

## Entities

### User

```
{
  _id: ObjectId,
  name: String,
  email: String,
  phone: String,
  passwordHash: String, // for secure login
  gender: "male" | "female" | "other",
  dateOfBirth: Date,
  heightCm: Number,
  weightKg: Number,
  profileImageUrl: String, // optional

  preferences: {
    preferredWorkoutTime: String, // "06:30"
    preferredMealReminders: [String], // ["08:00", "13:00", "20:00"]
    moodReminderTime: String // "21:00"
  },
}
```

### Exercise module

```
exercise: {
  defaultPlanId: ObjectId, // from WorkoutPlan
  customPlanIds: [ObjectId], // from WorkoutPlan
  activeGoalId: ObjectId, // from Goal
  streakCount: Number,
  lastWorkoutDate: Date,
  totalCaloriesBurned: Number,
  totalWorkoutTimeMinutes: Number,
  badgels: [ObjectId] // from Badge
},
```

### Nutrition & Diet module

```
nutrition: {
  defaultMealPlanId: ObjectId, // from MealPlan
  customMealPlanIds: [ObjectId], // from MealPlan
  waterTargetLiters: Number,
  totalWaterDrunkToday: Number,
  calorieTargetPerDay: Number,
}
```

```
nutritionStats: {  
  protein: Number,  
  carbs: Number,  
  fats: Number,  
  fiber: Number,  
  sugar: Number,  
  vitamins: [String]  
}  
},
```

Mental Health module

```
mental: {  
  lastMoodLogged: Date,  
  weeklyMentalHealthReportId: ObjectId // from MentalHealthReport  
},  
createdAt: Date,  
updatedAt: Date  
}
```

### **Workoutplan**

```
{  
  _id: ObjectId,  
  name: String,  
  type: "default" | "custom",  
  userId: ObjectId, // null for default plans  
  exercises: [ObjectId], // list of Exercise _ids  
  createdAt: Date  
}
```

### **Exercise**

```
{  
  _id: ObjectId,  
  name: String,  
  category: String, // e.g., Strength, Cardio  
  durationType: "time" | "reps",  
  defaultSets: Number,  
  defaultReps: Number,  
  defaultDurationSec: Number, // if time-based  
  intensity: String, // e.g., "Low", "Medium", "High"
```

```
targetMuscles: [String],
videoUrl: String,
instructions: String
}
```

### **Badge**

```
{
  _id: ObjectId,
  name: String,           // e.g., "Streak Master", "500 Calorie Burner"
  description: String,    // e.g., "Awarded for 10-day workout streak"
  imageUrl: String,       // image/icon for badge
  condition: {
    type: "streak" | "calories" | "workouts" | "time",
    threshold: Number      // e.g., 10 for streak, 500 for calories, etc.
  },
  createdAt: Date
}
```

### **ExerciseLog**

```
{
  _id: ObjectId,
  userId: ObjectId,
  exerciseId: ObjectId,
  date: Date,
  startTime: Date,
  endTime: Date,
  sets: Number,
  reps: Number,
  durationSec: Number,
  caloriesBurned: Number,
  notes: String
}
```

### **Goal**

```
{
  _id: ObjectId,
  userId: ObjectId,
  type: "weekly" | "daily",
  metric: "workouts" | "calories" | "minutes" | "steps",
  targetValue: Number,
}
```

```
    currentValue: Number,  
    startDate: Date,  
    endDate: Date,  
    completed: Boolean  
}
```

### **MealPlan**

```
{  
  _id: ObjectId,  
  name: String,  
  type: "default" | "custom",  
  userId: ObjectId, // null for default plans  
  meals: [ObjectId], // list of Meal _ids  
  createdAt: Date  
}
```

### **Meal**

```
{  
  _id: ObjectId,  
  name: String,  
  description: String,  
  foodItems: [ObjectId], // references to FoodItem  
  loggedTime: Date, // actual meal time  
  userId: ObjectId,  
  mealType: "breakfast" | "lunch" | "dinner" | "snack"  
}
```

### **FoodItem**

```
{  
  _id: ObjectId,  
  name: String,  
  calories: Number,  
  servingSize: String,  
  macronutrients: {  
    protein: Number, // grams  
    carbs: Number, // grams  
    fat: Number // grams  
  },  
  micronutrients: {  
    vitaminA: Number,
```

```
    vitaminC: Number,  
    iron: Number,  
    calcium: Number,  
  }  
}
```

### **WaterLog**

```
{  
  _id: ObjectId,  
  userId: ObjectId,  
  amountML: Number,  
  time: Date  
}
```

### **NutritionStats**

```
{  
  _id: ObjectId,  
  userId: ObjectId,  
  date: Date,  
  totalCalories: Number,  
  macros: {  
    protein: Number,  
    carbs: Number,  
    fat: Number  
  },  
  micros: {  
    vitaminA: Number,  
    iron: Number,  
    calcium: Number,  
  },  
  waterConsumedML: Number  
}
```

### **MoodLog**

```
{  
  _id: ObjectId,  
  userId: ObjectId,  
  mood: "happy" | "sad" | "anxious" | "angry" | "calm" | "stressed" | "neutral",  
  note: String,  
  timestamp: Date  
}
```

```
}
```

### **BreathingExercise**

```
{  
  _id: ObjectId,  
  name: String,  
  description: String,  
  moodTarget: ["anxious", "stressed", "sad"], // moods this exercise helps with  
  durationSeconds: Number,  
  videoUrl: String, // optional  
  steps: [String], // step-by-step instructions  
}
```

### **MentalHealthReport**

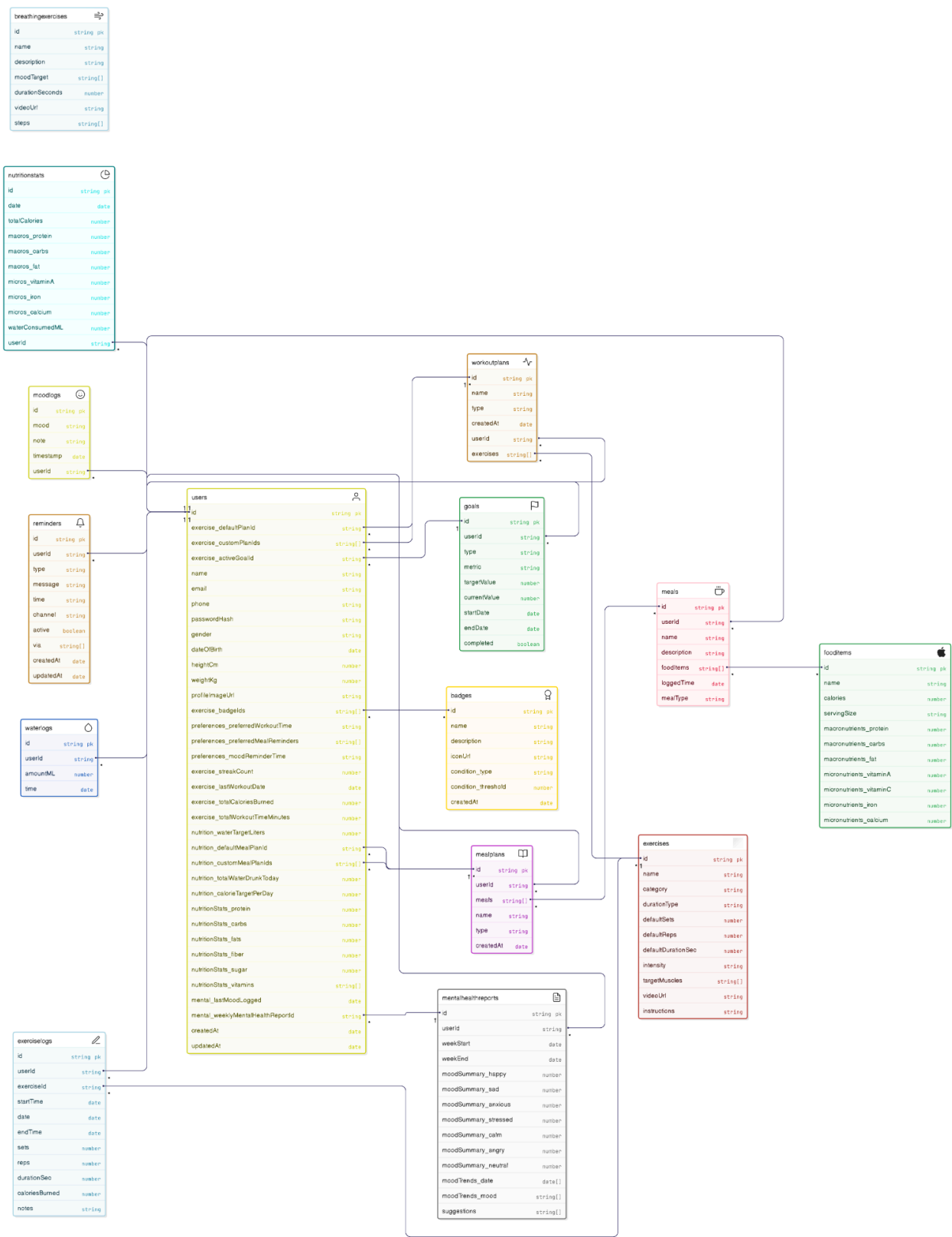
```
{  
  _id: ObjectId,  
  userId: ObjectId,  
  weekStart: Date,  
  weekEnd: Date,  
  moodSummary: {  
    happy: Number,  
    sad: Number,  
    anxious: Number,  
    stressed: Number,  
    calm: Number,  
    angry: Number,  
    neutral: Number  
  },  
  moodTrends: [ // optional - for visualization  
    {  
      date: Date,  
      mood: String  
    }  
  ],  
  suggestions: [String]  
}
```

### **Reminder**

```
{  
  _id: ObjectId,
```

```
userId: ObjectId,  
type: "workout" | "meal" | "water" | "mood",  
message: String,      // e.g., "Time for your workout!" or "Log your mood"  
time: String,         // "06:30", "13:00", etc.  
channel: "sms" | "email",  
active: Boolean,      // if the reminder is currently enabled  
via: [String],        // ["sms"]  
createdAt: Date,  
updatedAt: Date  
}
```

# ER Diagram





# API Documentation

## User Service

POST /auth/register: Register a new user.

POST /auth/login: Login user and return token.

GET /users/me: Fetch logged-in user profile.

PUT /users/me: Update user profile.

PUT /users/preferences: Update user preferences (workout time, meal reminders, etc).

## Exercise Service

### -Workout Plan

GET /workout-plans: Get all default + user's custom plans.

POST /workout-plans: Create a custom workout plan.

GET /workout-plans/:id: Get plan details by ID.

PUT /workout-plans/:id: Update a custom workout plan.

DELETE /workout-plans/:id: Delete a custom workout plan.

PUT /users/exercise/select-plan: Select a default/custom plan for the user.

### -Exercise

GET /exercises: Get all exercises.

POST /exercises: Add a new exercise (admin only).

GET /exercises/:id: Get exercise details.

### -Workout Session Flow

POST /exercise-log/start-session: Start a new workout session.

POST /exercise-log/log: Log an individual exercise (done button).

POST /exercise-log/end-session: Complete session and calculate summary (time, calories, etc.).

GET /exercise-log/today: Get today's session log.

### -Goals

POST /goals: Create a goal (e.g., calories, time, steps).

PUT /goals/:id: Update goal progress.

GET /goals/active: Get active goal for user.

### -Streaks & Badges

GET /users/streak: Get current workout streak.

GET /badges: Get all badges user earned.

GET /badges/check: Check for new badges (after workout).

POST /badges/assign: Assign badge to user (automated after session if threshold met).

#### -Dashboard

GET /dashboard/exercise: Return today's workout plan, streak, calories burned, time worked out.

GET /exercise-summary: Summary of workout session.

GET /suggestions/workouts: provide suggestion of workout based on the user goals and the stats

### **Nutrition Service**

#### -Meal Plan

GET /meal-plans: Get all meal plans (default + custom).

POST /meal-plans: Create a custom meal plan.

PUT /meal-plans/:id: Update a custom meal plan.

DELETE /meal-plans/:id: Delete a custom meal plan.

PUT /users/nutrition/select-meal-plan: Select default or custom plan.

GET /suggestions/meals: suggest meals according to stats

#### -Meals

POST /meals: Log a meal with food items.

GET /meals/today: Get today's meals.

PUT /meals/:id: Update a logged meal.

DELETE /meals/:id: Delete a logged meal.

#### -Food Items

GET /food-items: List food items with calories & macros.

POST /food-items: Add a new food item (admin).

#### -Water Logging

POST /water-log: Log water intake.

GET /water-log/today: Get today's water logs.

#### -Nutrition Statistics

GET /nutrition-stats/today: Get today's stats (calories, macros, micros).

GET /dashboard/nutrition: Dashboard with daily nutrition overview.

## **Mental Health Service**

### **-Mood Logging**

POST /mood-log: Log mood and optional note.

GET /mood-log/today: Get today's mood.

GET /mood-log/weekly-summary: Weekly mood summary for dashboard.

### **-Breathing Exercises**

GET /breathing-exercises?mood=anxious: Get breathing exercises suitable for mood.

### **-Mental Health Reports**

GET /mental-health-report/current-week: Weekly mood breakdown with suggestions.

GET /suggestions/mental:provide mental health tips

## **Reminder Service**

POST /reminders: Create a reminder (meal, workout, mood, water).

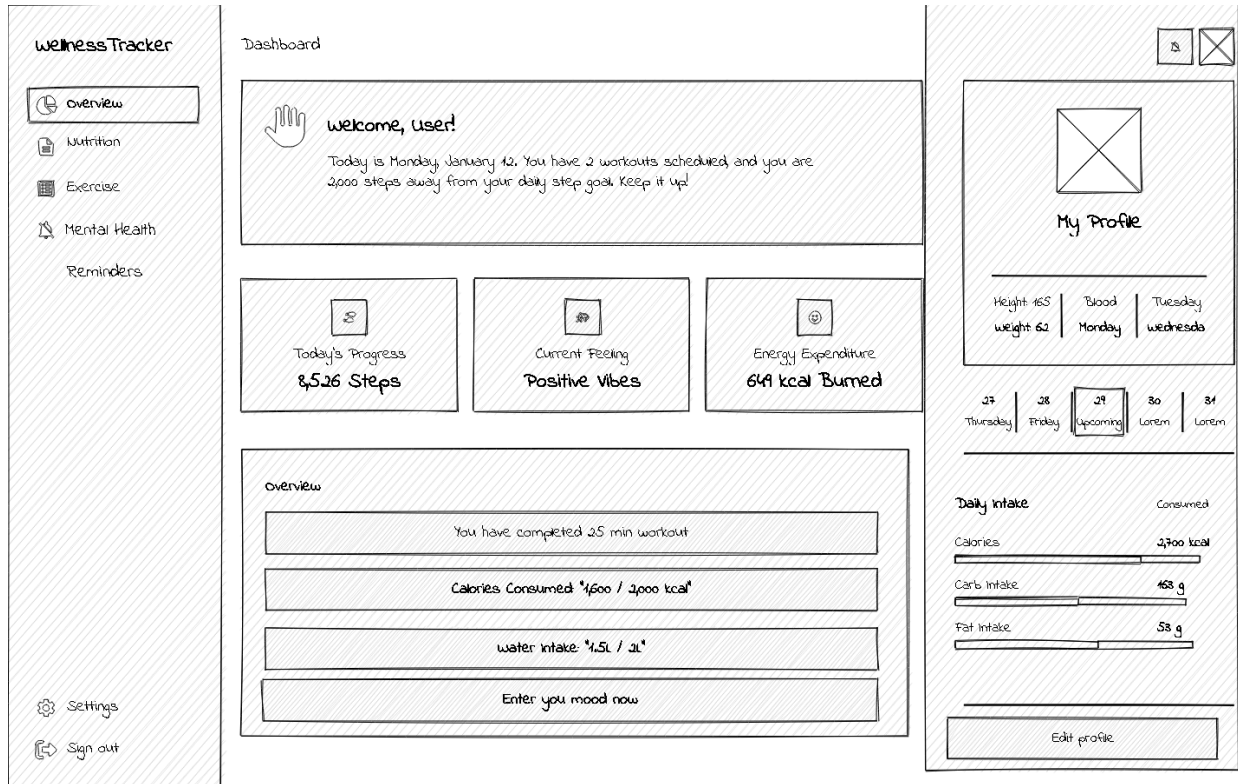
GET /reminders: List all reminders.

PUT /reminders/:id: Update a reminder.


DELETE /reminders/:id: Delete a reminder.

# Wireframe

## Home Page



# Exercise Dashboard

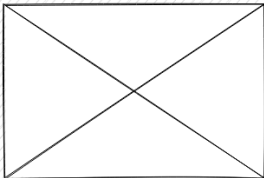
 WellnessTracker

[Main Dashboard](#)[Exercise Dashboard](#)[Nutrition & Diet Dashboard](#)[Mental Health Dashboard](#)

Workout Routine

Running	30 mins	200 kcal
Cycling	45 mins	350 kcal
Yoga	60 mins	180 kcal

Calories Burned over Time



Exercise Log

Push-ups	15 mins	100 kcal
Swimming	30 mins	300 kcal
Hiking	120 mins	500 kcal

Fitness Goals

☐ Run 5 km


☐ Cycle 20 km

☐ Yoga 3 times a week

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# Mental Health Dashboard

 wellnessTracker

Main Dashboard

Exercise

Nutrition & Diet

Mental Health

Mood Tracking

Stress Levels

Mindfulness Activities

guided Meditation

Yoga for Relaxation

Nature Walks

Goal Setting

Set a new goal

Add goal

Practice mindfulness daily

Reduce screen time before bed

Exercise for 30 minutes

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