

Recip-Ease:  
Finally, A Simple Way to Enter, Store and Share Recipes

Capstone Introduction Plan  
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Maryville University, March 2025

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## Introduction

The internet is certainly chock full of cooking and recipe websites and apps, mostly geared towards individuals looking for something to make for dinner. There are a few available such as CreateMyCookbook.com, ReciMe (app), and FamilyCookbookProject.com that allow you to enter and save your own recipes. Some of these, the ingredients and measurements are entered using regular text entry methods, while some allow you to scan recipe cards and use optical character recognition (OCR) to read in the recipes. My cousin Lalita took it upon herself a year or so ago to take all of her mother's, grandmother's, aunts', and some of her personal favorite recipes, and make a family cookbook. Unfortunately, many of the originals were handwritten and unable to be scanned, and had to be entered manually. At that point, the project turned into a real labor of love, because entering all measurements and ingredients via keyboard was slow and tedious, especially since there was a lot of repetition. All cakes have basically the same 5 or 6 ingredients, but most sites require you to retype each one for each recipe. Fractions were also a problem without using special keys or performing ASCII gymnastics while typing the recipes.

After careful consideration of these problems, two questions came to mind:

- What if you told the website what type of recipe you were creating, and using it's database of recipes, offered up the most common ingredients in order and you could just click or tap it to select it?
- For entering measurements, what if you had a button set with pre-determined measurements like "Cup", "Half Cup", etc., and you just clicked or tapped the measurements you needed and clicked enter.

The primary functionality of the website is described in more detail in the MVP section below, the idea being the ability to simply click most ingredients and quickly enter measurements, especially fractional amounts, would greatly increase the productivity of entering or creating recipes over conventional recipe websites. Additionally, features would be included for users to save recipes to their own site-managed cookbooks so those ingredients could be utilized for other users' recipe creation, as well as those recipes shared with others or on social media. Later functionality could include creation of cookbooks for distribution among family members as well.

## MVP Functional Requirements

### Browse and Search Recipes

The system will allow users to browse and search not only their recipes, but the recipes of other users who have marked their recipes as available for public use. The search system will allow users to search for ingredients as well as keywords and words in the accompanying descriptions of the recipes. The search results will be displayed as a list of links so the users can simply click a recipe title to review that recipe.

## Classify Recipes

One of the key functions of Recip-Ease is the ability to classify recipes by dish and recipe type. It will ask the user to determine meal type (Dessert, Drinks, Main Courses, Salads, etc.) then request further classification (Cakes, Cookies, Puddings, Pies, etc.) to narrow the list of common ingredients for recipe entry. Forcing classification of all recipes will be the foundation of the websites “machine learning” for which ingredients it offers in what order, easing recipe entry for the users.

## Collect and Prioritize Ingredients

When users select to enter a recipe and have answered the classification questions, the system will provide the user with a list of ingredients taken from the database of recipes and provide the list with the most commonly used ingredients for that recipe Category and Type listed first. This will be determined from a field in the database record for that recipe. As the user selects and adds ingredients to their recipes, the record for that ingredient will be incremented, increasing it’s ranking for selection for subsequent “common ingredient” searches for future recipes. As an example, if a user lives in Georgia, and has a lot of recipes using peaches, when starting out, the likelihood of “peaches” appearing on the “common ingredient” list is low. As the user adds “peaches” manually several times to their recipes, the system will rank it higher on the “common ingredient” scale, and will present it on the list.

Another example may be a user who can not use salt. Being a common ingredient in most baked and cooked foods, it will be frequently presented for about all recipes. As the user enters recipes without it, other ingredients’ ranking will begin to overtake salt, and it will eventually fall off the “common ingredients” list for that recipe Category and Type.

## Enter and Save Recipes

The ingredients will be in a scrollable list with each ingredient available to be clicked to be selected. The website will have a set of buttons in a button grid (see Appendix A for example) and allow users to enter measurements by simple clicks. Additional buttons will be provided for handling special entries like split ingredients (“Two cups plus 2 tablespoons Sugar, divided”). There will be buttons provided to delete and edit ingredients and measures after they are entered.

As an example of functionality, the user selects Category: Desserts and Type: Cake from the dropdown. The database creates a list of common ingredients, ranked by “popularity” field for each ingredient. Assume the recipe calls for 2-1/2 cups flour. As “flour” is likely the most common ingredient in cakes, it should be the top ingredient. The user clicks that line in the list, then clicks the “Cup” button twice, and the “1/2 Cup” button once, and hits “OK”. This saves this ingredient and quantity to the recipe window below. The user then clicks the next ingredient and its quantity buttons. This should make for rapid and accurate recipe entry. As each ingredient is added it’s “popularity” field is incremented for later prioritization for later recipes.

## **Share Recipes**

The website will have the ability allowing the users to share their recipes, through email, HTTP link, or on social media. Appropriate buttons will be provided for each, accessing appropriate APIs available for the social media sites to permit easy sharing. Users will have the ability to share individual recipes or “cookbooks” of multiple recipes. Cookbooks shall be arranged by recipe classification for easy reading and reference.

## **Non-Functional requirements**

### **Availability**

Like most systems the website must be available as much as possible and within expected and written standards. In order to ensure this, the site shall be hosted on a cloud-based website and database provider, such as Amazon Web Services or Microsoft Azure. The databases should be hosted on either of these as well, though starting out, MongoDB Atlas cloud services will suffice.

### **Scalability**

The website and its associated databases will continually grow rapidly with each new user and new recipes entered. As the server and the databases will be hosted in the cloud, scalability should never be an issue. The programming for the ingredient selection and prioritization for the recipe-building function of the website shall be constantly reviewed, refactored and optimized, as well as the indexing for the recipe databases, to ensure optimum user experiences.

### **Reliability**

Uptime and reliability will be maintained through careful testing and implementation of updates, and other changes to the website, databases and associated software. Being available for users either seeking recipes for upcoming meals, or, more importantly, involved in creating a dish from a recipe provided and displayed by the website, is a priority. Website and database design, as well as cloud service selection and monitoring will ensure the website is fault-tolerant and responsive.

### **Usability**


Upgrades and improvements to the website will be well planned to ensure the product presented to users does not become cumbersome and unwieldy. There are potentially dozens of possible improvements possible on the main design, but none created once users have registered and begun to create, save, and share recipes should in any way reduce user enjoyment of the website or its overall functionality. Proper help screens and tooltip hints will be employed whenever possible to ensure new users understand how to implement and utilize the site’s tools to their fullest.

## **Maintainability**

The system will be easy to maintain and update by ensuring that best practices are employed through versioning software, properly designed testing procedures, and utilization of sandbox systems to develop and test new versions of the website, the code-behind, and the databases. Code bases will be restricted to HTML, LESS/CSS, Javascript, and C#. The database will be MongoDB. By ensuring code bases are limited in scope as far as platforms are concerned, it will remain simple to understand and document.

## Appendix A – Layout Examples

Recip-Ease Index Page:



# Recip-Ease

Finally... an easy way to enter, save, recall and share your favorite recipes!

Home

Search

Enter

Share

Login/Sign Up

### Blog Highlights

**Delicious Recipes**  
Discover new flavors with our weekly picks. Simple and tasty!

[Read more...](#)

**Healthy Eating**  
Learn how to eat healthy while enjoying your meals.

[Read more...](#)


**Kitchen Tips**  
Get the best out of your kitchen with these useful tips.

[Read more...](#)

Food Photo Slide Show with Links  
Will be added programatically on full site

Ad Display


### Featured Recipes



**Recipe Title 1**

This is a short description of the recipe. Delicious and easy to make!


[Read More](#)



**Recipe Title 2**

This is a short description of the recipe. Perfect for any dinner occasion!


[Read More](#)



**Recipe Title 2**

This is a short description of the recipe. Perfect for any dinner occasion!

[Read More](#)




**Recipe Title 2**

This is a short description of the recipe. Perfect for any dinner occasion!

[Read More](#)

## Recipe Entry Page:



[Home](#)[Search](#)[Enter](#)[Share](#)[Login/Sign Up](#)

Cup1/2 Cup1/4 Cup

1/3 CupTBSP1/2 TBSP

TSP1/2 TSPOz.

Gms.QtyOther

Quantity:

☐ Divided

Submit Ingredient

Enter Instructions By Step

Enter instructions for this step

Submit Step

Undo Last Submission

# Recip-Ease

Finally... an easy way to enter, save, recall and share your favorite recipes!

Recipe Name:

Food Category:  

Choose a category

Dish Type:

Save Recipe Information

Ingredient List

Will be added programatically to populate from MongoDB


Entered Ingredients

Recipe Ingredients and Steps

Functionality will be added programatically on full website

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[Home](#)[Search](#)[Enter](#)[Share](#)[Login/Sign Up](#)

# Recip-Ease

Finally... an easy way to enter, save, recall and share your favorite recipes!

Your Recipes - Share To Socials or Email a Friend!

Bejing Beef - Panda Copycat	Share to Socials	Email a Friend
Penne with Vodka Sauce	Share to Socials	Email a Friend
Arrabiata (Angry) Sauce	Share to Socials	Email a Friend
Mom's Ruebens	Share to Socials	Email a Friend
Crock Pot BBQ Beef	Share to Socials	Email a Friend
Steak Diane - Sorta	Share to Socials	Email a Friend
Deb's Ricotta Cookies	Share to Socials	Email a Friend

Ad Display

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## Appendix B – User Personas

### Kimberly Sexton – Family Cook

#### Background

- Project Manager
- Working on PPP
- Married with two children
- Husband is stay-at-home parent

#### Demographics

- Female, 38 years old
- Family income \$120,000
- Small town suburb of Orlando

#### Identifier/Needs

- Family has diverse tastes
- Husband doesn't cook, so meal planning and weekly meal prep are essential
- Like exploring a variety of cuisines and meals.



### Joseph Ritten– Culinary Explorer

#### Background

- Sous Chef at local 4+ star restaurant
- Food hobbyist at home
- Building experience
- Single with many hungry friends

#### Demographics

- Male, 26 years old
- Individual income \$75,000
- Lives in Downtown Orlando

#### Identifier/Needs

- Likes to explore a variety of cuisines
- Creates own dishes/desserts and needs facility to document, save and search for them.
- Desires to have the ability to share with friends to critique and try his recipes



# Tyler Morgan– Health Enthusiast and Content Creator

## Background

- Certified nutritionist
- Creates healthy food options and produces web content demonstrating cooking same
- Partner manages successful whole foods market

## Demographics

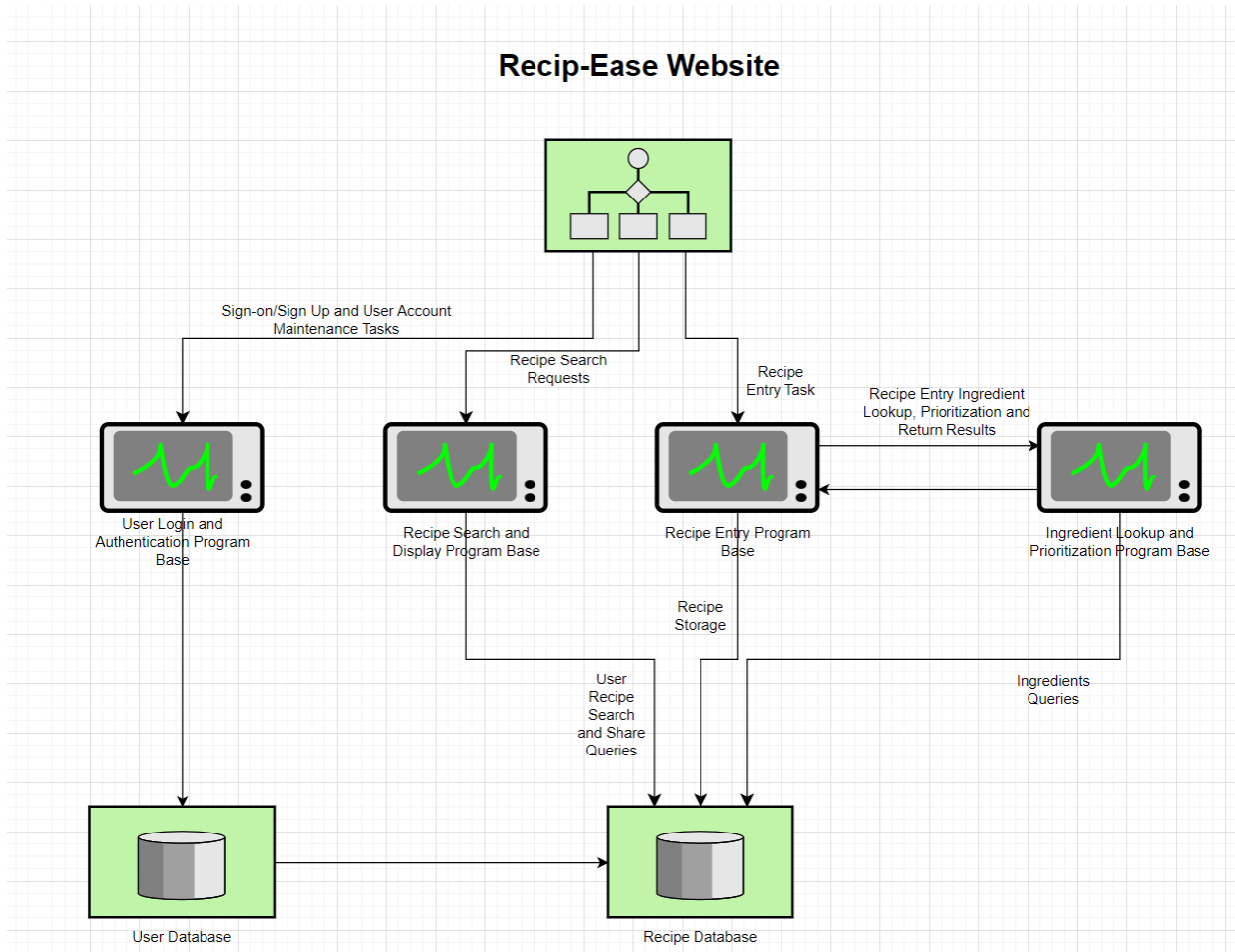
- Male, 33 years old
- Individual income varies: \$30,000 - \$85,000
- Lives outside Rochester, NY

## Identifier/Needs

- Identifies popular dishes and re-creates using healthier and fresher ingredients.
- Needs to find a variety of recipes and easily create and store his own versions for his web content.
- Must be able to provide current list of recipes for his web users and viewers.



## Appendix C – Website Architectural Diagram



## References

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