*The Recipe Nutrition Project:*

Figures for Your Figure

# Overview

This document outlines the requirements for a web-application that calculates the nutritional values for a recipe. The outline includes the product vision, user story, use-case scenario, functional and nonfunctional requirements, performance requirements, technologies needed, and Documentation. Following the requirements will be the schedule

# Product Vision

## The Problem

There are many websites and applications available for recipes. A few of them even calculate the nutritional values. But none of them give me *total control* with the ability to see why a recipe has a high fat count so I can substitute that ingredient or reduce it so it fits within my diet plan.

With total control, I would be able to tweak recipe ingredients to fit my diets particular needs such as watching calories for myself or limiting sugar and carbohydrates for my diabetic family members. I would be able to see if substituting apple sauce for oil would make a big or little difference in the final nutritional values. But there currently is not an all-in-one application that solves these problems.

The current resources fall short in the following areas:

* They are not easy to use. Once you enter an ingredient, you cannot update the amount,
* They do not show you the values for each ingredient,
* Visually they are not intuitive,
* You cannot edit an ingredients’ values,
* And most importantly, the pop-up ads are annoying.

## The Purpose

The purpose of this application is to make it intuitive for home chefs or professional chefs. As soon as you look at it, you see what you need to do and what information goes where. It will need to list out all the ingredients in a table and have a way to edit any of the ingredients.

The resulting Nutrition Facts label should be viewable at any moment during the process so you can go back to the table to make changes to the ingredient list if you want.

# User Story

## Summary

Need an app that calculates the nutrition values for my personal recipes. It should have the ability to save the ingredient data to a table/relation database for future use/update. Optionally, I would like to have ingredients saved to a separate table/relation in the database so I don’t have to re-type in values for frequently used ingredients. Finally, I would like to print the nutrition values and table of ingredients.

## Details from User Perspective

I want a place to save my recipes and that calculates the nutrition values. I would like to be able enter the recipe name and save it. I want the app to have two nutrition labels that have the look and feel as current food nutrition labels. The first one is for the user to input values for each ingredient, the second one is for the live running totals of each of the nutrition values entered from the ingredient. The app should display a chart to hold each ingredient and its values as it is added.

The first label (it could be a pop-up window) is for me to input the ingredient name and each of the nutrition values listed on the ingredient labels. If I don’t know or don’t want to calculate the value of a particular nutrient, I want the app to ignore that value and/or place a “0” as a place holder. (Optionally, if an ingredient that has been used before, would like to be able to access it and have it automatically populate the nutrient fields.) It will continue to accept data until I indicate that all ingredients for the recipe have been entered. After I enter all the values, the table/chart will show the list of all ingredients I entered with all the nutrition values in columns beside them. This list should be editable for deleting or updating ingredient name and/or nutrient value.

The second label will show all the totals. It will display a running total of all the nutrition values entered from the ingredients (the first label). It should have a place to enter the total weight of the finished completed and/or cooked dish in ounces, pounds, or grams. It should have a servings area where the user can input the number of servings in the recipe. The serving size can then be calculated so I can determine nutrient values per serving and measure out the appropriate weight.

Finally, I would like to print the recipe ingredients chart and the nutrition label. The label should look like one you see on a store box food item.

## User Requirements

An app that calculates the nutrition values for personal recipes.

* Need #1: Place to enter recipe name
* Need #2: Ingredient Label for user input
  + has look and feel of nutrition labels
  + displays each nutrient name with input area for user to enter values
  + have the option to include a value or “0” if none specified
  + button to indicate done with that ingredient
  + button to indicate done with all ingredients
  + display ingredient in chart
  + OPTION A: search option to see if ingredient is already in database/ then load it if it is
* Need #3: Chart for reviewing each ingredient and its’ value
  + display a title over the chart: “Ingredients for <recipe name>”
  + display a column heading over each of the nutrient values
  + have an option or a button to delete ingredient
  + have an option or a button to edit ingredient
    - re-opens Ingredient Label with the current ingredient nutrition values
    - button to save updated information
    - button to cancel and keep ingredient as it was
    - chart should update the ingredient list if there were changes
  + the Nutrition Totals Label should have a running calculation of the values entered after each ingredient is added
* Need #4: Nutrition Totals Label for displaying total calculations for all ingredients
  + Have look and feel of nutrition label
  + Display each nutrient name and the running total value
  + Have a place the user can input the total weight of the finished/cooked food dish
  + Have a place the user can input the number of servings
    - The user should be able to change the number of servings
  + Have a place to display the weight per serving
* Need #5: Print chart
  + Print a formatted Nutrition Totals Label and the ingredient’s chart
* Optional Need A: table/chart of all ingredients or recipes ever entered
  + A window that shows the list of ingredients
  + A way to edit or delete an ingredient or recipe
  + A way to search database of ingredients

# Use-Case Scenarios

## Use Case – Home Chef

### Use Triggers

* Need to track specific nutrient values in recipes to satisfy dietary needs
* Need to supply nutrient values to a person with a diet restriction
* Need to manipulate recipes to satisfy dietary needs
* Need to calculate the conversion rate of weight and volume for the ingredient amounts

### Pre-Conditions

* Must have a database

### Post-Conditions

* Recipes must be able to save, access, edit, delete, and print recipe ingredients chart/table

### Normal Flow for Chef Creating New Recipe Nutrition Label

1. Select from file menu, “New Recipe”
   1. Pop-up window opens
   2. Enter recipe name next to the field, “Recipe Name”
   3. Click “OK” to accept
   4. Click “Cancel” to exit window
2. Click on “Add Ingredient”
   1. Pop-up window opens
   2. Enter Ingredient name next to the field, “Ingredient”
      1. OPTIONAL: Search for ingredient in database.
      2. Select ingredient, it will then populate all the fields
         1. Edit fields if needed, skip to 2e.
   3. Enter amount of ingredient specified by the recipe
      1. Selects measurement type: oz., grams, volume (cups, bunch, etc.)
      2. Software calculates/converts measurements to grams
   4. Enter amount of each nutrition value next to its’ field label exactly as it appears on the label
   5. Select “Save Ingredient” to recipe
      1. OPTIONAL: Pop-up Window, if selected ingredient from search in database
         1. If ingredient was edited, ask to “Replace/update” or “Create New”
            1. If “Create New”, verify ingredient has different name
   6. Pop-up window closes, file automatically saves ingredient data
   7. Repeat steps 2a – 2f until all ingredients are entered
3. Chef decides one of the ingredient amounts is wrong or wants to make an adjustment
   1. Selects “Edit” button next to the ingredient in the chart/table that requires editing
   2. Pop-up Window opens with ingredient label
   3. All fields are populated with current values
   4. Makes the needed edits
   5. Repeat steps 2e – 2f
4. Chef is ready to view the Nutrition Totals Label
   1. Calculating the values by number of servings alone
      1. The Chef enters total number of servings (default is 1)
      2. The values will be calculated based on the number of servings.
      3. Chef changes the number of servings
      4. The nutrition values change based on revised number of servings
   2. Calculating the values by both number of servings and weight
      1. The Chef enters total number of servings
      2. After cooking, the Chef can enter the total weight for the food minus the weight of the dish holding it
      3. The label displays the total weight per serving along with nutrition values
      4. Chef changes the number of servings
      5. Serving weight and nutrition values change based on revised number of servings
5. Chef saves recipe
   1. If there is already a recipe with that name, error message prompts for new name
   2. Has the option to save and overwrite, save with new name, or cancel to return to recipe
6. Chef prints recipe chart and Nutrition Label
   1. Nutrition label prints with the look and feel of a nutrition label
   2. On the same page is a table/chart of ingredients are formatted

# Functional Requirements

## Expected Input

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Input area | Source | Accuracy | Value Range | Frequency |
| Recipe Name | User | N/A | 3 – 20 chars | 1 |
| Ingredient | User | N/A | 3 - 20 chars | *f* > 0 & *f* < 30 |
| Amount | User | .01 | 1 – 1,000\* | *f* = ingredients |
| Calories | User/Default | .01 | 1 – 1,000 | *f* = ingredients |
| Fat | User/Default | .01 | .01 – 1,000\* | *f* = ingredients |
| Cholesterol | User/Default | .01 | 1 – 1,000\*\* | *f* = ingredients |
| Sodium | User/Default | .01 | 1 – 1,000\*\* | *f* = ingredients |
| Carbohydrates | User/Default | .01 | 1 – 1,000\* | *f* = ingredients |
| Fiber | User/Default | .01 | 1 – 1,000\* | *f* = ingredients |
| Protein | User/Default | .01 | 1 – 1,000\* | *f* = ingredients |
| Number of Servings | User/Default | 1 | 1 – 50 | 1 |
| Weight | User | .01 | 1 – 50,000\* | 1 |

\*measured in grams, \*\*measured in milligrams

## Expected Output

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Output area | Destination | Accuracy | Value Range | Frequency |
| Recipe Name | Database/Screen | N/A | 3 – 20 chars | 1 |
| Ingredient | Database/Screen | N/A | 3 - 20 chars | *f* > 0 & *f* < 30 |
| Amount | Database/Screen | .01 | N/A | *f* = ingredients |
| Calories | Database/Screen | .01 | 1 – 30,000\* | *f* = ingredients |
| Fat | Database/Screen | .01 | .01 – 30,000\*\* | *f* = ingredients |
| Cholesterol | Database/Screen | .01 | 1 – 60,000\*\* | *f* = ingredients |
| Sodium | Database/Screen | .01 | 1 – 60,000\*\* | *f* = ingredients |
| Carbohydrates | Database/Screen | .01 | 1 – 30,000\*\* | *f* = ingredients |
| Fiber | Database/Screen | .01 | 1 – 30,000\*\* | *f* = ingredients |
| Protein | Database/Screen | .01 | 1 – 30,000\*\* | *f* = ingredients |
| Number of Servings | Database/Screen | 1 | 1 – 50\* | 1 |
| Weight | Database/Screen | .01 | 1 – 500,000\*\* | 1 |

\*integer, \*\*double

## External Hardware Requirements

* Hardware to access web applications
  + Computer/Tablet with a browser and access to the internet
* Web Application is supported on the following browser versions and later
  + Google Chrome 5.0
  + Firefox 4.0
  + Safari 5.0
  + Explorer 9.0

# Performance Requirements

## Level of Security

Personal information will not be transferred to database so the level of security is low.

## A Successful Web Application

* A successful web application will:
  + Save the recipe and its’ ingredients to the database,
  + Save the ingredients to another table in the database,
  + Be intuitive to use without instructions,
  + Retrieve a saved recipe/ingredient from the database accurately and in the proper location,
  + Allow the user to load an ingredient or recipe and make changes to it with the option to save the revisions,
  + Calculate the values accurately and displayed them correctly,
  + Print the recipe and nutrition label with accurate values, and
  + Print the nutrition label in the same format as a Nutrition Facts label.

# Technologies

## Platform

* Web application

## Language

* Java SE/EE, Java Servlets and JSP
* HTML/CSS3
* Using the Model View Controller pattern

## Integrated Develop Environment

* NetBeans

## Limitations/Risks Anticipated

* In order to save or load a recipe and its’ ingredients, the user needs to be connected to the Server/Database through the internet.

# Schedule

|  |  |  |
| --- | --- | --- |
| Component | Description | Delivery Date |
| COMP-01 | Proposal/Requirements Document | Sept. 8, 2017 |
| COMP-02 | Test Matrix | Sept. 8, 2017 |
| COMP-03 | Preliminary Design Document | Sept. 29, 2017 |
| COMP-04 | Detailed Design | Oct. 13, 2017 |
| COMP-05 | Unit Test Suite | Oct. 27, 2017 |
| COMP-06 | Implementation | Nov. 20, 2017 |
| COMP-07 | Final Project Demo and Presentation | Nov. 27, 2017 |
| COMP-08 | Case Study | Dec. 3, 2017 |

# Documentation

## Code Documentation

* The Program will be document completely so that other developers can work on it without training.

## User Training

* Training should not be needed. The web application will be intuitive. It may have a link to another web page with step by step screenshots of how to enter recipes, retrieve, and save them from the server/database.