# Software Requirements Specification Lyst: Recipe

Tristan Dang Cassiee Latshaw Eddy Rodriguez Dilip Shah

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# TABLE OF CONTENTS

1. Introduction	3
1.1 Purpose	3
1.2 Project Scope	3
1.3 Quality Attribute Priority	3
1.4 Document Conventions	4
1.5 Intended Audience	4
1.6 References	4
2. System Definition	4
2.1 Product Perspective	4
2.2 User Classes and Characteristics.	5
2.3 Operating Environment	5
2.4 Assumptions and Dependencies	5
3. External Interface Requirements	5
3.1 User Interfaces	5
3.2 Hardware Interfaces	<i>6</i>
3.3 Communications Interfaces	<i>6</i>
4. Requirements Specification	<i>6</i>
4.1 Recipe Search	<i>6</i>
4.2 User Authentication	8
4.3 Submit Recipe	9
4.4 Display User Profile	9
4.5 Rate Recipe	10
4.6 Comment on Recipe	10
4.7 Mark Trusted Recipe	11
5. Nonfunctional Requirements	11
5.1 Performance Requirements	11
5.2 Security Requirements	11
5.3 Software Quality Attributes	11
5.4 Availability	11
5.5 Traceability	11
5.6 Multilingual Support	11
6. Requirements Trace Matrix	12

## 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

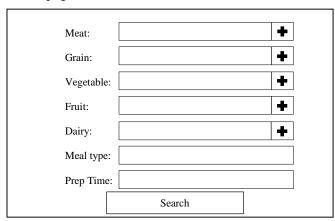
This system shall require an internet connection for the duration of communication. User authentication information will be required to be unique but will not be encrypted at this stage of development. Database entries will be sourced by the project development team.

## 3. EXTERNAL INTERFACE REQUIREMENTS

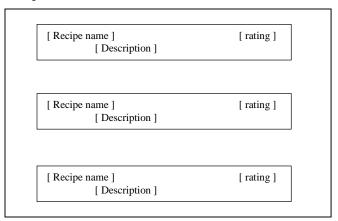
#### 3.1 USER INTERFACES

Below are some of the user interface prototypes:

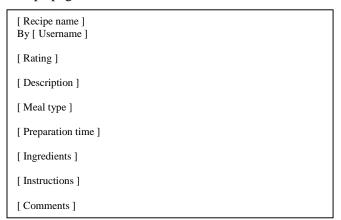
## Home page



## Recipe search results



## Recipe page

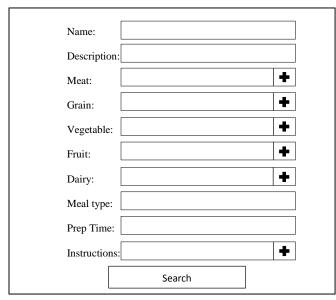


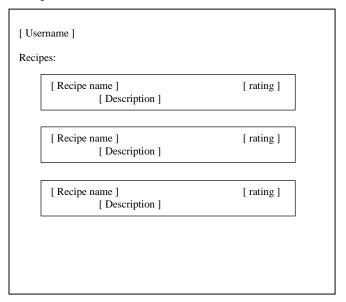
## Login



## Submit recipe

## User profile





## 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 categorize food group to include in their query. There are five food group drop-down meat, grain, vegetable, fruit, and dairy. A minimum of five different ingredien required to perform a query. The five ingredients can be a combination of any five food groups. The user shall be able to select any amount of ingredients for query as long as they have the ingredient as an option in a drop-down menu.	enus:  onus:  of the
Actors	All system users	
Basic Steps	<ol> <li>The user shall be able to select an ingredient from any of the food grodrop-down menus.</li> </ol>	oup

2.	When the user selects an ingredient, the system shall display another drop-
	down menu for that food group underneath the selected ingredient.
3.	New drop-down menus shall include the abridged list of ingredients for that
	food group except for ingredients already selected by the user.

Requirement	Select Meal Type	R002
Description	The user shall be able to select a meal type from a drop-down menu to specify their query. In the meal type drop-down menu, there are five categories: break lunch, dinner, appetizer, and desert.	
Actors	All system users	
Basic Steps	The user shall be able to select a meal type from the meal type drop-d menu.	own

Requirement	Select Preparation Time R00	03
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 sha vary based on the maximum preparation times of the recipes currently in the database.	.11
Actors	All system users	
Basic Steps	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	• None	
Basic Steps	<ol> <li>The user shall be able to click on the "Search" button after they have selected their ingredients, meal type, and preparation time.</li> <li>The system shall check each recipe in the database to see if it satisfies all of the criteria.</li> <li>If the recipe satisfies all of the criteria, the system shall add the recipe to a list of search results.</li> </ol>	

4.	Once the system has checked all recipes in the database, the system shall
	display all recipes that include the criteria.
5.	The order of the recipes shall be based on the order of which the recipes are stored in the database.

Requirement	Display Recipe Entry	R005
Description	After the system has returned a list of recipes that satisfy the user's criteria, the shall be able to click on one of those recipes to view the recipe's description page shall display the recipe's name, a list of ingredient preparation time, instructions, rating, comments, and whether the recipe is material as trusted. A recipe's rating shall be on a scale from 1-to-5 with 1 being the loand 5 the highest. The recipe's rating shall be calculated based on an average ratings from registered users.	oage. its, irked owest
Actors	All system users	
Basic Steps	<ol> <li>If the user clicks on a recipe from the list of search results, the system display the recipe's description page.</li> </ol>	shall

## **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	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.	
Actors	All system users	
Basic Steps	<ol> <li>The user shall be prompted to enter a username and password.</li> <li>Once the user has entered their credentials, the user shall be able to click on the "Login" button underneath the text fields.</li> <li>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.</li> <li>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."</li> <li>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.</li> </ol>	

Requirement	Logoff R007
Description	A registered user shall be able to logoff their account.
Actors	Registered users
Basic Steps	<ol> <li>If the user is currently logged in, they shall be able to click on the "Logoff" button at the top of the current page.</li> <li>If the user clicks on the "Logoff" button, the system shall log off the user's account and display the system's landing page.</li> </ol>

# 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	Registered users		
Basic Steps	<ol> <li>If the system is displaying the user's profile, the user shall be able to on the "Submit Recipe" button.</li> <li>If the user clicks on the "Submit Recipe" button, the system shall disp the "Recipe Submission" form.</li> <li>The user shall be able to enter the recipe's information into the form.</li> <li>Once all of the fields on the form are complete, the user shall be able click on the "Submit" button.</li> <li>If the user clicks on the "Submit" button, the system shall add their reto the recipe database.</li> </ol>	olay	

# 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 system shall display the user's username and a list of recipes they have submit the recipe database.	
Actors	Registered users	
Basic Steps	<ol> <li>If the user is currently logged on, they shall be able to click on the "U Profile" button at the top of the current page.</li> <li>If the user clicks on the "User Profile" button, the system shall displa user's profile page.</li> </ol>	

# 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	Registered users					
Basic Steps	<ol> <li>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.</li> <li>If the user clicks on the "Rate Recipe" button, the system shall display a "Rate Recipe" field.</li> <li>The user shall be prompted to select their rating on a scale from 1 to 5.</li> <li>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.</li> <li>After a user has rated a recipe, the system shall check if the recipe qualifies to be a trusted recipe (see Mark Trusted Recipe).</li> <li>If the user has already rated the recipe, the system shall display an error.</li> <li>If the user attempts to rate a recipe they submitted to the database, the system shall display an error.</li> </ol>					

## 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	Registered users
Basic Steps	<ol> <li>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.</li> <li>The user shall be prompted to enter text into the "Add Comment" field.</li> <li>If the user has entered text into the field, the user shall be able to click on the "Comment" button.</li> <li>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.</li> </ol>

## 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	• None				
Basic Steps	1. After a user has rated a recipe and the recipe was submitted by a the system shall determine whether the recipe can be marked as 2. If the recipe's rating passes the predefined algorithm, the system 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	Т	
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	Т	
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	Т007	Т	
R007	Registered users shall be able to	Derived requirement	User Authentication	T008	Т	

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

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