**CareWheels Project**

Requirements Document

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# **Introduction**

Introduce this document and the project it describes. You should also summarize the remaining content of the document here.

This document details the MVP requirements for the CareBank applicatio being created by the CareWheels capstone project team. This document begins with a brief introduction to the specifics of the document itself, with information about the purpose and scope of the document, the target audience, and a listing of terms and definitions used in the document.

The next section provides a product overview of the CareBank application. This section includes information on the stakeholders of the project, and the use cases for the software.

The following two sections provide detailed descriptions of the functional and nonfunctional requirements of the software.

The final section provides information about the milestones and deliverables of the project.

## Purpose and Scope

You should describe this document by giving its purpose, scope.

The purpose of this document is to define the project scope and details for the CareBank application software. Moveover, the document elaborates on user and system requirements needed for proper functioning of the software. This document is intended to provide the technicial requirments needed for the design of the software components by software engineers, and as an outline of the project for the managers overseeing the project.

## Target Audience

Describe the target audience for this document.

This document is intended for the CareWheels project managers, and the software engineers that will be designing the CareBank application software.

## Terms and Definitions

Define any terms or acronyms you will be using in the remainder of this document.

|  |  |
| --- | --- |
| **Term** | **Definition** |
| CareBank | The application described by this document. |
| CareWheel | A group CareBank application users. |
| Hub | View of the CareWheel inside of the CareBank application software. |
| Member | An individual CareBank user. |
| Spoke | Member of the CareWheel that is not the current CareBank user. |
| Sen.se Server | An internet available service run by Sen.se Inc that provides sensor data for physical sensor devices used by CareBank users. |
| CareBank Server | An internet available service run by CareWheels that provides stored CareBank user information, and mediates time transactions between CareBank users. |

# **Product Overview**

Give a high level description of the functionality of the project here. Describe the purpose of this section. It may be useful to give your definition of a user, a stake holder and a use case. If there are scope limitations to the project, i.e. things you will not be doing, or are not required to do, this is a good section to put those.

The CareBank application software is a mobile application that allows users to monitor the status of their peers in a CareWheel. The CareBank application contacts the CareBank and Sen.se servers for information about members of the group and their associated sensor data. The software uses the information recieved from those sources to allow the user to view other members sensor data and contact them via phone if nessessary.. The CareBank application also collects information about how much time a user spent monitoring and contacting spokes in their CareWheel, and sends that information to the CareBank server so that it may perform time credits and transactions for the CareBank users.

This section details the users, stakeholders, and use cases of this project. A user is a person that interacts with the CareBank application. A stakeholder is a person or business that is deploying the CareBank application to their members mobile devices. A use case is an interaction of a user with the CareBank application software, and the resulting CareBank application interaction with the Sen.se server and or the CareBank server.

## Users and Stakeholders

Describe the purpose of this section. Only a few sentences are expected here.  
This section defines the users and stakeholders of the CareBank application software.

### CareWheels

List the first stakeholder or class of stakeholders if necessary. Describe, exactly, their role in the development, deployment, use, maintenance, etc. of the software.

The client that is deploying the CareBank application to it’s users mobile devices. During development, they define the required functionality and use cases of the software. During deployment, they report any bugs that members encounter to the development team. During maintenace, they make requests to the development team for new features to implement into the software.

### CareWheels members

Users of the CareBank application. During development, they will suggest user scenarios. During deployment, they report any bugs that they encounter to CareWheels. During maintenace, they make suggestions to CareWheels for new features to implement into the software.

### CareWheels Capstone Development Team

Developers of the CareBank software application. During development, they provide design and code base of the application. During deployment, they correct any bugs reported by the client. During maintenance, they implement any new features requested by the client.

### Bart Massey

Professor that oversees the progress of project development. During development, provides feedback to the CareWheels Capstone Development Team lead. At the conclusion of the project, assesses the contribution of each member of the capstone team and the deliverables that they produced.

## Use cases

Describe the purpose of this section. Only a few sentences are expected here.

This section defines the use cases of the CareBank application software. Use cases are initiated by users interacting with the application, and the resulting application interactions with the CareBank and Sen.se servers.

### User manually logs into the application

Describe the first use case here. Be sure to explicitly identify the participants, human or otherwise, and explain their roles. Diagrams may be effective here, particularly a sequence diagram.

A human user launches the application manually. The application will display UI elements for a username field, password field, submit button, checkbox to save the user credentials. If the checkbox to save the user credentials was not previously enabled, the user will input their CareBank server account username and password into the corresponding fields, and then press the submit button to begin the login process. If the checkbox to save the user credentials was previously enabled the user presses the submit button to begin the login process. Once the login process has been initiated the application will submit a login request to the CareBank server. If the request is successful the application will present the users CareWheel summary screen, otherwise the application will prompt the user to enter valid credentials into the login screen.

### Time based alarm alerts the user to check the status of their CareWheel

The application will use the mobile phone alarm system to prompt the user to check the status of their CareWheel. The user will dismiss the alarm and then decide whether or not to manually login to the CareBank application.

### Authenticated user views the application CareWheel screen

An authenticated user has navigated to the application CareWheel screen, either by logging into the application or by pressing the CareWheel screen icon. The application queries the CareBank server for that users information, including their current account balance, group membership, and the group members in that users CareWheel. The application will use local storage to determine if a user had previously spent time in the application that needs to be credited against their account, if so the application will send a crediting request to the CareBank server. The application then uses the information returned from the CareBank server to query the Sen.se server for sensor information belonging to each other group member. The application will then analyze the data returned from the Sen.se server to determine each other group members status, and then save that data to local storage. The application then displays UI elements representing the current users CareBank balance, shortcut to Cyclos application, and information about each member of the CareWheel group, including their name, photo, and alert level. The application will then begin tracking the users time spent on this screen and save that information to local storage. The application will automatically refresh this page every five consectutive minutes spent on the page.

### Authenticated user views a spokes sensor data screen

An authenticated user has navigated to a spoke’s sensor data screen by tapping on the spoke’s photo on the CareWheel screen. The application will use the Sen.se server data gathered by the application during the last viewing of the CareWheel screen to display graphs representing the spoke’s sensor data. The application will show a radial graph of the last seven days of the spokes refridgerator sensor data, and a radial graph of the last seven days of the spokes medication sensor data. The application will also display a button allowing the user to initiate a phone call with the spoke. The application will then begin tracking the users time spent on this screen and save that information to local storage.

### Authenticated user calls a spoke using the application

An authenticated user has pressed the call spoke button on that spoke’s sensor data screen. The application records the time the call button was pressed and allows the call to be placed. After the call has finished and the application has returned to the spoke sensor data screen, the application will query the phone to assess the total time of the call. The application will then send a request to the CareBank server to have the authenticated users account credited for the time of the call, as well as to have the spoke’s account debited for the time of the call.

### Authenticated user launches Cyclos application from CareWheels application

A authenticated user has pressed the shortcut to the Cyclos application from the CareWheel screen. The application will launch the Cyclos application if it is present, otherwise the application will inform the user that they need to install the Cyclos application before using this feature.

# **Functional Requirements**

Describe the purpose of this section and outline its contents. Only a few sentences are expected here. It may help to define a functional requirement.

The CareBank App is an Android based tool that functions as an interface for a user’s CareBank activity. Once logged in, a user will be alerted by events that the user can respond to crediting his or her CareBank account. Additionally, the application will display scheduled events, and it will allow users to view their CareBank accounts. The presentation of the application should give a user a sense that what they are doing is valuable.

## Functional Requirement 1

Describe the first functional requirement. This is the meat of the document, so be sure to use precise language. Include diagrams when appropriate.

The GUI interface needs to be designed on such a way as to insure ease of use by all users. It should be seemless and informational without being cumbersome.

### Functional Requirement 1 Aspect 1

It may be necessary to separate some of the larger functional requirements into several sub-requirements or requirement aspects.

Login

Once a username and password are given the application will verify that the provided information is correct by checking the information with the Cyclos Server. If correct, the application should move to the Host Home Screen automatically syncing with the other Members within the user’s group.

### Functional Requirement 1 Aspect 2

Don’t forget to remove the surrounding < and > symbols.

Host Home Screen

More -ESP

### Functional Requirement 1 Aspect 3

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Member Sensor Status Screen

More -ESP

### Functional Requirement 1 Aspect 4

Don’t forget to remove the surrounding < and > symbols.

Host CareBank Account Screen

More -ESP

## <Functional Requirement 2>

Don’t forget to remove the surrounding < and > symbols.

## <Functional Requirement 3>

Don’t forget to remove the surrounding < and > symbols.

# **Nonfunctional Requirements**

Describe the purpose of this section and outline its contents. Only a few sentences are expected here. It may help to define a nonfunctional requirement.

## <Nonfunctional Requirement 1>

Describe the first nonfunctional requirement. This is the meat of the document, so be sure to use precise language. Include diagrams when appropriate.

### < Nonfunctional Requirement 1 Aspects 1>

It may be necessary to separate some of the larger nonfunctional requirements into several sub-requirements or requirement aspects.

### < Nonfunctional Requirement 1 Aspect 2>

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## < Nonfunctional Requirement 2>

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## < Nonfunctional Requirement 3>

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# **Milestones and Deliverables**

Describe the purpose of this section and outline its contents. Describe the milestones on a high level. Include a description of your workflow plan. A Gantt chart may be beneficial here.

## <Milestone/Deliverable 1>

Explain what this milestone consists of. Identify the deliverable or deliverables that will be produced at this milestone. Generally describe what work will be done leading up to the conclusion of this milestone.

### <Milestone/Deliverable 1 Stage 1>

Some of the larger milestones may be broken up into stages. Explain what is involved in this stage and what deliverable will be produced at the end of this stage.

### < Milestone/Deliverable 1 Stage 1>

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## <Milestone/Deliverable 2>

Don’t forget to remove the surrounding < and > symbols.