

Name:
Surname:

Software Engineering
Homework 3

Topic
Requirement Engineering

In this homework you will create requirements for the Moley Robot Kitchen. Goto company web site (<https://www.moley.com/>) and watch the video to understand what it is. There are other materials about the Moley Robot Kitchen on the web as well. Also use your imagination and be creative.

Q1) Write 5 non-functional requirements and 3 domain requirements for this system.

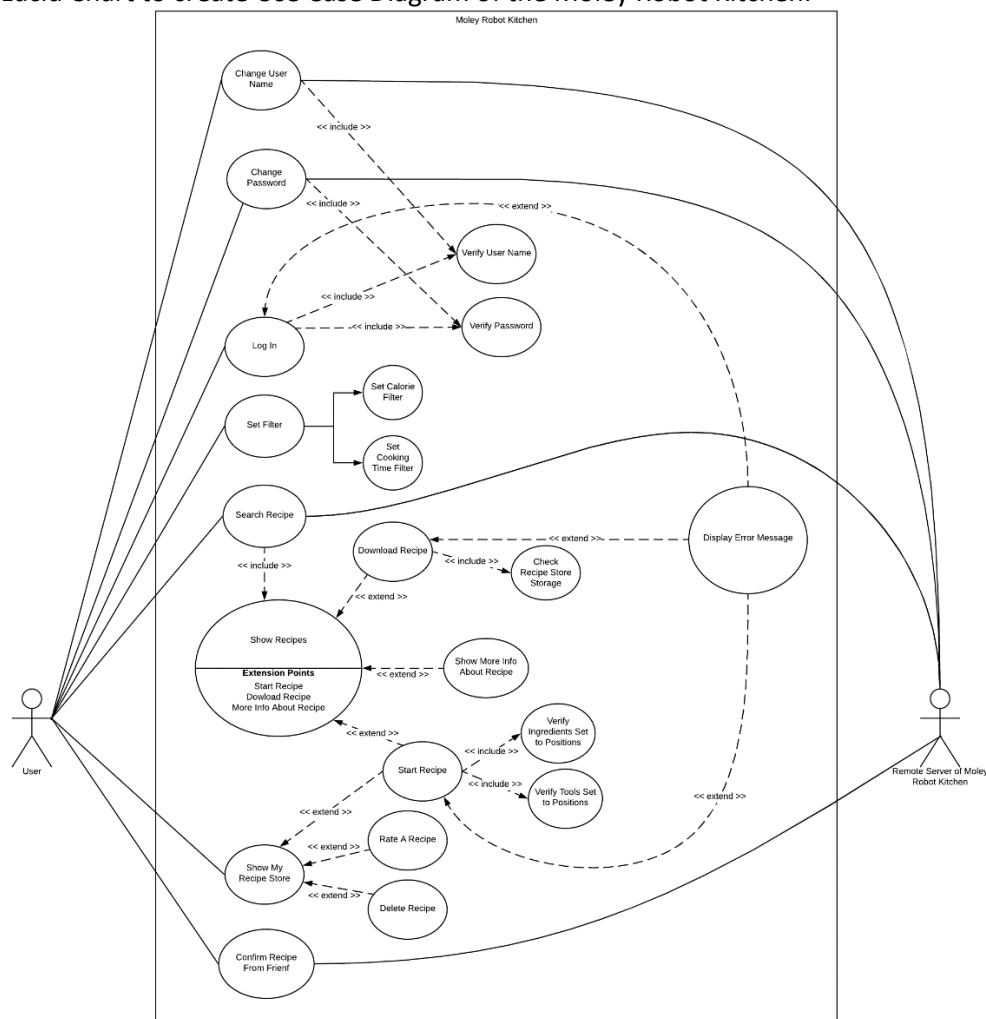
Non-functional Requirements:

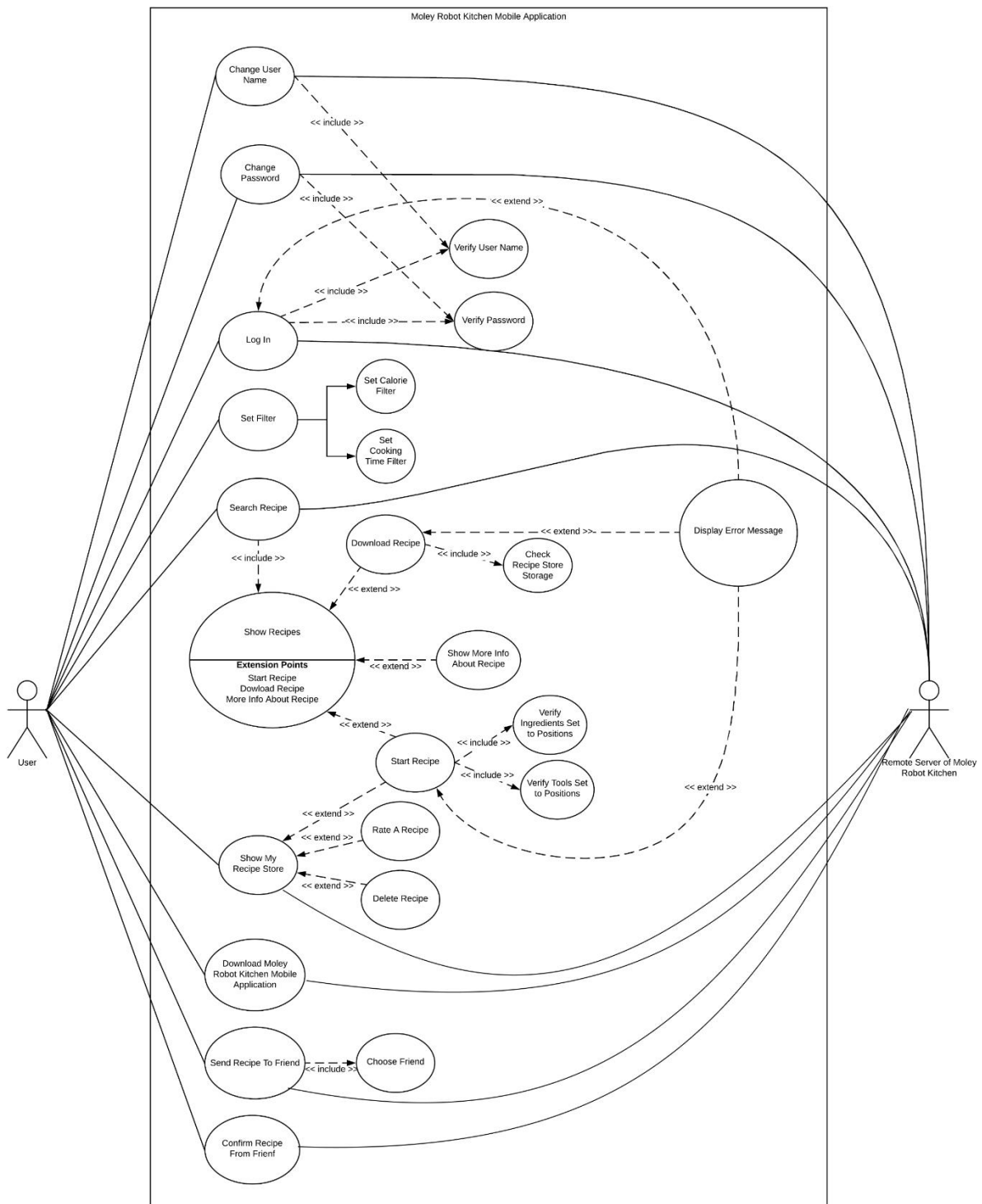
1. Robotic hands should produce the entire function of human hands with the same speed.
2. It should shut down the system within five seconds in the case of an emergency.
3. The system should activate the system within a second when a recipe is ordered via smart phone.
4. The system shall be available for 7/24 hours.
5. Robotic hands should produce the entire function of human hands with the same sensitivity and movement.

Domain Requirements:

1. The system shall allow users to search a recipe in the iTunes style recipe library.
2. The system shall be integrated with kitchen items of robotic arms, oven, hob.
3. The system shall have knowledge of temperature adjustment of the oven.

Q2) Use Lucid Chart to create Use Case Diagram of the Moley Robot Kitchen.





Q3) Extract functional user requirements.

1. The system shall allow the user to search a recipe by setting calorie and cooking time filters.
2. The system shall allow the user to download a recipe from the iTunes style recipe library.
3. The system shall allow the user to rate a recipe.
4. The system shall allow the user to start a recipe via smart phone and touch screen.
5. The system shall allow the user to set a password for login to the system.
6. The system shall allow the user to change her/his password.
7. The system shall allow the user to download Moley Robot Kitchen Mobile Application.
8. The system shall clean the environment after cooking a recipe.

Q4) Extract all the system requirements (for functional, non-functional, and domain requirements).

Functional Requirements:

1. Download Mobile Application (Available for Smart Phone)

- The system shall allow the user to download the mobile application through either an application store or similar service on the mobile phone.

2. Log In (Available for The Kitchen and Mobile Application)

- The system shall ask a username and password from user for first use.
- The system shall allow a user to set at least 8-characters password for login the system.
- The system shall not accept passwords smaller than 8 characters. If the user enters less than 8 characters while choosing the password, an error message shall ask the user to correct it.
- The system shall allow the user to change username from Settings in the menu in the touch screen or in the mobile application.
- The system shall allow the user change password from Settings in the menu in the touch screen or in the mobile application.
- The system shall update password information in the remote server by connecting to it in the case of changing password action via touch screen or mobile application.
- The system shall update username information in the remote server by connecting to it in the case of changing username action via touch screen or mobile application.
- The system shall update password information in the local storage in the touch screen software in the case of changing password action via touch screen.
- The system shall update username information in the local storage in the touch screen software in the case of changing username action via touch screen.
- The system shall login to the system by connecting to the remote server and validating the password and username information in the mobile application.
- If not validated, the system shall display an error message containing username or password is incorrect.
- The system shall login to the system by validating password and username information stored in the local storage in the touch screen software.
- If not validated, the system shall display an error message containing Username or password is incorrect.

3. Search Recipe (Available for The Kitchen and Mobile Application)

- The system shall allow the user to search a recipe without any filter.
- The system shall allow the user to search a recipe by setting calorie and cooking time filter.
- The system shall list the recipes found by search. If no recipe is found, the system shall display a message giving information that no recipes are found in the recipe library.
- The system shall connect to the remote server of Moley Robot Kitchen to search in the iTunes style recipe database of the system in both mobile application and touch screen software.

4. Set Search Filters (Available for The Kitchen and Mobile Application)

- The system shall allow the user to set calorie filter when searching a recipe.
- The system shall allow the user to set cooking time filter when searching a recipe.

5. Reset All Filters (Available for The Kitchen and Mobile Application)

- The system shall allow the user to reset calorie and cooking time filters.

6. Show Recipe (Available for The Kitchen and Mobile Application)

- The system shall display calorie, cook type, cooking time, rate, ingredients when the user clicks a recipe.

7. Show More Information About Recipe (Available for The Kitchen and Mobile Application)

- The system shall display calorie, cook type, cooking time, rate, ingredients and preparation details when the user clicks More Information while displaying a recipe.

8. Start Recipe (Available for The Kitchen and Mobile Application)

- The mobile application shall allow the user to start a recipe remotely.
- The system shall allow the user to start a recipe when the user clicks Start Recipe button in a listed searched recipe both by the mobile application and touch screen.
- The system shall allow the user to start a recipe when the user clicks Start Recipe button in the recipes listed in the user's Recipe Store.
- The system shall check whether the ingredients are put in place.
- The system shall check whether the tools are put in place.
- If an ingredient or a tool is not put in a proper place, the system shall show an error message.
- The system shall clean the environment after finishing cooking recipe.
- The system shall glide glass screens across the unit before robotic use starts.
- The system shall retract robotic arms when robotic use is completed.
- The system shall connect to the remote server of Moley Robot Kitchen to send start recipe request to the Moley Robot Kitchen in the mobile application.

9. Download Recipe to The User's Recipe Store (Available for The Kitchen and Mobile Application)

- The system shall allow the user to download a recipe.
- The system shall provide the user a local recipe store in order the user to store downloaded recipes.
- The system shall connect to the remote server of Moley Robot Kitchen to download a recipe from the iTunes style recipe database of the system in both mobile application and touch screen software.

10. Show the User's Recipe Store (Available for The Kitchen and Mobile Application)

- The system shall list the user's recipes when the user clicks her/his recipe store.
- The system shall allow the user to click a recipe when the user is listing recipes in her/his recipe store.
- The system shall get recipes in the user's recipe store stored in the local storage in the touch screen.
- The system shall connect to the remote server of Moley Robot Kitchen to get recipes in the user's recipe store in the mobile application.

11. Delete Recipe from The User's Recipe Store (Available for The Kitchen and Mobile Application)

- The system shall allow the user to delete a recipe from the user's recipe store.
- The system shall connect to the remote server of Moley Robot Kitchen to delete a recipe from the user's recipe store both in the mobile application and the touch screen software.
- The system shall delete a recipe from the local storage in the touch screen software.

12. Rate Recipe in The User's Recipe Store (Available for The Kitchen and Mobile Application)

- The system shall allow the user to rate a recipe in her/his recipe store.
- The system shall connect to the remote server of Moley Robot Kitchen to update the rate of a recipe both in the mobile application and the touch screen software.
- The system shall update recipe rate in the local storage in the touch screen software.

13. Send Recipe to Friend (Available for Mobile Application)

- The system shall allow the user to send a recipe to a friend's Moley Robot Kitchen while seeing a recipe.
- The system shall ask for a username when the user clicks Send to Friend while seeing a recipe.
- The system shall search the username in its server and if a user exists with this username, the recipe shall be sent to this kitchen.
- If a user does not exist with this username, the system shall display an error containing information about No User Is Found.
- The system shall connect to the remote server of Moley Robot Kitchen to search a user with username when sending a recipe to friend in the mobile application.
- The system shall connect to the remote server of Moley Robot Kitchen to send start recipe request to another user in the mobile application.

14. Confirm Recipe from Friend (Available for The Kitchen and Mobile Application)

- The system shall ask for confirmation via a dialog box when a user gets recipe from another user.
- If the user confirms the recipe, the system shall start the recipe.
- The system shall connect to the remote server of Moley Robot Kitchen to update the confirmation status of start recipe request sent by another user in both the mobile application and the touch screen software.
- If the request is confirmed, the mobile application shall connect to the remote server of Moley Robot Kitchen to start recipe.

Non-functional Requirements:

- Robotic hands should produce the entire function of human hands with the same speed.
- It should shut down the system within five seconds in the case of an emergency.
- The system should activate the system within a second when a recipe is ordered via smart phone.
- The system shall be available for 7/24 hours.
- The system shall store at least 1000 recipes and with the assigned 8GB in the user's recipe store.
- Robotic hands should produce the entire function of human hands with the same sensitivity and movement.
- Downtime of the system should not exceed 10 seconds.
- The user must login to the system with a username and password provided by the company for first use.
- The system shall be controlled via touch screen or its mobile application on a smart phone.

Domain Requirements:

- The system shall allow users to search a recipe in the iTunes style recipe library.
- The system shall be integrated with kitchen items of robotic arms, oven, hob.
- The system shall have knowledge about terms of use of the kitchen items, oven and hob.
- The system shall have knowledge of temperature adjustment of the oven and hob.
- The system shall have knowledge of quantity standard of an ingredient.
- The system shall have knowledge of positions of kitchen items, oven and hob.