FitnessTracker

main()

User

+ name: String
+ age: Int
+ height: Double
+ weight: Double
+ restingHeartRate: Int
+ tracker: Tracker

+ addTracker(tracker: Tracker): Unit
+ removeTracker(tracker: Tracker): Unit
+ updateAge(age: Int): Unit
+ updateHeight(height: Double): Unit
+ updateWeight(weight: Double): Unit
+ updateRestingHeartRate(heartRate: Int): Unit

Tracker

+ workouts: List [Workout]

+ addWorkout(workout: Workout): Unit
+ weeklyProgress(): Unit
+ monthlyProgress(): Unit
+ personalBests(): Unit

Workout

+ date: Date
+ exercises: List [Exercise]

+ addExercise(exercise: Exercise): Unit
+ totalReps(): Unit
+ totalDistance(): Unit
+ totalDuration(): Unit
+ avgHeartRate(): Unit
+ totalWeightMoved(): Unit

Exercise

+ name: String
+ exerciseType: ExerciseType
+ weightUsed: Int
+ repetitions: Int
+ sets: Int
+ distance: Int
+ duration: String
+ activeHeartRate: Int

ExerciseType (Enum)

+ strength
+ endurance
+ cardio

Program Functionality

The fitness tracker system allows an individual user to create their own personal account for managing and recording workouts by date. The user will first input informational data in their profile that relates to their fitness level and body. They then will be able to record workouts by the date of the workout. A "workout" will consist of many exercises which will be instantiated objects of the "Exercise" class.

The primary function of the "Workout" class is to group exercises into a list but also to process the data through methods and present new insights to the user about their performance. The "Exercise" class has many data members that relate to that exercise, such as the weights used, reps and sets performed, and active heart rate during the workout.

Thus, the "Exercise" class saves the important information relating to each exercise in the workout and the "Workout" class aggregates the data of all the exercises in the workout to calculate totals, averages, and further insights. At the top, is the "Tracker" class, which will consist of a list of workouts ordered by date. The "Trackers" overall purpose is to organize the workouts into an ordered list, and also to provide methods that can present weekly and monthly progress reports and also inform the user of their personal bests so far, such as longest distance, highest rep count, heaviest weight, and highest active heart rate maintained.