MIAMI

CSC 431

IoT Application for Refrigerator

Software Requirements Specification (SRS)

Team 19

MinA Jang	Rewrote version 1 of the SRS according to the comments
Andrew Burch	4 System Requirements (3 Functional, 1 Non-Functional), 1 Use Case Diagram
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Version History

Version	Date	Author(s)	Change Comments
1	2/27/21	Andrew Burch, Joshua Welsh	
2	3/8/21	MinA Jang	Addressed the comments from the TA (reference slack team19 channel)
3	4/30/21	Joshua Welsh	Final changes to SRS - Adding system constraints

Table of Contents

Table of Tables

<Generate table here>

Table of Figures

<Generate table here>

1 System Requirements

1.1 Functional Requirements

1.1.1 Barcode Compatibility

Title	Barcode compatibility
Description	The application must be able to read in barcode on the receipt so that the relevant information for grocery list could be extracted
Priority	1
Precondition(s)	The application’s built in camera feature should be open to scan the receipt barcode.
Basic Flow	1. The device scans the barcode on a grocery receipt 2. The raw data is read for a classification
Postconditions(s)	The shopped grocery list is read into the system, ready for a grocery classification.
Use Case Diagram	3.1.1

1.1.2 Add Grocery

Title	Add Grocery
Description	The user should be able to add individual grocery
Priority	1
Precondition(s)	The user selects the add option to prompt addition to the grocery list.
Basic Flow	1. The user inputs the name and the type of the grocery 2. The input data is read for a classification
Postconditions(s)	The grocery information is read into the system, ready for a grocery classification.
Use Case Diagram	3.1.1

1.1.3 Grocery Classification

Title	Grocery Classification
Description	The raw data collected from either barcode scanning or individual grocery addition is classified according to the grocery database provided by the server.
Priority	1
Precondition(s)	The grocery data is collected through barcode scanning or individual addition.
Basic Flow	1. If the barcode was scanned, the data is compared with the grocery database from the server to collect only grocery items. 2. The database connects the item with a food group and a corresponding expiration date. 3. Grocery list and information is saved

Postconditions(s)	The grocery data is saved with expiration dates, ready for the user to view/remove or edit. The data is also ready to be processed with the recipe database for a recommendation.
Use Case Diagram	3.1.1

1.1.4 View/ Remove/ Edit(Quantity) Grocery

Title	View/Remove/Edit(Quantity) Grocery
Description	The user should be able to view, remove or edit grocery list.
Priority	1
Precondition(s)	The user selects view/remove or edit option
Basic Flow	1., View: Grocery list (item name: quantity: purchased date: expiration date) is shown on the screen. Users can scroll the list up or down to view it. 2. Remove: Users can touch select individual items to prompt remove/edit options.
Postconditions(s)	The modified grocery list is saved
Use Case Diagram	3.1.1

1.1.5 Recipe Search

Title	Recipe Search
Description	The application must have a search function that makes use of stored food and drink items as well as user-set conditions.
Priority	2
Precondition(s)	The application must be connected to the Internet.
Basic Flow	1. The user may select one or more food and/or drink items among those stored in the refrigerator. 2. The application, which is connected to the Internet, searches a database for recipes containing those items (and meeting the user's conditions, such as a requirement that the results contain no more than *x* calories) 3. and reports the results to the user.
Postconditions(s)	The user receives suggested recipes and may make use of them by preparing the corresponding dishes and drinks.
Use Case Diagram	3.1.1

1.2 Non-Functional Requirements

1.2.1 Internet Connectivity

Title	Internet connectivity
Description	The application must have access to the Internet to connect with the server database.
Priority	1
Applicable FR(s)	Barcode Compatibility, Add Grocery, Grocery Classification, View/Remove/Edit(Quantity), Recipe Search, Recommendation Engine

1.2.2 Connection Speed

Title	Connection speed
Description	The application's Internet connection speed should be such that it generally returns search results within two seconds.
Priority	3
Applicable FR(s)	Internet connectivity, search functionality

1.2.3 Database Update

Title	Database Update
Description	If the grocery database does not have information on the new item, prompt user a question on its food group and add. Notify the server with the activity and update database with new information.
Priority	1
Applicable FR(s)	Barcode Compatibility, Add Grocery

1.2.4 Expiration Notification

Title	Expiration Notification
Description	The application must notify the user about the approaching expiration date
Priority	3
Applicable FR(s)	Expiration Notification

1.2.5 Recommendation Engine

Title	Recommendation Engine
Description	The application automatically calls recipe search on the grocery list and recommends recipes to the user.
Priority	3
Use Case Diagram	3.1.1

1.2.6 Configure Notifications

Title	Configure Notifications
Description	The user must have the ability to disable expiration and recommendation notifications or set their frequency. Eg. high frequency and low frequency settings.
Priority	3
Applicable FR(s)	Expiration Notification, Recommendation Engine

2 System Constraints

2.5 Network Constraints

< List all network constraints in the following example format >

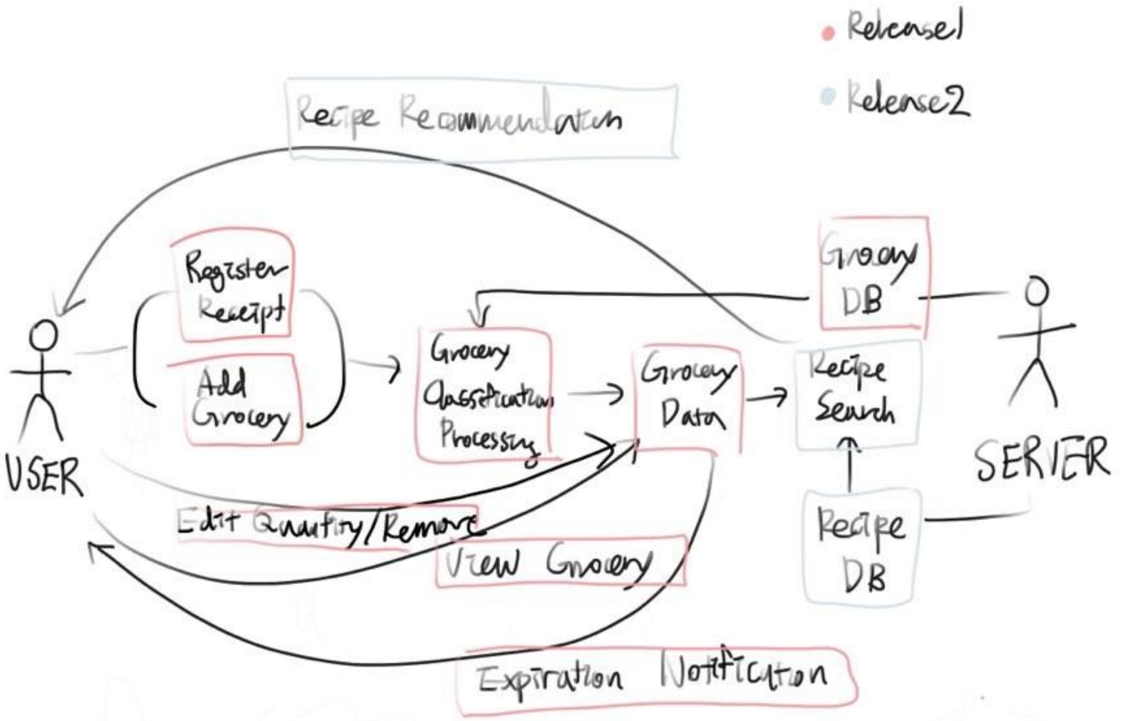
2.5.1 No Offline Support

Title	No offline support
Description	This app currently only works if the user has an internet connection. No support is provided for offline usage because we would be unable to retrieve data from the database. Storing large amounts of data on the user's phone for offline use also changes the architecture in such a way that the current model cannot support.
Priority	1

3. Requirements Modeling

< List all Use-case diagrams for the functional requirements in the following format>

3.1 System Requirements


● Release1
● Release2
Recipe Recommendation
Register Receipt
Add Grocery
USER
Grocery Classification Processing
Grocery Data
Grocery DB
Recipe Search
Recipe DB
SERVER
Edit Quantity/Remove
View Grocery
Expiration Notification