Software Requirements Specification

for

Battery Optimization Software System

Version 1.0 approved

Prepared by Lucas Loaiza, Siegfred Madeghe, Shang Wang, and Noah Zhang

Tufts University

11/9/2020

Table of Contents

Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

This application allows smartphone users to manage their battery usage and optimize their battery life. The user has the ability to filter through the list of applications presented by the system either alphabetically or by battery usage. Once the user clicks on a specific application, then a more granular view of the battery usage data comes up, including a graphical view.

1.2 Document Conventions

BOSS stands for Battery Optimization System Software

1.3 Intended Audience and Reading Suggestions

This document is intended for marketing staff and potential developers, project managers, and testers. Testers could use this documentation to know the functional and non-functional requirements.

Testers can skip straight to the functional and non-functional requirements then browse the rest of the document if they need more information. Marketing staff can read it from start to finish to get a good overview of the product first.

1.4 Product Scope

The purpose of this software is to provide a management system for Android phone battery usage, as well as a path for optimizing the battery life of the device. The app will provide users with the ability to manage applications and look at their battery usage data. The app's notifications will enable users to be aware of the operation of their applications and then take the necessary steps to optimize performance. Customer satisfaction will rely on the app's ease of use and effectiveness in preserving battery life.

1.5 References

Non-Functional Requirement of the Mobile Development system by Vishwas Ng; March 10, 2019

https://medium.com/@vishwasng/non-functional-requirement-of-the-mobile-development-system-e0ed98f2a872

2. Overall Description

2.1 Product Users

Android phone users who want to improve their battery life and usage efficiency.

2.2 Operating Environment

The application will be made for the Android 11 operating system and will be available to any device that runs on Android 11.

2.3 Assumptions and Dependencies

No assumptions were made.

3. Functional Requirements

F.R.1. The home page should list applications that are running.

F.R.2. There should be a field that shows which apps are active or in the background.

F.R.3. There should be a feature to enable users to sort the apps alphabetically.

F.R.4. There should be a feature to enable users to sort the apps in terms of battery usage.

F.R.5. There should be a granular view popping up when users click on a specific application.

F.R.6. The system should send a push notification to indicate when an app should be closed.

F.R.7. The system should have a graphical view for the overall battery usage.

F.R.8. The system should have an option to create more battery profiles.

F.R.9. The app should be able to close out other apps.

F.R.10. The app should be able to access the phone’s battery life.

F.R. 11. The system must be able to maintain state so that battery metadata persists after exiting

F.R. 12. The system must be able to run in parallel with other applications without interfering with their processing

F.R. 13. The system must over some component that allows the user to change and store configurations for the alarm component

4. Nonfunctional Requirements

N.F.R.1. The app should not collect personal data.

N.F.R.2. The system should be very lightweight and use nearly zero CPU and battery.

N.F.R.3. The user should only need to click once to navigate to a specific app.

N.F.R.4. The app should not take more than two seconds to open and less than a second to navigate to other pages within the app.

N.F.R.5. The database should be able to handle users when the app scales.

N.F.R.6. The system is scalable and maintainable.

N.F.R.7. The system should have a concise and detailed data architecture.

N.F.R.8. The system should meet the security protocols of the devices that it will be launched on.

N.F.R.9. The system should ensure that the data presented is accurate.

N.F.R.10. The system should comply with the government regulations where it will be deployed.

N.F.R.11. The system must not require network access

N.F.R.12. The system must not access or expose any data about other applications

N.F.R. 13. The system must follow a contemporary UI design pattern such that a non-technical user can effectively interact with it without instruction

5. Other Requirements

O.R.1 The database that this system will be using should be interoperable and should also support encryption
O.R.2 During the development of the system, there should not be any incident of using any intellectual property without permission
O.R.3 The system should be accomplished within the proposed time frame