

ALPS Project – Requirements

Glossary

Disclaimer	A formal statement giving up your legal claim to something or ending your connection with it
Sensor	A module whose purpose is to detect events or changes in its environment
Data Collection	Process of gathering and measuring information on targeted variables via sensors
Idle State	An application state in which the data collection is not running
Active State	An application state in which the data collection is running
Halt State	An application state in which the application stopped abruptly
Activation	An action or process of making something operative or running
Permission	An action of officially allowing someone to a particular thing, a consent
Device Id	A unique identifier for a specific device
Database	An organized collection of data, generally stored and accessed electronically
User Data	A collection of data including users' movements, actions and most importantly personal information
Anonymous	Not identified by name or any unique identifier, unknown identity
Cloud	A server which is accessed over the Internet and includes software or database
User Manual	A descriptive piece of information on how to use, prepared for the user in mind
Chronometer	An instrument for measuring time accurately
Statistics	Practice of collecting and analyzing numerical data in large quantities
Report	An objective description of data and analysis
API	An application interface, mostly located in a cloud server, which is used to fetch, receive and send data
Font Style	A font with already defined preset attributes such as weight, typeface and etc.

1. Functional Requirements

1.1. Login Screen

- 1.1.1. Users shall be able to view this screen at launch when in idle state
- 1.1.2. Users shall be able to view the logo of the application
- 1.1.3. Users shall be able to view a welcome text
- 1.1.4. Users shall be able to view a disclaimer for the application
 - 1.1.4.1. Users shall be able to understand what data will be collected and stored
 - 1.1.4.2. Users shall be able to understand what features of phone will be used
- 1.1.5. Users shall be able to view a button to go forward into the application
 - 1.1.5.1. Users shall be able to press the button to move forward into sensors
- 1.1.6. Users should be able to see a user manual

1.2. Sensors Screen

- 1.2.1. Users shall be able to view available sensors in the device
 - 1.2.1.1. Users shall be able to view 'Bluetooth', if this sensor exists
 - 1.2.1.2. Users shall be able to view 'Wi-Fi', if this sensor exists
 - 1.2.1.3. Users shall be able to view 'Screen Usage'
 - 1.2.1.4. Users should be able to see more sensors if any of them is usable
- 1.2.2. Users shall be able to select sensors
 - 1.2.2.1. Users shall be able to select multiple sensors
- 1.2.3. Users shall be able to proceed with their selection of sensors.

1.3. Data Collection Screen

- 1.3.1. Users shall be able to view this screen at launch when in active state
- 1.3.2. Users shall be able to view their selection of sensors
 - 1.3.2.1. Users shall be able to view their previous selection of sensors if the application is in active state
 - 1.3.2.2. Users shall be able to view their current selection of sensors from 'Sensors Screen' if the application is in idle state.
- 1.3.3. Users shall be able to see a button which starts data collection
 - 1.3.3.1. Users shall be able to press this button when in idle state
 - 1.3.3.1.1. Users shall be able to start the data collection
 - 1.3.3.2. Users shall not be able to press this button when in active state
- 1.3.4. Users shall be able to see a button which stops data collection
 - 1.3.4.1. Users shall not be able to press this button when in idle state
 - 1.3.4.2. Users shall be able to press this button when in active state
 - 1.3.4.2.1. Users shall be able to stop the data collection
 - 1.3.4.2.2. Users shall be able to save new collected data for reporting
- 1.3.5. Users shall be able to see a button which takes them into reporting section
 - 1.3.5.1. Users shall be able to press this button to look for the statistics
- 1.3.6. Users should be able to see a chronometer for their data collection
 - 1.3.6.1. Users should be able to activate the chronometer when they start data collection

1.4. Report Screen

- 1.4.1. Users shall be able to see device sensors
- 1.4.2. Users shall be able to see the statistics of each sensor
 - 1.4.2.1. Users shall be able to see how much the sensor is used (in hours)
 - 1.4.2.2. Users shall be able to see how many times the sensor is activated
- 1.4.3. Users shall be able to see a button that returns to previous screen
 - 1.4.3.1. Users shall be able to press this button to return 'Data Collection Screen'

2. Non-Functional Requirements

2.1. Performance

- 2.1.1. The application shall be very responsive for user actions
- 2.1.2. The application shall work with the number of available sensors
- 2.1.3. The application shall not go into halt state when in the use of background data collection services

2.2. Battery

- 2.2.1. The application shall be power-efficient.
- 2.2.2. The application shall not drain too much battery in longer use cases

2.3. Security

- 2.3.1. The application shall ask permission of users to use any sensor
 - 2.3.1.1. The application shall not collect data without the permission
 - 2.3.1.2. The application shall be able to collect data with the granted permission
- 2.3.2. The application shall store user data in a secured method
- 2.3.3. The application shall log user anonymously
 - 2.3.3.1. The application shall not log user any user-specific personal information
 - 2.3.3.2. The application shall store device-specific information (such as IMEI/MAC addresses) pseudonymously

2.4. Availability & Reliability

- 2.4.1. The application shall be available for Android devices
 - 2.4.1.1. The application shall be compatible with Android 6.0 and above
- 2.4.2. The application shall be reachable as long as the device is running
- 2.4.3. The application shall be able to run in the background when in active state

2.5. Data Storage

- 2.5.1. The application shall store statistics data in a structured local database
- 2.5.2. The application shall store small data in local app database
- 2.5.3. The application shall not label any data with user-specific information

2.6. API

- 2.6.1. The application shall be able to communicate with an existing API
- 2.6.2. The application shall send collected data to cloud using an existing API
 - 2.6.2.1. The application shall not label any data with user-specific information while sending them to the cloud

2.7. Accessibility

- 2.7.1. The application shall support 'English' as the primary language
- 2.7.2. The application shall have a readable font style

Last updated 29.11.2020
Authors Berke Esmer
Ece Ata