Ryan Hilton
SWDV 691 – 1W 18
October 2018

Flexible Cookbook

Section 1 - Description

There are many cooking apps available. And a variety of features are often included, but they fail to meet a specific need which is shared by many users. That need is the ability to covert the units of measure, right there in the cookbook itself, without having to open another app or access a separate device. That need also includes the ability to save the user's preferences regarding units of measure and remain a useful tool for the average person trying to cook.

Many different types of people could find this Flexible Cookbook app useful for everyday cooking, but to better illustrate its usage please consider the following two personas:

Annie the Aussie is a mother of 4 from Australia who lives in the U.S. as a permanent resident. She tries to find time to make dinner for her children and her husband who works until 6:00 pm on most days. Annie has some college education, and thinks of herself as a decent cook. But, having brought her recipes from Australia, she has found it hard to use them because they usually call for milliliters and grams, instead of ounces, tablespoons or cups. Now that she has her Flexible Cookbook app, she can save all of her recipes in her phone, and it will tell her what the right measurements are in a form that matches her current cooking equipment. She pulls up her recipe, sees that it calls for butter, slides the dial to the right, and it changes from 120 grams to 8 ½ tablespoons. Then she sees the next ingredient, which says 185 ml of water. With another swipe, it becomes 6 oz. of water. The app saves her recipe in that state so that next time it will already show the ingredients in that form. It even tells her to use 400° F, instead of 205° C.

Tom the Teen is Annie's son. He attends high school, plays video games, and admits that he can be a bit lazy. Sometimes he likes to help his mother cook, more for the chance to decide what's for dinner than to make her life easier. Usually he would pick a recipe and follow it really well for the first few ingredients. But as he would proceed, he would fail to find the specific measuring cup he needed, put down the cookbook, and wing it the rest of the way. Sometimes his brothers and sister would complain that it tastes funny, and his father would ask, "Uh, son, how much salt did you put in this?" But now that he has his Flexible Cookbook app, things are different. He opens it with one tap and immediately sees the last thing he was looking at, which happens to be the same sweet snack he intends to make tonight. He measures out 1 cup of chocolate chips – done. Then he can't find the ½ cup for the peanut butter, but he's got this covered by using the ¼ cup two times. After a quick pat on his own back he suddenly realizes that he needs that ¼ cup to

measure the next ingredient. Unwilling to wash out the measuring cup, this is the point where he would normally start winging it. But not this time. He sees a clean tablespoon sitting there. With a quick swipe of his finger, that ¼ cup becomes 4 tablespoons. Now Tom can keep following the recipe, even if he does intend to eat the whole batch himself.

Section 2 – Minimum Viable Product (MVP)

Flexible Cookbook is intended to be a hybrid app, for use on any modern mobile device. Some desktop functionality may also be designed afterword.

2.1 – Architectural Overview

The architecture will be three levels of abstraction – the presentation layer, the service layer, and the data layer.

2.1.1 – Presentation Layer

The presentation layer includes the user interface, and will be centered on the user experience. This layer will show pictures, if available, and have very intuitive functionality. The buttons will look like buttons, the dials will look like dials, and the text will be large enough to read easily. The color scheme will be bright and inviting.

2.1.2 – Service Layer

The service layer will consist of the application logic, which communicates between the user interface and the database. This is where the conversions are performed. This layer also has access to functions on the mobile device, like the camera for taking pictures of the food, and perhaps the speakers for a kitchen timer function.

2.1.3 – Data Layer

The database may eventually need to be scaled to a more robust architecture, but for the MVP it will suffice to have a simple data structure consisting of several tables. These tables may be sufficiently rendered in the form of dictionaries with the recipe attributes as the keys. Two of the attributes will be ingredients and quantities. These will each have an array for their value. These two arrays will represent each ingredient, with its quantity listed in the corresponding index of the other array. (See section 2.3 for a visualization).

2.2 – Features

The minimal set of features will include at least the following: a) the ability to input recipes for later retrieval; b) a wide range of measurement units to choose from; c) the ability to convert those units when wanted; and d) a functioning menu interface for navigation.

2.2.1 – Menu

The menu should at least point to two pages – one with an input form, and another with a recipe display. The input page must have the ability to specify units of measure from a given list of terms. And the display page must have dynamic functionality, with dials or sliders to change the units of measure.

2.2.2 – Conversion tool

The dynamic conversion tool should at least include the ability to convert to and from the following units of measure: Gallons, quarts, pints, cups, ounces, liters, milliliters, tablespoons, teaspoons, kilograms, and grams.

2.2.3 – Persistence

The state in which the user leaves the interface should be the state in which he or she next encounters it. The recipes must also persist in memory for later use.

2.3 – Database

The following illustration shows the structure of the database, which, at the MVP level, can be accomplished with a dictionary data structure for each table.