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Team ROCKET

BioMetrix

Self-Health Improvement

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# 

# Introduction

This report contains a summary of requirements for BioMetrix Self Health Improvement, an open source mobile Android application. The engineering requirements inside represent features of our future application. Requirements are grouped into these headings: Functional requirements, and non-functional requirements. Subheadings include: Framework, Modules, Analysis, and Database.

# Functional Requirements

Functional requirements describe system features and operations the system can perform. These requirements will be grouped into 4 separate priority levels. These levels are: High/Architectural (H-A), requirements that needs to be completed in order for the system to perform even basic functionality; High (H), requirements that are essential in order for the application to be considered complete; Medium (M), requirements that users would want in a completed application which would heavily impact use but they are not necessarily required; Low (L), requirements that would be nice to have from an end user perspective that increase usability.

## Mood Module

* 1. System shall allow user rate mood and emotions – HA
     1. System shall allow user to enter severity of different moods/symptoms – HA
        1. Anxiety, mania, and depression will be default moods/symptoms – H
        2. System shall allow user to create custom moods/symptoms to track – M
        3. System shall allow user to enable or disable any mood/symptom – L
     2. System shall allow entry of general emotions unrelated to specific – HA
        1. System shall have default emotions to rate – H
        2. System shall allow user to create custom emotions – M
        3. System shall allow user to remove emotions – L
  2. System shall attach a date and time to the entry – HA
     1. System shall default date and time to current time – H
     2. System shall allow user to change date and time to any past date and time – H
     3. System shall not allow user to select a date and time in the future – M
  3. System shall allow user to enter detail/notes to the mood entry – M
  4. System shall allow user to select and view past entries - H

## Medication Module

* 1. System shall allow user to enter current medications – M
     1. System shall store medication name, dose, and frequency – M
     2. System shall allow user to attach side effects to medications – L
  2. System shall allow user to create reminders to take medications – L
  3. System shall allow user to create reminders to refill medications – L
  4. System shall allow user to view current medications - M

## Sleep Module

* 1. System shall allow user to enter total time slept for each day – HA
     1. System shall default entry to current date – H
     2. System shall allow user to change date – H
     3. System shall not allow user to select a date in the future – M
     4. System shall not allow multiple sleep entries for one day – H
  2. System shall allow user to rate the quality of sleep – L
  3. System shall allow user to enter details/notes to the sleep entry – L
  4. System shall allow user to connect to the Fitbit app and retrieve sleep information – L
  5. System shall allow user to begin timer when they go to sleep to track amount of sleep – L
  6. System shall allow user to select and view past entries – H
  7. System shall allow user to create goals to try to achieve each day – L

## Exercise Module

* 1. System shall allow user to create an entry for exercise – HA
     1. System shall default to current date and time – H
     2. System shall allow user to change date and time – H
     3. System shall not allow user to select a date in the future – M
  2. System shall allow entry of length of workout – H
  3. System shall allow user to rate intensity of workout – L
  4. System shall allow user to specify the type of exercise – L
  5. System shall allow user to connect to the Fitbit app and retrieve exercise information – L
  6. System shall allow user to select and view past entries – H
  7. System shall allow user to create goals to try to achieve each day – L

## Diet Module

* 1. System shall allow user to create an entry for their daily diet – H
     1. System shall default to current date and time – H
     2. System shall allow user to change date and time – H
     3. System shall not allow user to select a date in the future – M
     4. System shall not allow user to create multiple entries per day – L
  2. System shall allow user to enter total calories consumed – M
  3. System shall store users desired amount of calories consumed – M
  4. System shall allow user to enter multiple meal types and the details for that meal – L
  5. System shall allow user to rate the healthiness of their diet – H
  6. System shall allow user to enter number of servings of each food group for the day – L
  7. System shall allow user to enter details/notes to the day’s diet entry – L
  8. System shall allow user to select and view past entries – H
  9. System shall allow user to create goals to try to achieve each day – L

## User Data Backup

* 1. System shall allow (but not require) user to create an account – H
     1. System shall create a username and password connected to an email address – H
     2. System shall store login information in database in a secure way – H
     3. System shall allow user to change or reset password – M
  2. System shall allow user to set the frequency the data is backed up – M
     1. System shall default to backup data once per day – L
  3. System shall allow user to retrieve all data when logging in and no data is stored on device – M
  4. System shall back up all user entries– H
  5. System shall store a certain number of days’ worth of entries on the device and will access older entries from the database when requested - H

## Analysis

* 1. System shall allow user to request analysis of data entered – H
  2. System shall compare user data against itself to identify common patterns and trends – H
  3. System shall display patterns and trends detected to the user – H
  4. System shall notify user if there is insufficient data to perform analysis – M
  5. System shall generate graphs based on data and results of analysis – L

## System Settings

* 1. System shall have a single pullout menu that is accessible throughout the entire app – HA
     1. Menu shall have each section listed to take user to that module – H
     2. Menu shall allow user to login to or sign out of their account – M
     3. Menu shall allow user to go to the application settings – L
  2. System shall allow user to change color theme – L
  3. System shall allow user to enable or disable each module – M
  4. System shall allow user to enable reminders to create an entry for the day – L
  5. System shall have a main menu that users can access all modules from - HA

## Digital Pet Guide

* 1. System shall use digital pet to explain features of application in place of a tutorial – L
  2. System shall allow user to disable digital pet through the settings menu – L

# Non–Functional Requirements

Non-functional requirements are those related back to a specific portion of the system. These types of requirements include tools and frameworks used to build the system, system performance requirements, and requirements for system network behavior. These requirements also include other requirements for usability and helpfulness that cannot easily be quantified, among these are usability and helpfulness requirements.

## Platform

* 1. The application will be written in Android Studio
     1. Java and XML will be used for the majority of the project
     2. C++ will be used in the analysis portion of the application using the android NDK
  2. Microsoft SQL server will be used for the database
     1. The database will be hosted on Amazon Web Services’ Relational Database Svc
  3. The system shall integrate with Fitbit to access user data for sleep and exercise
  4. The application will be designed for Android API 22: Lollipop

## Deployment

* 1. Application will be free and open source
  2. Application should be posted on google play store once completed