

Activity Tracker Documentation

Vision

For a fitness enthusiast that likes to know every intimate detail of their workout, StatsWrap is an activity tracker that records and graphs all of one's fitness data in real time. This allows athletes to tailor their workouts with incredible accuracy. Unlike competitors, StatsWrap focuses on keeping your data secure and presenting high fidelity information in a concise live graph.

Activity Tracker Software FURPS Requirement Model:

F – Allows the user(s) to view their activity logs, or reported statistics from the software system. A unique user cannot open multiple sessions. The data being tracked can be reset at any time.

U - Software uses a Graphical User Interface to allow users to easily assess with all information provided electronically through a digital screen on the watch. Information on screen is presented clearly with a white background and black text to help colorblind users read their activity logs, etc.

R – The software will never fail on its own as long as the watch machine in use has the specified minimum required hardware and software without any lag, hitches, or crashes. Once a user begins using the activity tracker software, their data is stored and calculated within the program. The program can be opened and closed or reset at any given time but will not save any specific user's data.

P – The performance of the activity tracker software can handle many inputs and report several statistics at the same time. Information will be adding to the database of the software dynamically during usage. The software is available to as many watch machines that have the software on them. The maximum throughput is dependent on the speeds of the sensors and processors of the watch machines running the software themselves.

S – The usage of java as an object-oriented programming language helps ensure longtime support of our activity tracker software with increasing amounts of devices and maintenance of the code. Developers of the software in the future can add support for different languages and UI screen sizes for when using our software.

Implementation

System Requirements:

jre 1.8.0_201

Installation of Java 8

OS compatible with Java

Open-Source Software requirements.

The small watch machine running our activity tracker software need at least Java version 8. Alongside Java 1.8 SE, the watch machines need Scenebuilder and JavaFX installed to run the graphical user interface of our software. An operating system such as Windows 7 or higher, Mac OS, or Linux 13.0 installed on the watch machines with our software is recommended for an easier setup for running the activity tracker software.

Gadgetbridge is an open source software for the Android Operating System that could be used in deployment for our activity tracker software to bypass installing previously mentioned Operating Systems, as well as their hardware requirements.

PostgreSQL is an open source database software that would be used to manage the user input data for the activity tracker system. An essential component for reporting the graphs of the user stats.

Purchased Hardware requirements.

A machine shaped like a watch with a processor inside to run our activity tracker software. The machine running our activity tracker software itself must include a light sensor using LED technology. The machine needs to have a minimum of 126 MB of Disk Space for JRE (Java Runtime Engine); 2 MB for Java Update. Minimum of 128MB of RAM. Minimum specified processor to run our software is at least an Intel Pentium 2 266 MHz processor or a comparable processor in performance. A micro-USB cable is required to setup our software initially onto the machine watches before usage.

Legal Issues

Activity Tracker Inaccuracies:

An error of the data being read improperly from the light emitting diodes (LEDs). The results presented on the activity tracker software is incorrect and may serve to be unreliable without the customer knowing. Customers with heart diseases who need to guarantee a specific range of their own heart rate may face demise.

Inconvenience of Usage:

Users of an activity tracker must not strain their eyes looking for a particular set of information. Users performing dangerous activities such as driving while using the activity tracker is highly not recommended. However, users may be receiving notifications during participation of dangerous activities and could hurt themselves or others. Software should be display information comprehensively and attempt to not be very invasive too frequently.

Glossary

Account Information - The information stored within the activity tracker software which may include activity logs, alarms, and heartrate.

Activity Log(s) - The logged data of all sensors within the Activity tracker

Alarm(s) – time based notifications

Application – a piece of software designed and written to fulfill a specific task

Calorie – the amount of energy required to raise 1 gram of water 1 degree Celsius

Display - the area of the watch capable of displaying data

Device API - a set of functions and procedures allowing the creation of applications that access the features or data of an operating system, application, or other service.

Component – an aspect of a larger entity

Database – a structured set of data held in a computer, especially one that is accessible in various ways

Settings – options to change how the system looks, works, etc.

Heartrate – number of heart beats per minute (bpm)

LED – abbreviation for Light emitting diode.

Gait – an individual's manner of walking

Plateau – a period of stagnation in a workout regimen, diminished returns on workouts

Use Cases

Use Case (UC1):

View Graphs

Scope:

The current User using the activity tracker software

Level:

To allow a user to view their graphs in real time

Actor:

User, System

Stakeholders:

User: Wants to be able to view their graphs accordingly and properly.

Preconditions:

Data exists for system to display graphs

Postconditions:

System displays graphs for user, then returns to default screen when user exits.

Main Success Scenario:

(UC1main):

- 1.) User chooses view graphs
- 2.) System collects necessary data
- 3.) System generates live graphs
- 4.) User can easily select which graph to view
- 5.) User can swap graphs with a single button press
- 6.) System updates charts as new data is retrieved

Extensions:

(UC1a): UI does not allow for easy graph selection during exercise

(UC1b): System generates graphs with incorrect data

(UC1c): Graphs are not easily readable (unlabeled axes, bad scale, etc.)

(UC1d): Graphs do not update with live data

Special Requirements:

None

Variations in Tech and Data:

Users all have unique data, tech is consistent

Frequency of Occurrence:

Many times a day

Miscellaneous:

N/A

Use Case (UC2):

Set Activity Goal

Scope:

The current User using the activity tracker software

Level:

User chooses a new goal value and timeline on which to achieve said goal

Actor:

User, System

Stakeholders:

User: Wants to be able to set a new activity goal

Preconditions:

User must know the goal and timeline to enter the data

Postconditions:

System must graph goal line based on input values

Main Success Scenario:

(UC2main):

- 1 User selects “Set New Goal”
- 2 System prompts user to choose which category to set a new goal in
- 3 User selects a category (Sleep, steps, heart rate, etc.)
- 4 System asks user what the new goal should be

- 5 System asks user when the user wants to achieve this goal by
- 6 User selects a timeline on which to complete the goal
- 7 System records new goal and timeline
- 8 System displays live chart with goal line graphed

Extensions:

(UC2a): System does not allow for goal setting

(UC2b): System fails to capture necessary data to graph goal line

(UC2c): Graph is cluttered, incorrect, or unreadable

(UC2d): Goal line is not distinguished from actual values

(UC2e): System does not update live charts with goal line

Special Requirements:

User must have a goal in mind and timeline

Variations in Tech and Data:

All data is unique to users, tech is consistent

Frequency of Occurrence:

Varies, infrequently to multiple times per day

Miscellaneous:

N/A

Sources:

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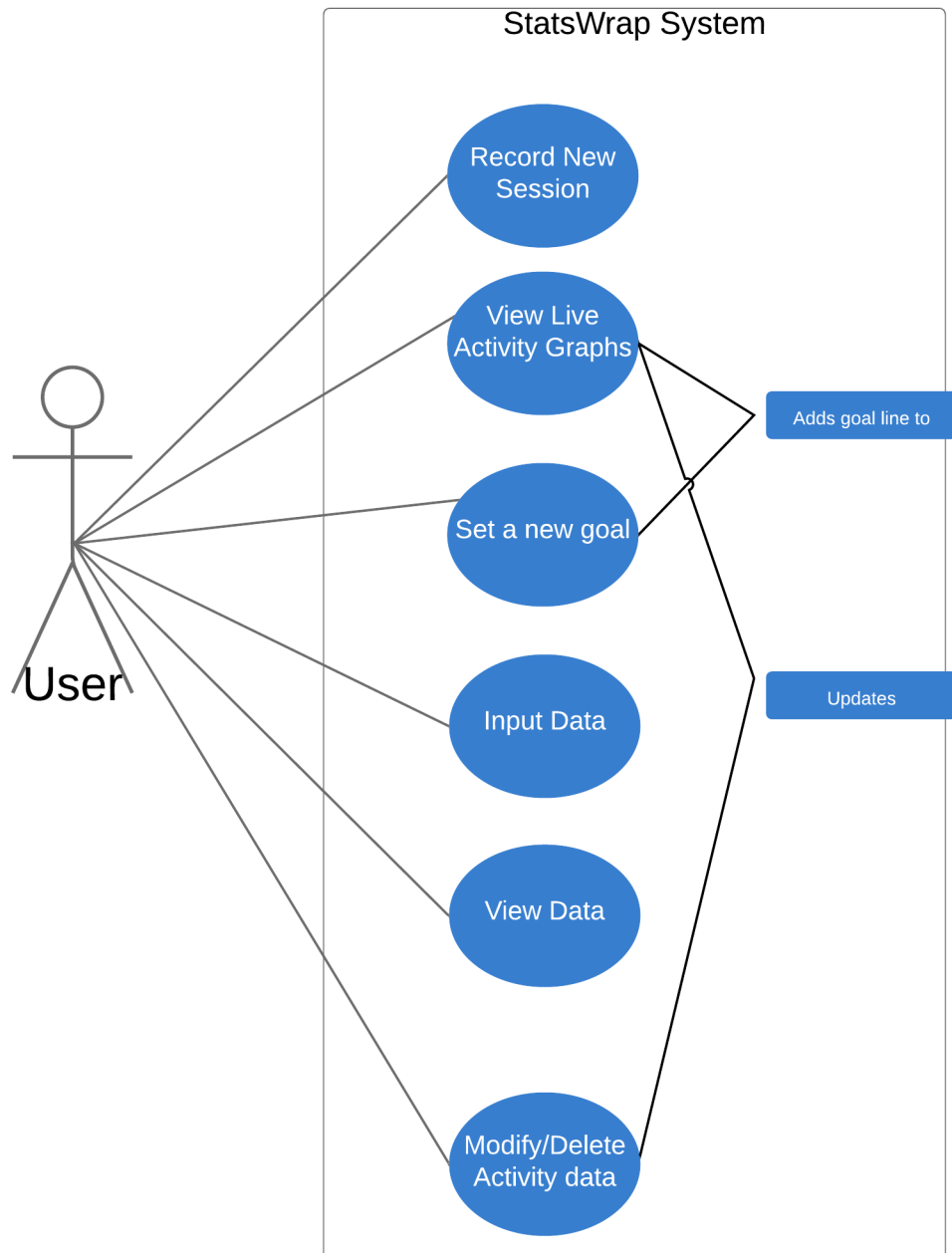
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StatsWrap Use Case Diagram

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Main Menu

Live Graph	New Session
Set New Goal	Input Data
View Data	Modify/Delete

New Session

Are you sure you want a new Session?

Set New Goal

What new Goal?

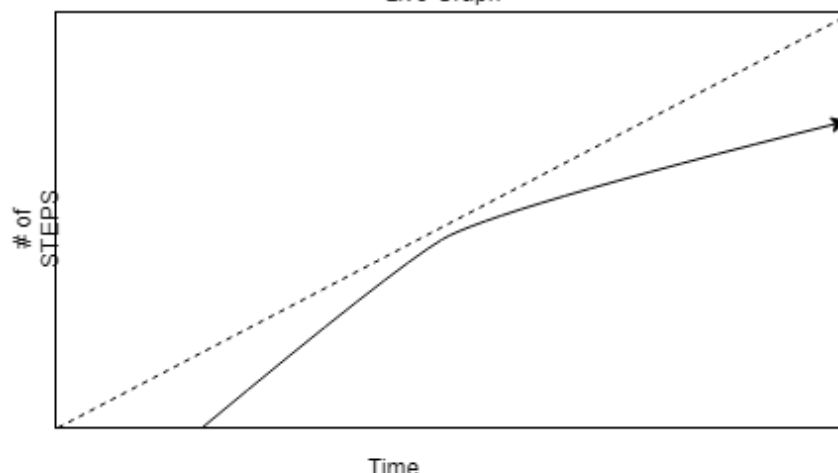
Timeline?

To

Input Data

	Input Data
Name of Input	<input type="text"/>
Value	<input type="text"/>

Live Graph



View Data

Steps	Heartrate
Sleep	Your Data
Your Data	Your Data

Modify/Delete

Select which field to Modify or Delete?

Steps	Heartrate
Sleep	Your Data
Your Data	Your Data