat', 'Jahan', 'nusrat.jahan@example.com', 'Female', 30, 5.5, 58.7),
(5, 'Tanjim', 'Ahmed', 'tanjim.ahmed@example.com', 'Male', 22, 5.7, 63.4),
(6, 'Mithila', 'Rahman', 'mithila.rahman@example.com', 'Female', 27, 5.3, 51),
(7, 'Sabbir', 'Hasan', 'sabbir.hasan@example.com', 'Male', 32, 5.9, 75.3),
(8, 'Farzana', 'Sultana', 'farzana.sultana@example.com', 'Female', 29, 5.6, 60.1),
(9, 'Anik', 'Chowdhury', 'anik.chowdhury@example.com', 'Male', 19, 5.9, 66.2),
(10, 'Maliha', 'Nasrin', 'maliha.nasrin@example.com', 'Female', 24, 5.5, 53.5);
```

Extra options

	User_Id	First_Name	Last_Name	Email	Gender	Age	Height	Weight
Edit Copy Delete	1	Rahim	Uddin	rahim.uddin@example.com	Male	28	5.8	68.5
Edit Copy Delete	2	Karim	Hossain	karim.hossain@example.com	Male	35	5.6	72
Edit Copy Delete	3	Shorna	Akter	shorna.akter@example.com	Female	25	5.4	55.2
Edit Copy Delete	4	Nusrat	Jahan	nusrat.jahan@example.com	Female	30	5.5	58.7
Edit Copy Delete	5	Tanjim	Ahmed	tanjim.ahmed@example.com	Male	22	5.7	63.4
Edit Copy Delete	6	Mithila	Rahman	mithila.rahman@example.com	Female	27	5.3	51
Edit Copy Delete	7	Sabbir	Hasan	sabbir.hasan@example.com	Male	32	5.9	75.3
Edit Copy Delete	8	Farzana	Sultana	farzana.sultana@example.com	Female	29	5.6	60.1
Edit Copy Delete	9	Anik	Chowdhury	anik.chowdhury@example.com	Male	19	5.9	66.2
Edit Copy Delete	10	Maliha	Nasrin	maliha.nasrin@example.com	Female	24	5.5	53.5

Check all *With selected:* Edit Copy Delete Export

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

Figure 4: User Table

Goal:

```sql
        INSERT INTO Goal (Goal_Id, User_Id, Target, Goal_Type, Metric_Id) VALUES
(1, 1, 'Lose 5kg in 2 months', 'Weight Loss', 1),
(2, 2, 'Run 5K in under 30 mins', 'Endurance', 2),
(3, 3, 'Gain muscle mass', 'Muscle Gain', 3),
(4, 4, 'Improve sleep quality', 'Wellness', 4),
(5, 5, 'Stay lean and active', 'Fitness', 5),
(6, 6, 'Improve digestion', 'Nutrition', 6),
(7, 7, 'Reduce BMI', 'Health', 7),
(8, 8, 'Tone body', 'Toning', 8),
(9, 9, 'Stay fit for sports', 'Performance', 9),
(10, 10, 'Gain healthy weight', 'Weight Gain', 10);


```

			Goal_Id	User_Id	Target	Goal_Type	Metric_Id
Edit	Copy	Delete	1	1	Lose 5kg in 2 months	Weight Loss	1
Edit	Copy	Delete	2	2	Run 5K in under 30 mins	Endurance	2
Edit	Copy	Delete	3	3	Gain muscle mass	Muscle Gain	3
Edit	Copy	Delete	4	4	Improve sleep quality	Wellness	4
Edit	Copy	Delete	5	5	Stay lean and active	Fitness	5
Edit	Copy	Delete	6	6	Improve digestion	Nutrition	6
Edit	Copy	Delete	7	7	Reduce BMI	Health	7
Edit	Copy	Delete	8	8	Tone body	Toning	8
Edit	Copy	Delete	9	9	Stay fit for sports	Performance	9
Edit	Copy	Delete	10	10	Gain healthy weight	Weight Gain	10

Check all *With selected:* Edit Copy Delete Export

Figure 5: Goals Table

Health Metrics:

```sql
INSERT INTO Health_Metrics (Metric_Id, User_Id, Steps, BMI, Sleep_Hours, Heart_rate, Date) VALUES
(1, 1, 7500, 22.5, 7.5, 72, '2025-04-15'),
(2, 2, 6500, 24.3, 6.5, 75, '2025-04-15'),
(3, 3, 8000, 20.1, 8.0, 68, '2025-04-15'),
(4, 4, 7200, 21.7, 7.0, 70, '2025-04-15'),
(5, 5, 9000, 22.8, 7.8, 69, '2025-04-15'),
(6, 6, 6800, 19.5, 6.5, 67, '2025-04-15'),
(7, 7, 6000, 25.0, 6.0, 78, '2025-04-15'),
(8, 8, 7300, 22.3, 7.2, 71, '2025-04-15'),
(9, 9, 10000, 21.0, 8.0, 65, '2025-04-15'),
(10, 10, 8500, 20.8, 7.5, 66, '2025-04-15');
```

	Metric_Id	User_Id	Steps	BMI	Sleep_Hours	Heart_rate	Date
Edit Copy Delete	1	1	7500	22.5	7.5	72	2025-04-15
Edit Copy Delete	2	2	6500	24.3	6.5	75	2025-04-15
Edit Copy Delete	3	3	8000	20.1	8	68	2025-04-15
Edit Copy Delete	4	4	7200	21.7	7	70	2025-04-15
Edit Copy Delete	5	5	9000	22.8	7.8	69	2025-04-15
Edit Copy Delete	6	6	6800	19.5	6.5	67	2025-04-15
Edit Copy Delete	7	7	6000	25	6	78	2025-04-15
Edit Copy Delete	8	8	7300	22.3	7.2	71	2025-04-15
Edit Copy Delete	9	9	10000	21	8	65	2025-04-15
Edit Copy Delete	10	10	8500	20.8	7.5	66	2025-04-15

Check all *With selected:* Edit Copy Delete Export

Figure 6: Health Metrics Table

Medical History:

```sql
        INSERT INTO Medical_History (History_Id, User_Id, Workout_Id, Surgery,
    Allergy, LastCheckupDate) VALUES
(1, 1, 1, 'None', 'Pollen', '2024-12-01'),
(2, 2, 2, 'Knee Surgery', 'None', '2025-01-15'),
(3, 3, 3, 'Appendix Removal', 'Dust', '2024-11-20'),
(4, 4, 4, 'None', 'Seafood', '2025-02-10'),
(5, 5, 5, 'Tonsil Surgery', 'None', '2025-03-01'),
(6, 6, 6, 'None', 'Peanuts', '2025-01-25'),
(7, 7, 7, 'Shoulder Injury', 'None', '2025-03-20'),
(8, 8, 8, 'None', 'Eggs', '2025-04-01'),
(9, 9, 9, 'None', 'None', '2025-04-10'),
(10, 10, 10, 'None', 'Gluten', '2025-04-05');


```

	History_Id	User_Id	Workout_Id	Surgery	Allergy	LastCheckupDate
Edit Copy Delete	1	1	1	None	Pollen	2024-12-01
Edit Copy Delete	2	2	2	Knee Surgery	None	2025-01-15
Edit Copy Delete	3	3	3	Appendix Removal	Dust	2024-11-20
Edit Copy Delete	4	4	4	None	Seafood	2025-02-10
Edit Copy Delete	5	5	5	Tonsil Surgery	None	2025-03-01
Edit Copy Delete	6	6	6	None	Peanuts	2025-01-25
Edit Copy Delete	7	7	7	Shoulder Injury	None	2025-03-20
Edit Copy Delete	8	8	8	None	Eggs	2025-04-01
Edit Copy Delete	9	9	9	None	None	2025-04-10
Edit Copy Delete	10	10	10	None	Gluten	2025-04-05

Check all *With selected:* Edit Copy Delete Export

Figure 7: Medical History Table

Nutrition:

```sql
INSERT INTO Nutrition (Meal_Id, User_Id, Goal_Id, Metric_Id, Calories, Carbs, Protein, Fats, Fiber, Meal_Type) VALUES
(1, 1, 1, 1, 1800, 200, 90, 65, 30, 'Full Day'),
(2, 2, 2, 2, 2200, 250, 100, 70, 32, 'Full Day'),
(3, 3, 3, 3, 2100, 230, 120, 60, 35, 'Full Day'),
(4, 4, 4, 4, 1900, 210, 85, 55, 28, 'Full Day'),
(5, 5, 5, 5, 2000, 220, 95, 60, 29, 'Full Day'),
(6, 6, 6, 6, 1700, 190, 80, 50, 27, 'Full Day'),
(7, 7, 7, 7, 2300, 270, 110, 75, 34, 'Full Day'),
(8, 8, 8, 8, 1950, 215, 88, 58, 30, 'Full Day'),
(9, 9, 9, 9, 2400, 280, 125, 78, 36, 'Full Day'),
(10, 10, 10, 10, 1850, 205, 92, 52, 31, 'Full Day');
```

```sql
SELECT * FROM `nutrition`;
```

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

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

Extra options

	Meal_Id	User_Id	Goal_Id	Metric_Id	Calories	Carbs	Protein	Fats	Fiber	Meal_Type
Edit Copy Delete	1	1	1	1	1800	200	90	65	30	Full Day
Edit Copy Delete	2	2	2	2	2200	250	100	70	32	Full Day
Edit Copy Delete	3	3	3	3	2100	230	120	60	35	Full Day
Edit Copy Delete	4	4	4	4	1900	210	85	55	28	Full Day
Edit Copy Delete	5	5	5	5	2000	220	95	60	29	Full Day
Edit Copy Delete	6	6	6	6	1700	190	80	50	27	Full Day
Edit Copy Delete	7	7	7	7	2300	270	110	75	34	Full Day
Edit Copy Delete	8	8	8	8	1950	215	88	58	30	Full Day
Edit Copy Delete	9	9	9	9	2400	280	125	78	36	Full Day
Edit Copy Delete	10	10	10	10	1850	205	92	52	31	Full Day

Check all *With selected:* Edit Copy Delete Export

Figure 8: Nutrition Table

Workout:

```sql
        INSERT INTO Workout (Workout_Id, User_Id, Goal_Id, Metric_Id, Workout_Type,
    Exercise, Duration) VALUES
(1, 1, 1, 1, 'Cardio', 'Running', 45),
(2, 2, 2, 2, 'Cardio', 'Cycling', 40),
(3, 3, 3, 3, 'Strength', 'Weight Lifting', 60),
(4, 4, 4, 4, 'Yoga', 'Stretching', 30),
(5, 5, 5, 5, 'Cardio', 'Swimming', 50),
(6, 6, 6, 6, 'Light', 'Walking', 35),
(7, 7, 7, 7, 'Strength', 'Pushups', 25),
(8, 8, 8, 8, 'HIIT', 'Burpees', 20),
(9, 9, 9, 9, 'Cardio', 'Jogging', 40),
(10, 10, 10, 10, 'Strength', 'Squats', 30);
```

```sql
SELECT * FROM `workout`
```

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

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

Extra options

	Workout_Id	User_Id	Goal_Id	Metric_Id	Workout_Type	Exercise	Duration
Edit Copy Delete	1	1	1	1	Cardio	Running	45
Edit Copy Delete	2	2	2	2	Cardio	Cycling	40
Edit Copy Delete	3	3	3	3	Strength	Weight Lifting	60
Edit Copy Delete	4	4	4	4	Yoga	Stretching	30
Edit Copy Delete	5	5	5	5	Cardio	Swimming	50
Edit Copy Delete	6	6	6	6	Light	Walking	35
Edit Copy Delete	7	7	7	7	Strength	Pushups	25
Edit Copy Delete	8	8	8	8	HIIT	Burpees	20
Edit Copy Delete	9	9	9	9	Cardio	Jogging	40
Edit Copy Delete	10	10	10	10	Strength	Squats	30

Check all *With selected:* Edit Copy Delete Export

Figure 9: Workout Table

8 Queries

8.1 Query List

- List all users in the system.
- Find all female users.
- Retrieve users older than 30 years.
- List all workouts with their type and duration.
- Find all users who logged a "Cardio" workout.
- Retrieve all meals consumed with more than 500 calories.
- List users who have a surgery record.
- Get all health metrics recorded after 2025-01-01.
- Find users with heart rate above 75.
- List all goals with their target descriptions.
- Find users targeting "Weight Loss."
- Retrieve all users who have allergies.
- Show workouts and associated health metric BMI.
- Find users who sleep less than 7 hours on average.
- Find total steps taken by all users.
- Count the number of users by gender.
- Retrieve all strength workouts.
- Show users who completed cardio exercises longer than 40 minutes.
- List meals with high protein (more than 30g).
- Find users whose BMI is above 24.9 (overweight threshold).
- Update a user's weight.
- Update the sleep hours in health metrics.
- Insert a new workout record.
- Delete a nutrition record with MealId = 5.
- Create a view listing users and their latest BMI.
- List users who had surgeries and their current workout type.
- Find users with allergies doing intense workouts (HIIT, Strength).
- Average workout duration based on medical history.
- Find users eating above 2200 calories but still losing weight.

8.2 SQL Query:

- **List all users in the system**

```sql
SELECT * FROM users;
```

	User_Id	First_Name	Last_Name	Email	Gender	Age	Height	Weight
Edit Copy Delete	1	Rahim	Uddin	rahim.uddin@example.com	Male	28	5.8	68.5
Edit Copy Delete	2	Karim	Hossain	karim.hossain@example.com	Male	35	5.6	72
Edit Copy Delete	3	Shorna	Akter	shorna.akter@example.com	Female	25	5.4	55.2
Edit Copy Delete	4	Nusrat	Jahan	nusrat.jahan@example.com	Female	30	5.5	58.7
Edit Copy Delete	5	Tanjim	Ahmed	tanjim.ahmed@example.com	Male	22	5.7	63.4
Edit Copy Delete	6	Mithila	Rahman	mithila.rahman@example.com	Female	27	5.3	51
Edit Copy Delete	7	Sabbir	Hasan	sabbir.hasan@example.com	Male	32	5.9	75.3
Edit Copy Delete	8	Farzana	Sultana	farzana.sultana@example.com	Female	29	5.6	60.1
Edit Copy Delete	9	Anik	Chowdhury	anik.chowdhury@example.com	Male	19	5.9	66.2
Edit Copy Delete	10	Maliha	Nasrin	maliha.nasrin@example.com	Female	24	5.5	53.5

Check all *With selected:* Edit Copy Delete Export

- **Find all female users.**

```sql
    SELECT * FROM Users
WHERE Gender = 'Female';
```

	User_Id	First_Name	Last_Name	Email	Gender	Age	Height	Weight
Edit Copy Delete	3	Shorna	Akter	shorna.akter@example.com	Female	25	5.4	55.2
Edit Copy Delete	4	Nusrat	Jahan	nusrat.jahan@example.com	Female	30	5.5	58.7
Edit Copy Delete	6	Mithila	Rahman	mithila.rahman@example.com	Female	27	5.3	51
Edit Copy Delete	8	Farzana	Sultana	farzana.sultana@example.com	Female	29	5.6	60.1
Edit Copy Delete	10	Maliha	Nasrin	maliha.nasrin@example.com	Female	24	5.5	53.5

Check all *With selected:* Edit Copy Delete Export

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

- **Retrieve users older than 30 years.**

```sql
   SELECT * FROM Users
WHERE Age > 30;
```

	User_Id	First_Name	Last_Name	Email	Gender	Age	Height	Weight
Edit Copy Delete	2	Karim	Hossain	karim.hossain@example.com	Male	35	5.6	72
Edit Copy Delete	7	Sabbir	Hasan	sabbir.hasan@example.com	Male	32	5.9	75.3

Check all *With selected:* Edit Copy Delete Export

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

- **List all workouts with their type and duration.**

```
   SELECT Workout_Type, Exercise, Duration
FROM Workout;


```

Extra options

	Workout_Type	Exercise	Duration
Edit Copy Delete	Cardio	Running	45
Edit Copy Delete	Cardio	Cycling	40
Edit Copy Delete	Strength	Weight Lifting	60
Edit Copy Delete	Yoga	Stretching	30
Edit Copy Delete	Cardio	Swimming	50
Edit Copy Delete	Light	Walking	35
Edit Copy Delete	Strength	Pushups	25
Edit Copy Delete	HIIT	Burpees	20
Edit Copy Delete	Cardio	Jogging	40
Edit Copy Delete	Strength	Squats	30

Check all *With selected:* Edit Copy Delete Export

- **Find all users who logged a "Cardio" workout.**

```
   SELECT DISTINCT u.First_Name, u.Last_Name
FROM Users u
JOIN Workout w ON u.User_Id = w.User_Id
WHERE w.Workout_Type = 'Cardio';


```

	User_Id	First_Name	Last_Name	Email	Gender	Age	Height	Weight
Edit Copy Delete	1	Rahim	Uddin	rahim.uddin@example.com	Male	28	5.8	68.5
Edit Copy Delete	2	Karim	Hossain	karim.hossain@example.com	Male	35	5.6	72
Edit Copy Delete	3	Shorna	Akter	shorna.akter@example.com	Female	25	5.4	55.2
Edit Copy Delete	4	Nusrat	Jahan	nusrat.jahan@example.com	Female	30	5.5	58.7
Edit Copy Delete	5	Tanjim	Ahmed	tanjim.ahmed@example.com	Male	22	5.7	65

- **Retrieve all meals consumed with more than 500 calories**

```
   SELECT * FROM Nutrition
WHERE Calories > 500;


```

	Meal_Id	User_Id	Goal_Id	Metric_Id	Calories	Carbs	Protein	Fats	Fiber	Meal_Type
Edit Copy Delete	1	1	1	1	1800	200	90	65	30	Full Day
Edit Copy Delete	2	2	2	2	2200	250	100	70	32	Full Day
Edit Copy Delete	3	3	3	3	2100	230	120	60	35	Full Day
Edit Copy Delete	4	4	4	4	1900	210	85	55	28	Full Day
Edit Copy Delete	5	5	5	5	2000	220	95	60	29	Full Day
Edit Copy Delete	6	6	6	6	1700	190	80	50	27	Full Day
Edit Copy Delete	7	7	7	7	2300	270	110	75	34	Full Day
Edit Copy Delete	8	8	8	8	1950	215	88	58	30	Full Day
Edit Copy Delete	9	9	9	9	2400	280	125	78	36	Full Day
Edit Copy Delete	10	10	10	10	1850	205	92	52	31	Full Day

Check all *With selected:* Edit Copy Delete Export

- **List users who have a surgery record.**

```sql
   SELECT u.First_Name, u.Last_Name, m.Surgery
FROM Users u
JOIN Medical_History m ON u.User_Id = m.User_Id
WHERE m.Surgery IS NOT NULL AND m.Surgery <> 'None';
```

Extra options

First_Name	Last_Name	Surgery
Karim	Hossain	Knee Surgery
Shorna	Akter	Appendix Removal
Tanjim	Ahmed	Tonsil Surgery
Sabbir	Hasan	Shoulder Injury

- **Get all health metrics recorded after 2025-01-01.**

```sql
   SELECT * FROM Health_Metrics
WHERE Date > '2025-01-01';
```

	Metric_Id	User_Id	Steps	BMI	Sleep_Hours	Heart_rate	Date
Edit Copy Delete	1	1	7500	22.5	7.5	72	2025-04-15
Edit Copy Delete	2	2	6500	24.3	6.5	75	2025-04-15
Edit Copy Delete	3	3	8000	20.1	8	68	2025-04-15
Edit Copy Delete	4	4	7200	21.7	7	70	2025-04-15
Edit Copy Delete	5	5	9000	22.8	7.8	69	2025-04-15
Edit Copy Delete	6	6	6800	19.5	6.5	67	2025-04-15
Edit Copy Delete	7	7	6000	25	6	78	2025-04-15
Edit Copy Delete	8	8	7300	22.3	7.2	71	2025-04-15
Edit Copy Delete	9	9	10000	21	8	65	2025-04-15
Edit Copy Delete	10	10	8500	20.8	7.5	66	2025-04-15

Check all *With selected:* Edit Copy Delete Export

- **Find users with heart rate above 75.**

```sql
    SELECT u.First_Name, u.Last_Name, h.Heart_rate
FROM Users u
JOIN Health_Metrics h ON u.User_Id = h.User_Id
WHERE h.Heart_rate > 75;


```

First_Name	Last_Name	Heart_rate
Sabbir	Hasan	78

- **List all goals with their target descriptions.**

```sql
    SELECT Target, Goal_Type
FROM Goal;


```

☐	Edit	Copy	Delete	Lose 5kg in 2 months	Weight Loss
☐	Edit	Copy	Delete	Run 5K in under 30 mins	Endurance
☐	Edit	Copy	Delete	Gain muscle mass	Muscle Gain
☐	Edit	Copy	Delete	Improve sleep quality	Wellness
☐	Edit	Copy	Delete	Stay lean and active	Fitness
☐	Edit	Copy	Delete	Improve digestion	Nutrition
☐	Edit	Copy	Delete	Reduce BMI	Health
☐	Edit	Copy	Delete	Tone body	Toning
☐	Edit	Copy	Delete	Stay fit for sports	Performance
☐	Edit	Copy	Delete	Gain healthy weight	Weight Gain

- **Find users targeting Weight Loss**

```sql
SELECT u.First_Name, u.Last_Name
FROM users u
JOIN Goal g ON u.User_Id = g.User_Id
WHERE g.Goal_Type = 'Weight Loss';


```

Extra options

First_Name	Last_Name
Rahim	Uddin

☐ Show all | Number of rows: 25 Filter rows: Search this table

- **Retrieve all users who have allergies**

```sql
SELECT u.First_Name, u.Last_Name, m.Allergy
FROM users u
JOIN Medical_History m ON u.User_Id = m.User_Id
WHERE m.Allergy IS NOT NULL AND m.Allergy <> 'None'


```

Extra options

First_Name	Last_Name	Allergy
Rahim	Uddin	Pollen
Shorna	Akter	Dust
Nusrat	Jahan	Seafood
Mithila	Rahman	Peanuts
Farzana	Sultana	Eggs
Maliha	Nasrin	Gluten

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

- **Show workouts and associated health metric BMI**

```sql
SELECT w.Exercise, h.BMI
FROM Workout w
JOIN Health_Metrics h ON w.Metric_Id = h.Metric_Id

```

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

Extra options

Exercise	BMI
Running	22.5
Cycling	24.3
Weight Lifting	20.1
Stretching	21.7
Swimming	22.8
Walking	19.5
Pushups	25
Burpees	22.3
Jogging	21
Squats	20.8

- ## Find users who sleep less than 7 hours on average

```
SELECT u.First_Name, u.Last_Name, h.Sleep_Hours
FROM users u
JOIN Health_Metrics h ON u.User_Id = h.User_Id
WHERE h.Sleep_Hours < 7;
```

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

Extra options

First_Name	Last_Name	Sleep_Hours
Karim	Hossain	6.5
Mithila	Rahman	6.5
Sabbir	Hasan	6

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

Query results operations

- ## Find total steps taken by all users

```
SELECT SUM(Steps) AS Total_Steps
FROM Health_Metrics;
```

Show all | Number of rows: 25 Filter rows: Search this table

Extra options

Total_Steps
76800

Show all | Number of rows: 25 Filter rows: Search this table

- ## Count the number of users by gender

```
SELECT Gender, COUNT(*) AS Number_of_Users
FROM users
GROUP BY Gender;
```

Extra options

Gender	Number_of_Users
Female	5
Male	5

Show all | Number of rows: 25 Filter rows: Search this table

- **Retrieve all strength workouts**

```sql
SELECT * FROM Workout
WHERE Workout_Type = 'Strength';
```

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

Extra options

	Workout_Id	User_Id	Goal_Id	Metric_Id	Workout_Type	Exercise	Duration
Edit Copy Delete	3	3	3	3	Strength	Weight Lifting	60
Edit Copy Delete	7	7	7	7	Strength	Pushups	25
Edit Copy Delete	10	10	10	10	Strength	Squats	30

Check all *With selected:* Edit Copy Delete Export

- **Show users who completed cardio exercises longer than 40 minutes**

```sql
SELECT u.First_Name, u.Last_Name, w.Exercise, w.Duration
FROM users u
JOIN Workout w ON u.User_Id = w.User_Id
WHERE w.Workout_Type = 'Cardio' AND w.Duration > 40;
```

Extra options

First_Name	Last_Name	Exercise	Duration
Rahim	Uddin	Running	45
Tanjim	Ahmed	Swimming	50

- **List meals with high protein (more than 30g**

```sql
SELECT * FROM Nutrition
WHERE Protein > 30;
```

Extra options

Meal_Id	User_Id	Goal_Id	Metric_Id	Calories	Carbs	Protein	Fats	Fiber	Meal_Type
1	1	1	1	1800	200	90	65	30	Full Day
2	2	2	2	2200	250	100	70	32	Full Day
3	3	3	3	2100	230	120	60	35	Full Day
4	4	4	4	1900	210	85	55	28	Full Day
5	5	5	5	2000	220	95	60	29	Full Day
6	6	6	6	1700	190	80	50	27	Full Day
7	7	7	7	2300	270	110	75	34	Full Day
8	8	8	8	1950	215	88	58	30	Full Day
9	9	9	9	2400	280	125	78	36	Full Day
10	10	10	10	1850	205	92	52	31	Full Day

Edit Copy Delete | Check all | With selected: Edit Copy Delete Export

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

Console

- **Find users whose BMI is above 24.9 (overweight threshold)**

```
    SELECT u.First_Name, u.Last_Name, h.BMI
    FROM users u
    JOIN Health_Metrics h ON u.User_Id = h.User_Id
    WHERE h.BMI > 24.9;
```

Extra options

First_Name	Last_Name	BMI
Sabbir	Hasan	25

Show all | Number of rows: 25 | Filter rows: Search this table

- **Update a users weight**

```
    UPDATE Users
SET Weight = 65.0
WHERE User_Id = 5;
```

User_Id	First_Name	Last_Name	Email	Gender	Age	Height	Weight
1	Rahim	Uddin	rahim.uddin@example.com	Male	28	5.8	68.5
2	Karim	Hossain	karim.hossain@example.com	Male	35	5.6	72
3	Shorna	Akter	shorna.akter@example.com	Female	25	5.4	55.2
4	Nusrat	Jahan	nusrat.jahan@example.com	Female	30	5.5	58.7
5	Tanjim	Ahmed	tanjim.ahmed@example.com	Male	22	5.7	65

- **Update the sleep hours in health metrics.**

```
  UPDATE Health_Metrics
SET Sleep_Hours = 8.5
WHERE Metric_Id = 3;
```

	Metric_Id	User_Id	Steps	BMI	Sleep_Hours	Heart_rate	Date
Edit Copy Delete	1	1	7500	22.5	7.5	72	2025-04-15
Edit Copy Delete	2	2	6500	24.3	6.5	75	2025-04-15
Edit Copy Delete	3	3	8000	20.1	8.5	68	2025-04-15

- **Create a new workout record**

```
  INSERT INTO Workout (Workout_Id, User_Id, Goal_Id, Metric_Id, Workout_Type,
    Exercise, Duration)
VALUES
(11, 2, 2, 2, 'Strength', 'Deadlifts', 50);
```

Extra options

	Workout_Id	User_Id	Goal_Id	Metric_Id	Workout_Type	Exercise	Duration
Edit Copy Delete	1	1	1	1	Cardio	Running	45
Edit Copy Delete	2	2	2	2	Cardio	Cycling	40
Edit Copy Delete	3	3	3	3	Strength	Weight Lifting	60
Edit Copy Delete	4	4	4	4	Yoga	Stretching	30
Edit Copy Delete	5	5	5	5	Cardio	Swimming	50
Edit Copy Delete	6	6	6	6	Light	Walking	35
Edit Copy Delete	7	7	7	7	Strength	Pushups	25
Edit Copy Delete	8	8	8	8	HIIT	Burpees	20
Edit Copy Delete	9	9	9	9	Cardio	Jogging	40
Edit Copy Delete	10	10	10	10	Strength	Squats	30
Edit Copy Delete	11	2	2	2	Strength	Deadlifts	50

- **Delete a nutrition record with mealID-5.**

```
    DELETE FROM Nutrition
WHERE Meal_Id = 5;
```

	Meal_Id	User_Id	Goal_Id	Metric_Id	Calories	Carbs	Protein	Fats	Fiber	Meal_Type
Edit Copy Delete	1	1	1	1	1800	200	90	65	30	Full Day
Edit Copy Delete	2	2	2	2	2200	250	100	70	32	Full Day
Edit Copy Delete	3	3	3	3	2100	230	120	60	35	Full Day
Edit Copy Delete	4	4	4	4	1900	210	85	55	28	Full Day
Edit Copy Delete	6	6	6	6	1700	190	80	50	27	Full Day
Edit Copy Delete	7	7	7	7	2300	270	110	75	34	Full Day
Edit Copy Delete	8	8	8	8	1950	215	88	58	30	Full Day
Edit Copy Delete	9	9	9	9	2400	280	125	78	36	Full Day
Edit Copy Delete	10	10	10	10	1850	205	92	52	31	Full Day

- **Create a view listing users and their latest BMI**

```sql
 CREATE VIEW User_BMI_View AS
SELECT
    U.User_Id,
    U.First_Name,
    U.Last_Name,
    U.Age,
    U.Gender,
    HM.BMI,
    HM.Date
FROM Users U
JOIN Health_Metrics HM ON U.User_Id = HM.User_Id;


```

Extra options

	User_Id	First_Name	Last_Name	Age	Gender	BMI	Date
Edit Copy Delete	1	Rahim	Uddin	28	Male	22.5	2025-04-15
Edit Copy Delete	2	Karim	Hossain	35	Male	24.3	2025-04-15
Edit Copy Delete	3	Shorna	Akter	25	Female	20.1	2025-04-15
Edit Copy Delete	4	Nusrat	Jahan	30	Female	21.7	2025-04-15
Edit Copy Delete	5	Tanjim	Ahmed	22	Male	22.8	2025-04-15
Edit Copy Delete	6	Mithila	Rahman	27	Female	19.5	2025-04-15
Edit Copy Delete	7	Sabbir	Hasan	32	Male	25	2025-04-15
Edit Copy Delete	8	Farzana	Sultana	29	Female	22.3	2025-04-15
Edit Copy Delete	9	Anik	Chowdhury	19	Male	21	2025-04-15
Edit Copy Delete	10	Maliha	Nasrin	24	Female	20.8	2025-04-15

Check all *With selected:* Edit Copy Delete Export

Show all | Number of rows: 25 Filter rows: Search this table

- **List users who had surgeries and their current workout type**

```sql
     SELECT U.First_Name, U.Last_Name, MH.Surgery, W.Workout_Type, W.Exercise
FROM Medical_History MH
JOIN Workout W ON MH.Workout_Id = W.Workout_Id
JOIN Users U ON MH.User_Id = U.User_Id
WHERE MH.Surgery != 'None';
```

```
6
7
```

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

Show all | Number of rows: 25 Filter rows: Search this table

Extra options

First_Name	Last_Name	Surgery	Workout_Type	Exercise
Karim	Hossain	Knee Surgery	Cardio	Cycling
Shorna	Akter	Appendix Removal	Strength	Weight Lifting
Tanjim	Ahmed	Tonsil Surgery	Cardio	Swimming
Sabbir	Hasan	Shoulder Injury	Strength	Pushups

Show all | Number of rows: 25 Filter rows: Search this table

Query results operations

- **Find users with allergies doing intense workouts (HIIT, Strength)**

```sql
    SELECT U.First_Name, U.Last_Name, MH.Allergy, W.Workout_Type
FROM Medical_History MH
JOIN Workout W ON MH.Workout_Id = W.Workout_Id
JOIN Users U ON MH.User_Id = U.User_Id
WHERE MH.Allergy != 'None'
  AND W.Workout_Type IN ('HIIT', 'Strength');
```

Show all | Number of rows: 25 Filter rows: Search this table

Extra options

First_Name	Last_Name	Allergy	Workout_Type
Shorna	Akter	Dust	Strength
Farzana	Sultana	Eggs	HIIT
Maliha	Nasrin	Gluten	Strength

Show all | Number of rows: 25 Filter rows: Search this table

- **Average workout duration based on medical history**

```sql
SELECT
    CASE WHEN MH.Surgery = 'None' THEN 'No Surgery' ELSE 'Surgery' END AS
   Surgery_Status,
    AVG(W.Duration) AS Avg_Workout_Duration
FROM Medical_History MH
JOIN Workout W ON MH.Workout_Id = W.Workout_Id
GROUP BY Surgery_Status;
```

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

Show all | Number of rows: 25 Filter rows: Search this table

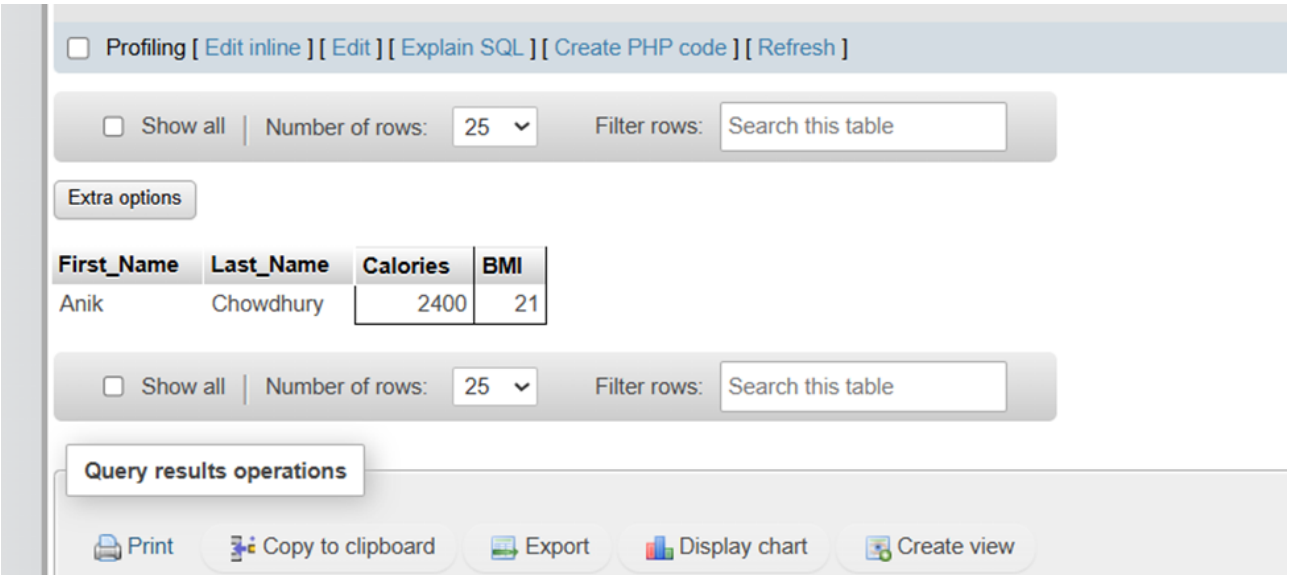
Extra options

Surgery_Status	Avg_Workout_Duration
No Surgery	33.3333
Surgery	43.7500

Show all | Number of rows: 25 Filter rows: Search this table

- **Find users eating above 2200 calories but still losing weight**

```sql
SELECT U.First_Name, U.Last_Name, N.Calories, HM.Weight
FROM Users U
JOIN Nutrition N ON U.User_Id = N.User_Id
JOIN Health_Metrics HM ON U.User_Id = HM.User_Id
WHERE N.Calories > 2200
AND HM.BMI < 24;
```



9 Conclusions

TrackFit is an all-in-one health management system that enables users to take control of their fitness. By integrating workout planning, nutritional tracking, and goal setting into a single system, it streamlines health management and makes it more efficient. The system creates individual user profiles, such as key health data like BMI, fitness level, and medical history, to enable personalization of feedback and recommendations. With features like workout logging, nutrition tracking, and goal setting, TrackFit keeps users organized and motivated. It tracks exercise details such as type, duration, and intensity, and also follows daily caloric consumption and macronutrient balance. This personalized process allows users to make informed decisions about workouts and diet. TrackFit adapts to users' unique health needs, providing personalized recommendations and insights to help them achieve their fitness goals, whether that's weight loss, muscle building, or enhanced endurance. By promoting a methodical, data-driven approach, TrackFit supports long-term health and fitness, helping users of all fitness levels reach their goals and live healthier lives.

10 Acknowledgements

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Together, we combined our strengths to bring TrackFit: Smarter Tracking for a Healthier Life to life—a project we're truly proud of.