

Use cases

Use Case 1: RaDoTech user adds user account and gets health data measured

Primary Actor:

RaDoTech user

Stakeholders and Interests:

RaDoTech user - wants to add user and get health data measured

Precondition:

RaDoTech user has RaDoTech hardware on and application open

Success guarantee:

RaDoTech user can connect hardware to application, create a user, and measure their health data

Main success scenario:

1. User opens application and presses connect to hardware button
2. Application is linked to hardware
3. User creates user using **Use Case 3**
4. User takes measurements using **Use Case 7**
5. Measurements are processed using **Use Case 8**
6. Measurements are stored using **Use Case 9**
7. Measurements are displayed using **Use Case 11**

Extensions:

1-5a. Hardware battery is dying

1-5a1. RaDoTech presents the low power warning to the user

1-5a2. RadoTech does a graceful shutdown when the battery dies.

Use Case 2: RaDoTech user sees the trend analysis of their health data

Primary Actor:

RaDoTech user

Stakeholders and Interests:

RaDoTech user - wants to see their health trend analysis

RaDoTech company

Precondition:

RaDoTech user has a user account created and has their health data stored in the software

Success guarantee:

RaDoTech user sees the trend analysis visualization of their historical health metrics in RaDoTech's view

Main success scenario:

1. RaDoTech user clicks the "see trend analysis" button.
2. RaDoTech retrieves historical health data and sends it to visualization view (**Use Case 10**)
3. RaDoTech presents user with trend analysis charts of their historical health data (**Use Case: 11**)

4. RaDoTech user sees the charts
5. RaDoTech user shuts down the hardware.

Extensions:

1-5a. Hardware battery is dying

1-5a1. RaDoTech presents the low power warning to the user

1-5a2. RaDoTech does a graceful shutdown when the battery dies.

Daniel: User Management:

Create, update, and delete user profiles. Each device should support multiple profiles (up to five)

USE CASE 3: User Management (Create)

Primary Actor:

RaDoTech user

Stakeholders and Interests:

RaDoTech user - wants to add a new user to RaDoTech device

Precondition:

RaDoTech user has device linked to RaDoTech app and has app open

Success guarantee:

RaDoTech user creates a new user on RaDoTech app

Main success scenario:

1. User selects "add user" button
2. User is redirected to "add user" page with fields for new user information
3. User fills in new user information and clicks "submit" button
4. New user is created and stored persistently
5. User is redirected to "home" page

Extensions:

1a. There are already 5 existing users on target RaDoTech Device

1a1. Message is shown stating that there is a maximum of 5 users and 1 needs to be removed to add another

USE CASE 4: User Management (Delete)

Primary Actor:

RaDoTech user

Stakeholders and Interests:

RaDoTech user - wants to remove existing user from RaDoTech device

Precondition:

RaDoTech user has device linked to RaDoTech app and has app open

Success guarantee:

RaDoTech user deletes an existing user on RaDoTech app

Main success scenario:

1. User selects "delete user" button
2. User is redirected to page with list of existing users
3. User selects user to delete and clicks "submit" button
4. Selected user is deleted and removed from persistent storage
5. User is redirected to "home" page

Extensions:

- 1a. There are 0 existing users on target RaDoTech Device
 - 1a1. Message is shown stating that there are no users to remove

USE CASE 5: User Management (Update)

Primary Actor:

RaDoTech user

Stakeholders and Interests:

RaDoTech user - wants to edit existing user on RaDoTech device

Precondition:

RaDoTech user has device linked to RaDoTech app and has app open

Success guarantee:

RaDoTech user updates an existing user on RaDoTech app

Main success scenario:

1. User selects "update user" button
2. User is redirected to page with list of existing users
3. User selects user to update
4. User is redirected to page with editable user information
5. User edits user information and clicks "submit" button
6. Selected user is updated with new information and updated persistently
7. User is redirected to "home" page

Extensions:

1a. There are 0 existing users on target RaDoTech Device

1a1. Message is shown stating that there are no users to update

Daniel:

Use Case 2: Data Collection:

Interface with RaDoTech hardware to collect health data.

Jowi:

USE CASE 6: User Management (Select)

Primary Actor:

RaDoTech user

Stakeholders and Interests:

RaDoTech user - wants to select a user on RaDoTech device

Precondition:

RaDoTech user has device linked to RaDoTech app and has app open

Success guarantee:

RaDoTech user creates a new user on RaDoTech app

Main success scenario:

1. User selects "select user" button
2. User is redirected to "select user" page
3. User selects user profile to use
4. User profile is retrieved from persistent storage
5. User is redirected to "home" page

Extensions:

- 1a. There are already no existing users on target RaDoTech Device
 - 1a1. Message is shown stating that there are no users and that at least one profile must be created

USE CASE 7: Receive Data From Hardware

Primary Actor:

RaDoTech user

Stakeholders and Interests:

RaDoTech user - wants to see RaDoTech readings on app

Precondition:

RaDoTech user has device linked to RaDoTech app and has app open

RaDoTech user uses proper grip and sprays water on target meridian

RaDoTech device battery is at an acceptable level to complete scan

Success guarantee:

RaDoTech hardware sends readings to app

Main success scenario:

1. User holds RaDoTech hardware to target meridian
2. Reading is displayed on RaDoTech app

Jowi:

Use Case 8: Data Processing

Process raw data using algorithms based on Ryodoraku technology to generate health metrics.

Primary Actor:

- RaDoTech user

Stakeholders and Interests:

- RaDoTech user - wants to generate health metrics from their health data

Precondition:

- RaDoTech user has a registered and selected profile within the application
- RaDoTech user data has been entered into the application

Success guarantee:

- RaDoTech application displays generated health metrics based on the user's health data

Main success scenario:

1. User health data are processed into an algorithm on the application
2. User health metrics are created and placed on the user's profile

Extensions:

1a. Health data processing failure

1a1. Display error message and prompt user to repeat RaDoTech scan

Yun:

Use Case 9: Store user's historical health data for trend analysis.

Primary Actor: RaDoTech

Stakeholders and Interests:

- RaDoTech users - want to store historical health data for future viewing of the trend analysis
- RaDoTech company - want to provide trend analysis for the RaDoTech user using their historical health data
- Health regulation agency

Precondition:

- User has an account on the RaDoTech app
- User has linked a RaDoTech device
- User has recorded health data from a RaDoTech device
- User health data is received and processed by RaDoTech.
- RaDoTech has a secure database to store historical health data

Success guarantee:

RaDoTech stores user historical health data in the database

Success scenario:

1. RaDoTech validates the received health data.
2. RaDoTech retrieves current date/time
3. RaDoTech stores user health data along with the current date for the respective user.

Extensions:

1a. Data validation fails.

1a1. RaDoTech prevents health data from being stored in the database.

1a2. RaDoTech sends out an error message in the interface to the user.

Use Case 10: Allow users to access historical health data for trend analysis

Primary Actor: RaDoTech user

Stakeholders and Interests:

- RaDoTech users - want to see health trend analysis from the historical health data
- RaDoTech company - want to provide health data trend analysis for the RaDoTech user
- Health regulation agency

Precondition:

- User has an account on the RaDoTech app
- User has linked a RaDoTech device
- User has recorded health data from a RaDoTech device
- User health data is received and processed by RaDoTech.
- RaDoTech stores historical health data in a secure database

Success guarantee:

RaDoTech accesses and sends historical health data to the visualization component

Success scenario:

1. RaDoTech user requests health trend analysis
2. RaDoTech queries the historical health data for the user from the database.
3. RaDoTech sends the retrieved data to the trend analysis data visualization component.

Extensions:

2a. No health data exists for the user

2a1. Response to the visualization component that the data does not exist

Amr:

Use Case 11: Data Visualization

Display health metrics in an easy-to-understand, visual format within the application.

Primary Actor: RaDoTech

Stakeholders and Interests:

- RaDoTech users - want to see their data in an easy manner via charts, body and circle diagrams to make it easy to interpret their condition
- RaDoTech company -wants to see which features are used most by RaDoTech users
- Doctors/Physicians - want to see changes in user's health statistics using the historical trends

Precondition:

User has an account on the RaDoTech app

User has linked a RaDoTech device

User has recorded valid health data from a RaDoTech device

User has stored valid health data in the database

Success Guarantee:

User is presented with a bar chart of their organ level data color coded to match organ health with organ normality levels

User is presented with a overall body chart of all organs color coded to match organ health with organ normality levels

User is presented with a radar chart of all organs color coded with normality levels and average calculations

Main Success Scenario:

1. User opens RaDoTech app and selects a user
2. User selects a particular scan to view its data and selects visualization tab
3. Application queries the database for the user's health data (**Use Case 10**)
4. User is shown the three tabs of the different charts
5. User clicks on a tab and the application requests the appropriate chart of their health data
6. Application analyses user's processed health metrics and generates the graph

Extensions:

1a. No users are stored in the database, failure to select a user, respond with create a user profile

2a. No previously recorded assessments on the user's device, respond with make a scan first.

5a. Application fails to request graph due to misread data from input stage.

5b. Application fails to request graph due to retrieved metric data being incomplete or corrupted, ask user for a new scan.

6a. Application fails to compute graph due to anomalies on health metric data, the chart appears unbalanced/inconsistent with previous readings