

Software Requirements Specification

Lyst: Recipe

Tristan Dang
Cassiee Latshaw
Eddy Rodriguez
Dilip Shah

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1. INTRODUCTION

1.1 PURPOSE

This project will result in the development of the Lyst: Recipe system, a system where users may enter a list of ingredients that they have available and will be given a list of recipes they could make with said ingredients. The user will select from abridged lists of ingredients to avoid validating user entry, and will be subject to several criteria such as food groups (meat, grain, vegetable, fruit, dairy), meal type (breakfast, lunch, dinner, appetizer, dessert), and required preparation time.

The Lyst: Recipe system is built on the concept of being a social network in that its content is heavily user-based. Recipes will initially be sourced by developers to ensure trusted content, but will eventually be more self-regulating by its users as the consumer base grows. This is done by allowing users to submit their own recipes as well as comment and rate existing ones. Recipes entered by developers from known sources (such as Food Network, allrecipes.com, or McCormick) will be marked as trusted, and user submissions will require a certain number of positive ratings to be marked as trusted in order to ensure a certain level of quality.

1.2 PROJECT SCOPE

The scope of the Lyst: Recipe project includes the planning, design, development, and testing of a prototype iteration of the system. The scope of this project also includes the completion of several deliverables including Software Requirements Specifications, Design Document, Test Procedures, and a User/Maintenance Guide. Project completion will occur at the end of the spring semester, after the prototype iteration of the system has been successfully completed.

For the prototype iteration, recipes in the database will be primarily sourced from hardcoding by the project development team. These recipe database entries will be automatically marked as trusted to serve as a starting point for the system's audience.

The Lyst: Recipe project will require the use of external webhosting and MySQL (My Structured Query Language) for database management, but no further outsourcing in terms of software or staff. Funding will not be required.

1.3 QUALITY ATTRIBUTE PRIORITY

In order for the system to be successful, it must take into account the following list of quality attributes, listed in order of priority, as agreed upon by the project team and Project Sponsor:

1. Usability – The system shall meet all requirements, be accessible to all users, and be intuitive to use in order to result in a good overall user experience.
2. Security – The system shall be capable of preventing unauthorized, malicious, or accidental access to its information in order to guarantee user safety.
3. Conceptual Integrity – The system shall be designed with consistency and cohesion. Components shall be modular and done with consistent coding style, conventions, and comments.
4. Performance – The system shall respond to user input in a timely manner, as described in *section 5.1* below.
5. Scalability – The system shall be able to handle increases in user-load without impact on performance for the future.

1.4 DOCUMENT CONVENTIONS

This document follows standard MLA Format. Bold-faced and capitalized text is used to indicate section and sub-section headings. Italics are used to reference sections within the document or other documents related to the project.

Tables are used to organize the requirement specifications in a way that can be quickly referenced.

1.5 INTENDED AUDIENCE

This document is intended to be read by the project team and Project Sponsor. It is organized in such a way that all the requirements should be easily understood by all project team members including the Team Lead, Team Scribe, individual deliverable leads, and developers. This document should give all readers a clear understanding of the expected requirements of the Lyst: Recipe system in order to produce a successful system.

1.6 REFERENCES

This document should be used in conjunction with the *Project Management Plan* deliverable created earlier during the spring semester.

2. SYSTEM DEFINITION

2.1 PRODUCT PERSPECTIVE

This system shall have a web-interface that allows users to interact with the database. Users will be able to create an account in order to post recipes, rate recipes, and comment on recipes. The following descriptions serve as brief summaries of the system's functions in accordance with the requirements listed in *section 4* below.

On the home page, users (both non-registered and registered users) shall be able to search for recipes as described in *section 4.1* below. The user shall be able to search the database according to their selections and will be presented with a page displaying the recipes they can make. The user will be able to click on the recipe they wish to see in detail.

Upon clicking on a recipe, the user will be presented with a page displaying said recipe's name, description, ingredients, meal type, preparation time, instructions, rating, and comments. The user shall be able to rate the recipe according to a 1-to-5 scale and comment on the recipe using a text entry field as described in *sections 4.5* and *4.6* below.

In the banner of the web-interface, there will be a login button. Upon clicking this button, users will be sent to a login page where they may enter their user credentials as described in *section 4.2* below.

If the user is logged in, there will be a submit recipe button in the banner of the web-interface. Upon clicking this button, users will be sent to a page where they may submit their own recipes by entering in the required information as described in *section 4.3* below.

If the user is logged in, there will be a profile button in the banner of the web-interface. Upon clicking this button, users will be sent to a page displaying their profile name and list of submitted recipes as described in *section 4.4* below. The user will be able to click on the recipe they wish to see in detail as described above.

If the user is logged in, there will be a logout button.

2.2 USER CLASSES AND CHARACTERISTICS

This system's main classes consist of registered users and recipes. User classes contain a username string, password string, and table of submitted recipes. Recipe classes contain a name string, description string, table of ingredients, meal type string, preparation time string, table of instructions, rating floating-point number, and table of comments.

2.3 OPERATING ENVIRONMENT

This software may be run in all of the popular web browsers including Google Chrome, Mozilla Firefox, Internet Explorer, Safari, and Opera. It may be run on Windows, OS X, and Linux operating systems.

2.4 ASSUMPTIONS AND DEPENDENCIES

This system shall require an internet connection for the duration of communication. User authentication information will be required to be unique but will not be encrypted at this stage of development. Database entries will be sourced by the project development team.

3. EXTERNAL INTERFACE REQUIREMENTS

3.1 USER INTERFACES

Below are some of the user interface prototypes:

Home page

Meat:	<input type="text"/>	+
Grain:	<input type="text"/>	+
Vegetable:	<input type="text"/>	+
Fruit:	<input type="text"/>	+
Dairy:	<input type="text"/>	+
Meal type:	<input type="text"/>	
Prep Time:	<input type="text"/>	
<input type="button" value="Search"/>		

Recipe search results

[Recipe name]	[rating]
[Description]	
[Recipe name]	[rating]
[Description]	
[Recipe name]	[rating]
[Description]	

Recipe page

[Recipe name]
By [Username]
[Rating]
[Description]
[Meal type]
[Preparation time]
[Ingredients]
[Instructions]
[Comments]

Login

Username:	<input type="text"/>
Password:	<input type="password"/>
Don't have an account? We'll sign you up!	
<input type="button" value="Login"/>	

Submit recipe

Name:	<input type="text"/>
Description:	<input type="text"/>
Meat:	<input type="text"/> +
Grain:	<input type="text"/> +
Vegetable:	<input type="text"/> +
Fruit:	<input type="text"/> +
Dairy:	<input type="text"/> +
Meal type:	<input type="text"/>
Prep Time:	<input type="text"/>
Instructions:	<input type="text"/> +
<input type="button" value="Search"/>	

User profile

[Username]				
Recipes:				
<table><tr><td>[Recipe name]</td><td>[rating]</td></tr><tr><td colspan="2">[Description]</td></tr></table>	[Recipe name]	[rating]	[Description]	
[Recipe name]	[rating]			
[Description]				
<table><tr><td>[Recipe name]</td><td>[rating]</td></tr><tr><td colspan="2">[Description]</td></tr></table>	[Recipe name]	[rating]	[Description]	
[Recipe name]	[rating]			
[Description]				
<table><tr><td>[Recipe name]</td><td>[rating]</td></tr><tr><td colspan="2">[Description]</td></tr></table>	[Recipe name]	[rating]	[Description]	
[Recipe name]	[rating]			
[Description]				

3.2 HARDWARE INTERFACES

This system will not require any specific hardware interface for development as the entirety of the project is web-based.

3.3 COMMUNICATIONS INTERFACES

This project will have its data stored in a MySQL database to hold the recipes, reviews, and user data. A reliable internet connection for the database is required to allow users to access and edit data.

4. REQUIREMENTS SPECIFICATION

4.1 RECIPE SEARCH

When the user navigates to the landing page of the web interface, the user shall be prompted to specify several criteria before searching for a recipe in the database. The user shall be able to input ingredients, meal type, and maximum preparation time to the system. After the user provides input for all criteria, the system shall return a list of recipes that contain all of the criteria. Then the user shall be able to view a recipe's description page by clicking on the recipe's search result.

Requirement	Select Ingredients and Food Groups	R001
Description	The user shall be able to select from an abridged list of ingredients categorized by food group to include in their query. There are five food group drop-down menus: meat, grain, vegetable, fruit, and dairy. A minimum of five different ingredients is required to perform a query. The five ingredients can be a combination of any of the five food groups. The user shall be able to select any amount of ingredients for their query as long as they have the ingredient as an option in a drop-down menu.	
Actors	<ul style="list-style-type: none">All system users	
Basic Steps	<ol style="list-style-type: none">The user shall be able to select an ingredient from any of the food group drop-down menus.	

	<ol style="list-style-type: none"> When the user selects an ingredient, the system shall display another drop-down menu for that food group underneath the selected ingredient. New drop-down menus shall include the abridged list of ingredients for that food group except for ingredients already selected by the user.
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Requirement	Select Meal Type	R002
Description	The user shall be able to select a meal type from a drop-down menu to specify in their query. In the meal type drop-down menu, there are five categories: breakfast, lunch, dinner, appetizer, and desert.	
Actors	<ul style="list-style-type: none"> All system users 	
Basic Steps	<ol style="list-style-type: none"> The user shall be able to select a meal type from the meal type drop-down menu. 	

Requirement	Select Preparation Time	R003
Description	The user shall be able to select a maximum preparation time from a drop-down menu to specify in their query. The options in the preparation time drop-menu shall vary based on the maximum preparation times of the recipes currently in the database.	
Actors	<ul style="list-style-type: none"> All system users 	
Basic Steps	<ol style="list-style-type: none"> The user shall be able to select a maximum preparation time from the maximum preparation time drop-down menu. 	

Requirement	Display Search Result	R004
Description	Once the user has provided all of their criteria, the system shall search the recipe database and display a list of all recipes that satisfy the query's criteria. In order for a recipe to satisfy the query's criteria, the recipe needs to include all of the specified ingredients, match the meal type, and the preparation time must be equal to or less than the selected preparation time.	
Actors	<ul style="list-style-type: none"> None 	
Basic Steps	<ol style="list-style-type: none"> The user shall be able to click on the "Search" button after they have selected their ingredients, meal type, and preparation time. The system shall check each recipe in the database to see if it satisfies all of the criteria. If the recipe satisfies all of the criteria, the system shall add the recipe to a list of search results. 	

	<ol style="list-style-type: none"> Once the system has checked all recipes in the database, the system shall display all recipes that include the criteria. The order of the recipes shall be based on the order of which the recipes are stored in the database.
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Requirement	Display Recipe Entry	R005
Description	<p>After the system has returned a list of recipes that satisfy the user's criteria, the user shall be able to click on one of those recipes to view the recipe's description page. A recipe's description page shall display the recipe's name, a list of ingredients, preparation time, instructions, rating, comments, and whether the recipe is marked as trusted. A recipe's rating shall be on a scale from 1-to-5 with 1 being the lowest and 5 the highest. The recipe's rating shall be calculated based on an average of ratings from registered users.</p>	
Actors	<ul style="list-style-type: none"> All system users 	
Basic Steps	<ol style="list-style-type: none"> If the user clicks on a recipe from the list of search results, the system shall display the recipe's description page. 	

4.2 USER AUTHENTICATION

In order to simulate a social network environment, users shall be able to create an account for them to login and logoff through the web interface. When a user attempts to login, the system shall check the user's entered credentials against the system's username and password entries of the user database, and either logs the user on to their account or creates an account for them. Any registered user shall also have the option to logoff their account if they are currently logged on to the web interface.

Requirement	Login	R006
Description	<p>The user shall be able to login to their account. The system shall either log the user on to their account, display an error message, or create an account for them based on their entered credentials.</p>	
Actors	<ul style="list-style-type: none"> All system users 	
Basic Steps	<ol style="list-style-type: none"> The user shall be prompted to enter a username and password. Once the user has entered their credentials, the user shall be able to click on the "Login" button underneath the text fields. If the user enters a username and password that matches a user entry in the user database, the system shall login the user and display the user's profile. If the user enters a username that is currently in the user database, but the password does not match the username, the system shall display an error saying "Password does not match username." If the user enters a username that is not in the user database, the system shall create a user entry with the entered username and password. Then the system shall login the user and display the user's profile. 	

Requirement	Logoff	R007
Description	A registered user shall be able to logoff their account.	
Actors	<ul style="list-style-type: none"> Registered users 	
Basic Steps	<ol style="list-style-type: none"> If the user is currently logged in, they shall be able to click on the “Logoff” button at the top of the current page. If the user clicks on the “Logoff” button, the system shall log off the user’s account and display the system’s landing page. 	

4.3 SUBMIT RECIPE

Requirement	Submit Recipe	R008
Description	A registered user shall be able to submit their own recipe to the recipe database. In order for a user to submit their recipe, the user needs to enter all of the information for the recipe including a name, list of ingredients, meal type, sequential instructions, and preparation time. Once a user has submitted their recipe, that recipe shall be displayed on a search query if their recipe satisfies a user’s criteria.	
Actors	<ul style="list-style-type: none"> Registered users 	
Basic Steps	<ol style="list-style-type: none"> If the system is displaying the user’s profile, the user shall be able to click on the “Submit Recipe” button. If the user clicks on the “Submit Recipe” button, the system shall display the “Recipe Submission” form. The user shall be able to enter the recipe’s information into the form. Once all of the fields on the form are complete, the user shall be able to click on the “Submit” button. If the user clicks on the “Submit” button, the system shall add their recipe to the recipe database. 	

4.4 DISPLAY USER PROFILE

Requirement	Display User Profile	R009
Description	A registered user shall be able to view their profile page. On their profile page, the system shall display the user’s username and a list of recipes they have submitted to the recipe database.	
Actors	<ul style="list-style-type: none"> Registered users 	
Basic Steps	<ol style="list-style-type: none"> If the user is currently logged on, they shall be able to click on the “User Profile” button at the top of the current page. If the user clicks on the “User Profile” button, the system shall display the user’s profile page. 	

4.5 RATE RECIPE

Requirement	Rate Recipe	R010
Description	A registered user shall have the option to rate any recipe that is currently in the database. Recipe ratings are based on a scale from 1-to-5, with 1 being the lowest and 5 the highest, and shall have options in increments of 0.5. The system shall display an error message if the user attempts to rate a recipe more than once or if they attempt to rate a recipe they submitted to the database.	
Actors	<ul style="list-style-type: none">Registered users	
Basic Steps	<ol style="list-style-type: none">If the user is currently logged on and viewing a recipe's description page, the user shall be able to click on the "Rate Recipe" button.If the user clicks on the "Rate Recipe" button, the system shall display a "Rate Recipe" field.The user shall be prompted to select their rating on a scale from 1 to 5.Once the user has selected their rating, the user shall be able to click on the "Rate" button, and the system shall calculate and display the recipe's new rating.After a user has rated a recipe, the system shall check if the recipe qualifies to be a trusted recipe (see Mark Trusted Recipe).If the user has already rated the recipe, the system shall display an error.If the user attempts to rate a recipe they submitted to the database, the system shall display an error.	

4.6 COMMENT ON RECIPE

Requirement	Comment on Recipe	R011
Description	A registered user shall have the option to comment on any recipe that is currently in the database. The user shall be able to comment as many times as they like on any recipe.	
Actors	<ul style="list-style-type: none">Registered users	
Basic Steps	<ol style="list-style-type: none">If the user is currently logged on and viewing a recipe's description page, the system shall display an "Add Comment" field to the bottom of the recipe's page.The user shall be prompted to enter text into the "Add Comment" field.If the user has entered text into the field, the user shall be able to click on the "Comment" button.If the user clicks on the "Comment" button, the system shall add the user's comment to the top of the comment thread on the recipe's description page.	

4.7 MARK TRUSTED RECIPE

Requirement	Mark Trusted Recipe	R012
Description	As users rate other user's recipes, the system shall check to see if a user's recipe qualifies to be regarded as a trusted recipe. Recipes that were not added by users automatically qualify to be trusted recipes. After a recipe is rated, the system shall execute a predefined algorithm to determine whether a recipe can be marked as trusted based on the recipe's current rating. In order for a recipe to be marked as trusted, the recipe needs to have an average of at least 4 as well as a minimum of five ratings. This predefined algorithm may be altered during the system design and testing phases of the development.	
Actors	<ul style="list-style-type: none">• None	
Basic Steps	<ol style="list-style-type: none">1. After a user has rated a recipe and the recipe was submitted by another user, the system shall determine whether the recipe can be marked as trusted.2. If the recipe's rating passes the predefined algorithm, the system shall display "Trusted Recipe" at the top of the recipe's description page.	

5. NONFUNCTIONAL REQUIREMENTS

5.1 PERFORMANCE REQUIREMENTS

The system must respond to user input within three seconds when submitting the recipe search, logging in, adding a recipe, rating a recipe, and commenting on a recipe. This response time may vary depending on the user's internet connection and user-load in the future.

5.2 SECURITY REQUIREMENTS

In order to keep user data secure, the system will require a password in order to login. If the entered password does not match up with the username, the user will not be logged in.

5.3 SOFTWARE QUALITY ATTRIBUTES

Several tests by the project team will be required to check whether the completed system has satisfied the software requirements. The client will be informed after the project has been completed for further testing or review.

5.4 AVAILABILITY

The system will remain online during all hours.

5.5 TRACEABILITY

The system code shall be thoroughly commented throughout in order to clearly identify which of the requirements described in this document are being implemented.

5.6 MULTILINGUAL SUPPORT

Future enhancements may include multilingual support through different language display options.

6. REQUIREMENTS TRACE MATRIX

RQMT ID	Text of RQMT	Requirement Source Doc	Requirement Implementation Site	Test Case # in Test Procedure	Test Approach (D, A, T, I)	PASS/ FAIL
R001	Users shall be able to select from an abridged list of ingredients categorized by food group.	Req. 1 & 2: “CSCE 4901 – Some Suggested Requirements for Recipe App” – Provided by Sponsor	Recipe Search	T001	T	
R002	Users shall be able to select a meal type.	Req. 3: “CSCE 4901 – Some Suggested Requirements for Recipe App” – Provided by Sponsor	Recipe Search	T002	T	
R003	Users shall be able to select a maximum preparation time.	Req. 4 & 5: “CSCE 4901 – Some Suggested Requirements for Recipe App” – Provided by Sponsor	Recipe Search	T003	T	
R004	System shall search the recipe database and display a list of all recipes that satisfy the query’s criteria.	Derived requirement by project team	Recipe Search	T005	I	
R005	Users shall be able to click on a recipe to view the recipe’s description page.	Derived requirement by project team	Recipe Page	T006	I	
R006	Users shall be able to login to their account.	Derived requirement by project team	User Authentication	T007	T	
R007	Registered users shall be able to	Derived requirement	User Authentication	T008	T	

	logoff their account.	by project team				
R008	Registered users shall be able to submit recipes to the recipe database.	Derived requirement by project team	Submit Recipe	T009	T	
R009	Registered users shall be able to view their profile page.	Derived requirement by project team	User Profile	T010	I	
R010	Registered users shall be able to rate recipes in the recipe database.	Derived requirement by project team	Rate Recipe	T011	T	
R011	Registered users shall be able to comment on any recipe in the recipe database.	Derived requirement by project team	Comment on Recipe	T012	T	
R012	System shall check to see if a user's recipe qualifies to be marked as a trusted recipe.	Req. 6: "CSCE 4901 – Some Suggested Requirements for Recipe App" – Provided by Sponsor	Trusted Recipe Algorithm	T013	A	

(D)emonstration, (A)nalysis, T(est), or (I)nspection