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**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.

# **Description**

RepQuest is an Android-native application that provides users with a convenient and entertaining way to create and track custom workouts of various types. The app allows users to create custom workout templates, log metrics such as sets, reps, weight, or distance in real time, as well as track rest periods with a built-in timer that persists in the background. A lightweight gamification layer is applied over the app to incentivize consistency and enhance motivation to reach the user’s fitness goals. Users will receive experience points for various accomplishments such as completing sessions, maintaining workout streaks, and reaching new PRs. The goal of RepQuest is to make structured training more convenient and engaging to better allow for users to reach their fitness goals.

Many people begin training with ambitious goals but soon give up due to low motivation, poor feedback, and friction in tracking their progress. Moreover, many apps do not allow for a convenient way to structure and track a fully customizable workout plan that is not centered solely on either weightlifting or endurance-based sports. Other solutions such as paper notes, spreadsheets, and generic apps are slow, tedious, or distracting to manage mid-workout. As progress towards fitness goals tends to happen slowly, users need immediate, meaningful feedback loops to celebrate small victories and build momentum towards their goals. RepQuest seeks to meet these challenges by combining effortless tracking with playful, goal-oriented game features that promote positive feedback loops and celebrate small victories as well as major milestones.

The primary purpose of RepQuest is to increase workout adherence and enjoyment by transforming training into an experience that is both convenient to track and entertaining. People tend to sustain healthy habits when their effort is visible, progress is recognized in a meaningful way, and rewards align with their goals. Through convenient logging of customized workouts, graphs that show user progress towards their goals, and positive feedback loops, RepQuest can help users achieve more consistent training.

This app targets individuals of all experience levels, whether they are new to fitness, returning trainees seeking to rebuild consistency, or experienced athletes who value structured training and PR tracking. It is intended to be used primarily in the gym during sets, between sets for rest timing, and after workout sessions for reflection and planning. The basic workflow for the app first involves the user inputting their customized workout prior to beginning their training so they can then start a planned workout and flow through the exercises without losing focus. During the workout, the streamlined design of the app will allow the user to log sets/reps/weight or distance/time quickly with minimal taps. Rest periods will be tracked by a reliable, persistent timer that will remain in effect while switching views. At the end of the workout session, the user will be able to see any experience points earned, level-ups/power-ups acquired, PRs detected, and will have the opportunity to view trends in a graphical format so they may see the progress they have made and better plan future workouts.

With RepQuest, users will have access to a multitude of core features that will make training and tracking progress more convenient and entertaining. At the forefront, users will be able to create custom, reusable workout templates with full control over exercise selection as well as metrics such as sets/reps/weight, distance/time, and rest periods. Workouts can be either weight training based, endurance based, or a mix of both. Rest periods will be tracked with a reliable, easy to see timer that continues while the user browses other parts of the app or even while the app is running in the background. While training, users will be able to log their progress through the workout quickly using one-handed gestures with subtle haptic feedback to maximize convenience and minimize cognitive load. New PRs will be automatically recorded without any extra steps from the user. A lightweight gamification layer will award the user experience points for things like completing workouts, maintaining streaks, and hitting PRs which will allow the user to level up their profile and unlock various power-ups. The user will be able to visualize their progress over time with the inclusion of simple graphs that highlight trends, streaks, and recent victories.

RepQuest matters because it addresses the biggest reasons people abandon their fitness goals: inconvenience and fading motivation. Instead of fumbling with paper notes, spreadsheets, or apps intended for specific workout programs, users are able to build truly customized workouts that meet their goals, whether they be focused on weightlifting, endurance, or both. Progress is made visible to the user to provide meaningful training insights and help motivate the user to continue making progress. Also, new PRs are recognized automatically, small wins contribute to streaks, and sessions earn experience points that reinforce consistent training. This combination of tailored convenience and positive feedback provides a frictionless experience that turns slow, incremental improvement into a satisfying progression. By celebrating both small victories and major achievements, RepQuest has the potential to help newcomers stick with their training, returning athletes rebuild their momentum, and experienced lifters stay engaged with their training rather than feeling like a chore, increasing the likelihood that all users reach their fitness goals.

# **Feature List**

## Must Have

1. The user will be able to input custom exercises to create a custom workout template including the ability to:
   1. Set a custom exercise name
   2. Choose a “unit of completion” for the exercise, being either a repetition (rep), distance, or time period
   3. Set the rest period between sets of the exercise

## Could Have

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## Won’t Have

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# **Initial Set of Technologies**

* Platform: Phone, Tablet
* Operating System: Android OS
* IDE: Android Studio
* Languages: Kotlin, Java, SQL
* Frameworks: Jetpack Compose
* Database: SQLite
* UI Design: Figma
* Communication Software: Discord
* Version Control: Git, GitHub, GitHub Desktop
* AI Platform: ChatGPT
  + ChatGPT will be used more for general guidance, planning, and advice rather than writing substantial portions of code. This decision was made to foster the learning experience of the group in working with new technologies on a fairly large project.

# **Backgrounds**

## Dylan Hulon - Role

Familiarity with the Java, Python, SQL, and JavaScript programming languages as well as the JavaFX, React, React-Native, and TailwindCSS frameworks. Development environment experience includes IntelliJ, Visual Studio Code, and Android Studio. Functional knowledge of version control using git and GitHub. Experience with Windows, Android, and Debian based operating systems.

## Austin Jones - Role

Familiarity with Java programming, JavaFX programming, Lua script writing, as well as familiarity with Android operating systems. Minor experience in the physical construction of building desktop computers, specifically Windows OS. Very minor experience with Kotlin language and C/C++ language. Previous experience with a book renting service with the use of a database through Intelli-J’s IDE.

## Jaylen Cook - Role

Familiarity with Java and Kotlin programming languages. Experienced with Android Studios, IntelliJ, and Netbeans IDE. Some experience in 2D and 3D game design using Gamemaker Studio and Unity respectively. Experienced with GitHub.

## Benjamin Johnson - Role

Familiarity with Java and JavaFX, minor experience with other data-oriented, imperative, and object-oriented languages running on Linux, and previous work on a web-based application running on a server.

# **Dependencies, Limitations, and Risks**

## Dependencies

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## Limitations

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## Other Risks

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# **Timeline**

## Week 1

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## Week 2

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## Week 3

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## Week 4

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