Software Requirements Specification

for

Trailhead Weather

Version 1.0 approved

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The purpose of this document is to specify the requirements Trailhead Weather. Trailhead Weather is a simple standalone weather application used by technicians to plan for field assignments.

1.2 Product Scope

The purpose of Trailhead Weather is to provide field technicians with relevant weather information for the areas they will be performing work. It will be a standalone application that retrieves weather information via Openweathermap.org API.

1.3 References

- Openweathermap.org

2. Overall Description

2.1 Product Functions

- Current Weather
    - Includes temperature, wind, pressure, humidity, sunrise, and sunset
- Forecast
    - Includes the following seven days with hourly breakdowns
- Offline use
    - Will store downloaded information for use when not connected
    - If now internet connection is detected, app will pull most recently downloaded data from memory.
- Locations
    - Can track several locations at once, being able to search and save favorites, and be able to switch between views of each location.
    - Upon opening of app, will display a user-set default location

2.2 User Classes and Characteristics

The simplicity of the app requires only one user class. The user will have the following functions available:

- Search Location
- Refresh Weather
- View selected day's weather
- Add location to "Favorites"
- Delete location from "Favorites"

- Set default location

2.3 Operating Environment

The app will be built in Java and compile against the OpenJDK.

2.4 Design and Implementation Constraints

As per the documentation of Openweathermap.org, refreshing weather info from a single device will be limited to once every ten minutes. Limits across all technicians will be 60 per minute, this should not be an issue with the amount of personnel expected to utilize this app.

3. External Interface Requirements

3.1 User Interfaces

The application will be a simple GUI interface utilizing JavaFX that runs in the JVM.

3.2 Hardware Interfaces

- Windows/Mac/Linux desktop

3.3 Software Interfaces

- Java Virtual Machine
- OpenWeatherMap JSON API client library in Java
    - https://github.com/migtavares/owmClient
- OWM JAPIs
    - http://go.aksingh.net/owm-japis-src

3.4 Communications Interfaces

The app will utilize HTTP GET requests with the API

4. System Features

4.1 Display Weather

4.1.1 Description and Priority

Display current weather and 7-day hourly forecast and save results locally for offline use. Set default location, add additional locations to track. Ability to switch between displayed location. Priority: High

4.1.2 Stimulus/Response Sequences

- User opens app: weather for default location is displayed
- Select day in forecast: The day's hourly weather is displayed
- Search for location
- Select location
- Choose one as default
- Add location to Favorites
- Remove location from Favorites

4.1.3 Functional Requirements

REQ-1: Connection to internet for initial weather download.
REQ-2: Retrieve: Temp, wind, pressure, humidity, sunrise and sunset; hourly forecast for following seven days.
REQ-3: Automatically refresh weather data every ten minutes.
REQ-4: Display date and time last weather update was successful.
REQ-5: Current Weather prominently displayed
REQ-6: Save weather data to .json file located in the application folder.

4.2 Save Preferences and Settings

4.2.1 Description and Priority

Save settings: Default location, Favorited locations, Forecast data,

4.2.2 Stimulus/Response Sequences

- User opens app
- Displays default location with easy access to favorite locations.
- If no location has been saved, user is prompted to search for one.

4.2.3 Functional Requirements

REQ-1: Save preferences as trailheadwthr.properties under the user.home directory
REQ-2: Save forecast data for each location in a trailheadwthr.json file under the same directory

5. Appendix