

Stone Identification App

Software Requirements Specification

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1 Non-Functional Requirements

The following section will outline the various non-functional requirements that pertain to the Rock Identification app.

1.1 Look & Feel Requirements

These requirements dictate how the final product will appear to the user. The overall goal will be to make the app's look & feel in a way that promotes simple and efficient use by the average user.

1.1.1 Appearance Requirements

Ap1: The program shall use colour schemes appealing to the expected users determined by the designers.

Ap2: The program's appearance shall be designed in a way that it does not distract from usage of the system.

Ap3: The program shall be easy to see even in environments with high background light (i.e. outdoors).

1.1.2 Style Requirements

S1: The program shall uphold a simple design with each page displaying only the necessary information.

1.2 Usability & Humanity Requirements

1.2.1 Ease of Use Requirements

EOF1: The program shall be usable by any user between the ages of 8 and 90 with basic knowledge of how apps function.

1.2.2 Personalization & Internalization Requirements

PI1: The program shall allow the user to choose whether they would like to use location services.

1.2.3 Learning Requirements

Le1: The user shall require training in order to understand usage of basic qualifying characteristics of rocks.

1.2.4 Understandability & Politeness Requirements

UP1: The program shall only assume prior knowledge of the basics of how to use an app and simple defining characteristics of rocks. Functions that require knowledge other than this will not be included.

UP2: The program shall include information in *Layman's Terms* to support the more technical information.

1.2.5 Accessibility Requirements

Ac1: The program shall utilize the largest text possible while maintaining it's aesthetic appeal.

1.3 Performance Requirements

1.3.1 Speed & Latency Requirements

SL1: Time computing possible matches and displaying those results shall never exceed 1 second.

SL2: Time to start the program shall never exceed 3 seconds.

1.3.2 Safety Critical Requirements

N/A

1.3.3 Precision & Accuracy Requirements

PA1: The program shall display the correct rock that matches the descriptors (assuming they are correct) 95% of the time.

PA2: The program shall display the correct rock that matches the descriptors (assuming small mistakes by user being possible) 80% of the time.

1.3.4 Reliability and Availability Requirements

RA1: This system is available on the user's machine and does not rely on other factors to function. This program should be available 99% of the time.

RA2: The program shall *crash* no more than an average of once per hour of runtime.

1.3.5 Robustness or Fault-Tolerance Requirements

RFT1: The program shall be designed in a way that faulty inputs are not possible to select.

1.3.6 Capacity Requirements

No requirements necessary from this section since the program will run independently on each piece of hardware it is running on. So the maximum capacity is only 1.

1.3.7 Scalability or Extensibility Requirements

SE2: The program shall be designed in a way that adding new rocks to the database is possible after deployment without major changes.

1.3.8 Longevity Requirements

Lo1: The product shall be designed in a modular way so as to allow future anticipated change.

1.4 Operational & Environmental Requirements

1.4.1 Expected Physical Environment

EP1: The program will primarily be operated outdoors. The program shall be designed such that non-extreme environments will not affect usability or performance.

1.4.2 Requirements for Interfacing with Adjacent Systems

RIA1: The program shall interface with Android Jelly Bean (4.1.x) and higher.

1.4.3 Productization Requirements

Pro1: The program shall come packaged with all required libraries necessary to readily interface with Android Jelly Bean (4.1.x) and higher.

1.4.4 Release Requirements

R1: The program shall be ready for release of version 1.0 by April 3rd, 2016.

1.5 Maintainability & Support Requirements

1.5.1 Maintenance Requirements

MS1: The product shall store its data in such a way that it will be able to restore to a previous state as necessary.

1.5.2 Supportability Requirements

Su1: The program shall follow a modular design pattern. No more than 10% of modules will be so rigid they can only operate in the exact implementation of the current system.

1.5.3 Adaptability Requirements

Ad1: The program shall be able to integrate new types of rocks into its identification system without affecting any other component's operation.

1.6 Security Requirements

1.6.1 Access Requirements

AR1: Accessing the identification feature will not require credentials, however, accessing the previous rocks discovered or adding new rocks will require the user entering their password.

1.6.2 Integrity Requirements

In1: The rock data stored locally will be encrypted and compared against fixed values as needed to verify there has not been any tampering.

In2: The user's password will be padded and stored encrypted with two different methods of encoding. Both methods of encoding must return the same password to ensure there has not been any tampering.

1.6.3 Privacy Requirements

Pri1: The program will not disclose any information about the user to third-parties without permission.

1.6.4 Audit Requirements

N/A

1.6.5 Immunity Requirements

Im1: The program shall make all files that do not change due to normal program operation *read-only* in the file system.

Im2: The program shall make an announcement to the user if any files hold unexpected data.

1.7 Cultural & Political Requirements

1.7.1 Cultural Requirements

Cu1: This program shall not include any symbols, statements or anything of that nature that may be found offensive to anyone's culture.

1.7.2 Political Requirements

Po1: This program shall not include any symbols, statements or anything of that nature that are offensive in any region in a political sense.

1.8 Legal Requirements

1.8.1 Compliance Requirements

C1: The program shall not retain sensitive data about the user without the user's permission.

1.8.2 Standards Requirements

N/A