RepQuest

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# Abstract

RepQuest is an Android-native application that allows users to input and track custom workouts while simultaneously providing for an entertaining experience that incentivizes commitment to the user’s fitness goals. The app allows users to create custom workout templates, log metrics such as sets, reps, weight, or distance in real time, and run a built-in rest timer that persists in the background. To drive consistency, a lightweight gamification layer awards experience points for completing sessions, hitting new personal records (PRs), and maintaining streaks. PRs are automatically detected, and progress can be visualized through graphs generated from user data. By coupling convenient workout tracking with motivational feedback loops, RepQuest aims to foster improved adherence to fitness goals, celebrate incremental progress, and make structured training more engaging and accessible for athletes of any sport at any level of experience.

# Tools & Technology

Figma

GitHub Desktop

Android Studio

Firebase

# Requirements

1. Navigation Bar
   1. On the bottom of the screen, persistent throughout the entire app unless the user is in an exercise
   2. Has a button to switch to Workout Screen
   3. Has a button to switch to History
   4. Has a button to switch to Stats
   5. Has a button for the Goals/Gamification Tab
   6. Has a button for Settings
2. Workout Screen
   1. “Create a Workout” Button
      1. “Add Exercise” Button
         1. Textbox for Exercise name
         2. “Unit of Completion” Radio Buttons (Reps, Distance, time, etc.)
            1. If Reps, Numerical Input for weight of instrument if necessary
         3. “Incremental” Checkbox
            1. If selected, a numerical input for how much to increment an exercise will appear
         4. Numerical Input for a finished rep/distance/time/etc
         5. Numerical Input for number of sets
         6. Checkbox for option to add a resting period
            1. If checked, Numerical Input for how long to rest for
         7. Confirm/Submit Button
         8. User can choose to save the Workout as a Workout Template
      2. “Remove Exercise” Button
   2. Select a Workout Template
      1. User can select from a list of saved Workout Templates
      2. User can swipe left on an exercise to remove it from the list
3. (Workout Screen) Screen During an Exercise
   1. Each exercise will be in a vertical list, and each exercise will have the following
      1. A label that displays the name of the exercise
      2. A textbox across from the exercise name
         1. The textbox only shows if the exercise consists of reps or a distance
         2. The textbox will be editable so the user can change these metrics on demand if need be.
      3. Circles underneath the exercise to measure completions
         1. The number of circles corresponds to the number of sets in the exercise
         2. Each circle can be tapped to perform a function
            1. For reps, tapping the button marks the completion of a set

The user can tap the circle again to decrement the number of reps completed

* + - * 1. For distance exercises, tapping the circle once will start a timer

The user must tap the circle again to mark the completion of a set and stop the timer

* + - * 1. For timed exercises, pressing a circle will start a countdown timer
        2. Once a set of an exercise has been marked as completed, the rest timer will start at the bottom of the screen
  1. A quit button/back arrow will appear in the top right
     1. A window will pop up asking the user to confirm they want to quit early
  2. Once a Workout has been completed, the results and notes will be saved and stored in the history tab
  3. Once a Workout has been completed, the data will be sent to the Stats and Goals Pages

1. (Workout Screen) Rest Timer
   1. After a set of an exercise has been completed, the rest timer will activate.
      1. The rest timer can be paused/extended by tapping the pause button
      2. The timer will remain running in the background if the user switches apps.
      3. Upon completion of the timer, a chime will be made to notify the user to start the next set
      4. Within the rest period, the user will have the option to make any notes about the prior workout
         1. Notes will be saved with the workout in the History tab
      5. There will be a button to stop an exercise early if the user feels they cannot continue the current exercise
2. History
   1. The user will be able to view workouts they have previously attempted in a calendar format
      1. The user can tap a day on the calendar to see the workout details of that day
   2. The user will see any notes they made for that workout
3. Stats
   1. Stats will be shown in a vertical list
      1. Will show the most used goal for each exercise
      2. Will show the highest achieved goal for each exercise
   2. Each exercise can be tapped on to view the trends of each exercise
      1. These trends will also be displayed as a chart
4. Goals/Gamification
   1. The user will be able to set their own goals for each exercise that they aspire to reach
   2. Goals are logged upon achievement.
      1. The goal log can be viewed within the stats section.
      2. The goal log will show all achieved, attempted, and in progress goals.
   3. The user will see their experience and level on this screen
   4. The app is designed around a pixel art style game to enhance user experience.
      1. The gamification art style will present a colorful user experience
         1. The style presents a colorful “16-bit overhead” design.
         2. The art style will be similar to “Stardew Valley” or “Habatica”
         3. The avatar creation will have two radio buttons.
            1. Male
            2. Female
5. Settings
   1. Settings will be shown in a vertical list
      1. Toggle for vibration upon a completed rest timer
      2. Toggle for an audible chime upon a completed rest timer
      3. Option to set default unit of measurement for distance
6. Saving to a Database
   1. The app will periodically save all data to a database
      1. Certain actions may cause a save to happen immediately, which include, but is not limited to:
         1. Creating a Workout Template
         2. Completing a Workout
         3. Confirming a change in Settings

Timeline

* Proposal Stage (8/26/25 - 9/20/25)
  + Complete the project proposal, and identify any current, or future risk. Identify the software, frameworks, IDE’s, and any operating systems that will be used for the creation of the project. The team will get all computers and laptops installed with the decided upon software the group has agreed to use. The group also plans to have scheduled group meetings, virtually and in person, to discuss these topics in further detail, till the end of the project to help facilitate communication and improve the quality of the project. The group also has to meet in and around others schedules.
* Training and Adjusting to Tools and IDEs (9/21/25 - 10/4/2025)
  + The team will get familiar with their software and further their experience in Kotlin, Android Studio, SQLite, Figma, GitHub, and any other necessary tools.
* App/UI Design (10/5/25 - 10/11/25)
  + Begin the base creation of the application and designing the user interface. Determine the main UI and which buttons link to which UI page.
    - 10/5/25: Start finalizing Main UI, start focusing on sub pages and other smaller UI elements
* App Creation/Code Implementation (10/12/25 - 11/8/25)
  + 10/12/25 - 10/19/25: Planning
    - Determine datatypes and data structures.
    - Determine which features need to be implemented first.
    - Determine which member implements what feature.
  + 10/20/25 - 11/8/25: Implementation
* Testing and Debugging (11/9/25 - 11/22/25)
  + Test all implemented features and fix as many bugs as possible.