

iCook (Virtual Pantry & Virtual Cookbook Application) Team
4: “SE370 Get Some”

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Software Requirements Specification Document

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1 Purpose

Cooking was a skill once required by every human being. Now, in our information era, we have fast food and cheap and convenient restaurants. Most people have very limited abilities in cooking. Making a bowl of cereal may be the best some can do. iCook hopes to change that. A benefit of technology is information is at our fingertips. No longer do we need to pour through Grandma's Cookbook to find delicious recipes.

For any home chef, planning a meal requires knowledge of what ingredients one has or lacks. If one wants to attempt a recipe, they must first make sure that they have all required ingredients for said dish, and if not, they are forced to either find a new dish with ingredients they do have or go out to the store to buy missing ingredients. Keeping track of ones' ingredients can be a hassle and knowing which recipes are available can be difficult unless a specific recipe is in mind. By creating a new software application that can store a user's list of ingredients/cookware and return all possible recipes, the time and cost it takes to find a recipe can be significantly reduced.

2 Scope

The name of this application will be iCook. It will be a virtual pantry for the who wish to search recipes based off ingredients they have on hand. The benefits of having a virtual pantry is that instead of keeping a virtual note of all ingredients a user has, they only need to refer to this application. The benefits of a virtual cookbook is that it relieves the user of another physical item for them to have. And finally, the benefit of these two functioning together is the user will be able to know what recipes that can make from the ingredients they have on hand.

The goal of the application is to allow the user to input, delete, and/or update ingredients into the iCook application. From there, they will be able to generate recipes that are predefined in the iCook database. Then, when a recipe is selected, the following should be displayed for the user: the recipe's description, the necessary ingredients for the recipe, the amount/measurements per ingredient, and the cooking instructions of the recipe. The user will also have an option to add/delete said recipe to their pantry, which may be viewed at anytime during the usage of the application.

3 User characteristics

3.1 Key users

The key users will be the end users (cooks) themselves

- **User role responsibilities:** Users will add, update, and/or delete ingredients in the iCook application. From there, they will be able to generate a list of recipes they can make from ingredients they have.
- **Subject matter experience:** The user's knowledge of the domain is rated as journeyman. We assume that they do not possess the skills of a professional chef, but they are experienced enough around the kitchen to be able to comfortably cook fresh meals with the use of a multitude of ingredients and cooking tools.
- **Technological experience:** The user's knowledge of relevant technology is rated as either journeyman. Since the user opts to use a digital cookbook like our application, we can assume that the user is comfortable navigating around mobile devices and/or personal computers. Thus, since our iCook application will be running on these devices, we believe that the users will be able to use it with relative ease.
- **Other user characteristics:** The user can come from all age groups. The only hindrance any potential user may have is not being able to understand how to use computer applications and/or working in the kitchen.

3.2 Secondary users

The secondary users will be the maintenance team

- **User role responsibilities:** The maintenance team will ensure that the iCook application runs properly 24/7. This includes fixing bugs and making patches that will be implemented in future updates.
- **Subject matter experience:** The maintenance team is unlike the development team. They know how the iCook application itself functions, but it is assumed that they don't care about the domain because it is their job to maintain the system, not create and implement new features for the system. Thus, their knowledge of the domain can be rated as novice.
- **Technological experience:** The experience the maintenance team has with relevant technology is rated as master. They know both the iCook application and its application environment just as much as the developers do. Since the application will be running on mobile devices and personal computers, it is assumed that they are efficient in using these systems when working on the application.
- **Other user characteristics:** It is assumed that everyone on the maintenance team will all come from similar educational backgrounds since they will all have proficient knowledge in coding.

3.3 Unimportant users

Unimportant users will consist of any user that attempts to hack the iCook database.

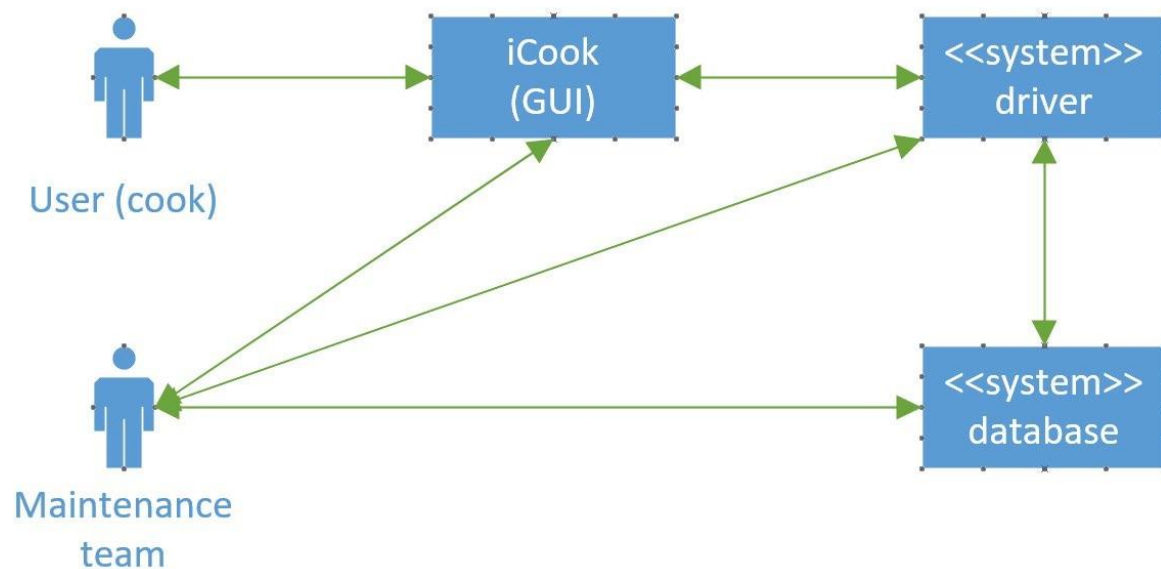
- **User role responsibilities:** Hackers attempt to breach the iCook security and change the iCook database.
- **Subject matter experience:** Experience is expected to be novice to master. A hacker will not need to know anything about food or cooking to crack the iCook database.

- **Technological experience:** Experience is expected to be master. The development team has minimized the chance that the database will be hacked, so any real attempt will require a high level of skill.
- **Other user characteristics:** Hackers will come from various education backgrounds.

4 Product perspective

4.1 System Context

The iCook application consists of a graphical user interface for users that wish to input ingredients that they have on hand in order to figure out what recipes they can make with said ingredients. On the backend, when the user inputs their ingredients and generates a recipe, the database will process the ingredients that the user has input and filter out what recipes have said ingredients. The database will also process the users information to register the user, as well as hold the users saved recipes, which are processed and served on command. This information is returned to the driver and the driver will send the information to the iCook user interface. The maintenance team is capable of interacting with iCooks GUI, driver, and database independent of the user so that they can fix bugs and create updates for the application.



4.2 User interfaces

The following are the required characteristics of the user interface for the iCook application

The user (cook) interface requires the following:

- It is required that the user register/log into an account before utilizing the iCook application.
- It is required that the first page after login, will prompt the user to sign out, view the about us page, view the enter ingredients stage or view their pantry.
- It is required that the about us page describes to the target audience what makes iCook unique.
- It is required that the view pantry page will display a list of recipes, which are searched in the DB against the users information, and returned via image format.
- It is required that in the enter ingredients page of the system interface, will display a list of ingredients selected by radio button, a back button, a clear button and a generate recipe button. If the user clicks on any ingredient listed, the ingredient will either be added or removed from the ingredients on hand. If the user clicks on the generate recipe button, then all ingredients on hand will be processed by the database and the second page of the system will open.
- It is required that in the view recipes page of the system interface, will display a list of potential recipe images, where the data associated with such recipes are found in the database that can be made from the ingredients on hand, which are found in the database. If the user clicks on any recipe displayed, then the third page of the system will open.
- It is required that in the view recipe page of the system interface, that it will display the following details of the recipe clicked by the user: the recipe's directions, the necessary ingredients for the recipe, the amount/measurements per ingredient, the cooking instructions of the recipe, an option to add/delete recipes from our pantry, options to navigate to any page of the application and a hyperlink to view the website corresponding with that recipe.

4.3 Software interfaces

- The iCook application requires the user to have an internet connection in order to connect to the iCook's MySQL database

4.4 Hardware interfaces and Memory constraints

The output of the iCook application should support up to 3840 x 2160 pixels for all supported devices.

4.5 Deployment requirements

The key users (cooks) are required to use personal computers (ie laptops, desktops, etc) with a central processing unit (CPU) with the processing power of at least an Intel Core i3 to be able to use the iCook application.

The key users (cooks) are required to use smart mobile devices (ie iphone, ipad, android phones, etc) with a software-on-a-chip (SoC) with the processing power of at least a Snapdragon 735 to be able to use the iCook application.

5 Assumptions and Dependencies

- It is assumed all users have access to a smart mobile device or personal computer that is able to connect to the internet
- It is assumed that the users have all the physical ingredients that they will input into the iCook application
- It is assumed that the users understand how to count measurements and amounts of ingredients
- It is assumed that the users understand the definitions behind food and cooking terms that will be used in the iCook application; or have access to getting that information if otherwise.
- It is assumed that the users know how to perform cooking techniques that will be said in the iCook application; or have access to learning that information if otherwise.
- It is assumed that all recipes within the iCook database are regarded as edible and have been reviewed by culinary professionals

6 Specific requirements

6.1 System Functional Requirements

(R6.1.1) As a user, I want a clear idea of how to register/log into my account when first launching the application

(R6.1.2) As a user, I want a clear idea of how to sign out or navigate to the view recipes, enter ingredients, and about us pages.

(R6.1.3) As a user, I want a clear idea of how to navigate through the recipes saved in my pantry.

(R6.1.4) As a user, I want a clear idea of how to navigate to an ingredient of my choice upon launching the iCook application.

(R6.1.5) As a user, upon navigating to an ingredient, I want to be able to clearly add the corresponding ingredient, as well as the quantity of the ingredient.

(R6.1.6) As a user, after adding the ingredient I expect to be able to add additional ingredients, until I have added all available ingredients.

(R6.1.7) As a user, I expect to be able to verify every ingredient and choose to edit or delete an ingredient of my choosing.

(R6.1.8) As a user, after adding all ingredients I want a clear idea of how to navigate to the next portion of the application, where I have an brief overview of all recipes relevant to the ingredients I've added.

(R6.1.9) As a user, I want to be able to navigate all recipes which are displayed clearly, until I've made my choice.

(R6.1.10) As a user, after selecting a recipe, I expect the ingredients for the recipe and the directions to be displayed

(R6.1.11) As a user, after taking note of all ingredients, I expect a clear option to return to the enter ingredients page, where I can choose to add ingredients for another recipe.

(R6.1.2) As a user, after taking note of all ingredients, I expect a clear option to add or delete recipes from my pantry.

(R6.1.13) As a user, after taking note of all ingredients, I expect a clear option to navigate back to the view recipes page where the recipes I searched will still be displayed, as I may have clicked on another recipe by accident.

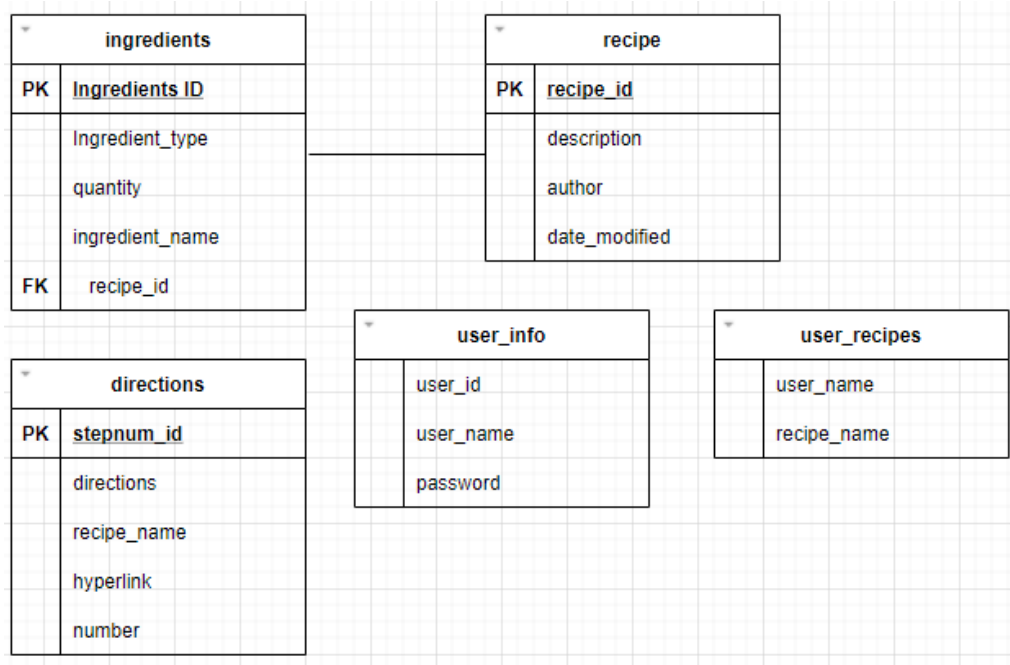
(R6.1.14) As a user, after taking note of all ingredients, I expect a clear option to return to the recipe pantry page where I can view all the recipes I have saved.

(R6.1.15) As a user, after taking note of all ingredients, I expect a clear option to return to the enter ingredients page, where I can choose to add ingredients for another recipe.

(R6.1.16) As a user, I want a clear idea of how to navigate to the main menu page.

(R6.1.17) As a user, I want a clear idea of how to navigate to a recipes webpage from the application.

6.2 Logical Database Requirements



6.3 Software System Attributes

6.3.1 Usability

(R6.3.1.1) The system shall enable the user to launch the application and access the database of all recipes at any time of day.

(R6.3.1.2) The user-interface shall provide ease of use; every step from adding ingredients to displaying a recipe will be clear and concise. Anyone that knows the English language will be able to use the application with no confusion.

(R6.3.1.3) The system shall be able to run on any phone, tablet or computer.

6.3.2 Performance

(R6.3.2.1) The system shall support up to any amount of users, utilizing the application at once.

(R6.3.2.2) The system shall have an on click response time for any amount of users using the application, of under 3 seconds.

6.3.3 Reliability/Dependability

(R6.3.3.1) The system shall have a rate of failure occurrence of .1%, for any user during a full year of usage.

(R6.3.3.2) The mean time to failure and aborting application will be 20 seconds.

6.3.4 Security

(R6.3.4.1) No user information will be stored in the database.

(R6.3.4.2) No one will be able to access the database because users will not be able to access the database directly.

(R6.3.4.3) The user will indirectly access the information through multiple classes passing the information which will eventually be displayed to the GUI.

6.3.5 Maintainability

(R6.3.5.1) The documentation for the code for the system shall contain helpful information so developers maintaining the software will be well aware of functionalities of each portion of code.

(R6.3.5.2) The code for the system shall have minimal dependencies so making changes to a modules code will not affect the whole program.

(R6.3.5.3) The system shall contain code that is refactored and contains no redundancy, so the bulk of the program is condensed as much as possible.