WHAT'S IN MY KITCHEN?

A FOOD MANAGEMENT SYSTEM

Prepared for

Dr. Gove Allen & TAs, IS 520

Prepared by

Braden Casperson

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EXECUTIVE SUMMARY

PROBLEM AND PURPOSE

I often forget which food I have in my refrigerator and pantry. I sometimes will forget for long enough that some foods will expire and spoil. Other times, I will run out of something and forget about it. Then I return home, only to discover that I need that one item that I ran out of a couple of weeks ago and had since forgotten about it. This problem extends to food storage. As a student, I don't have much food storage. However, my parents do have a food storage and while I was growing up I was able to see the pain point of not remembering everything that is in food storage, or if it may expire soon. What's In My Kitchen will track all food items, including their quantity and expiration date, so that food is not wasted, and shopping trips are efficient. There is another feature included within this program that will allow the management of recipes. I can create a recipe, complete with the instructions and the foods required. The foods required can be selected from a list of foods that have been added to the Inventory spreadsheet database. Both the recipe and items lists can be printed out with the click of a button. This is a program that can eventually be ported to a mobile application, and it is targeted towards anyone with a kitchen with a stronger focus on stay-at-home moms.

IMPLEMENTATION

INVENTORY

The idea behind What's In My Kitchen is a simple one. I wanted it to look user-friendly and clean, and I wanted it to be quick and efficient. The finished product appears as follows:

What's In My Kitchen?

Today Is 4/14/2015

Name	Quantity	Unit of Quantity	Price per	Expiration Date	Days Until Expires
Skim Milk	1	gallon(s)	$2.49	4/5/2015	-9
Eggs	0	dozen	$1.49	4/12/2015	-2
Shredded Cheese	2	bag(s)	$3.00	4/14/2015	0
Mac and Cheese	10	box(es)	$0.89	11/8/2015	208
Bread	2	loaf(s)	$3.89	4/30/2015	16
Cap'n Crunch	2	box(es)	$2.50	6/15/2018	1158
Tortilla Chips	2	bag(s)	$2.00	6/8/2015	55
Refried Beans	4	can(s)	$0.89	5/18/2016	400
Chicken	4	lbs.	$10.00	4/18/2015	4

This is the main chart. I went with a few nice shades of blue for the title and header as well as an easy-to-read, modern font. There are some rows that appear to have some strange highlighting. There is a color guide to explain the row coloring:

Color Guide

(black)	You are out of this item!
(red)	This item is expired!
(yellow)	This item is about to run out or expire!
No fill	You have a good quantity and it's not about to expire :)

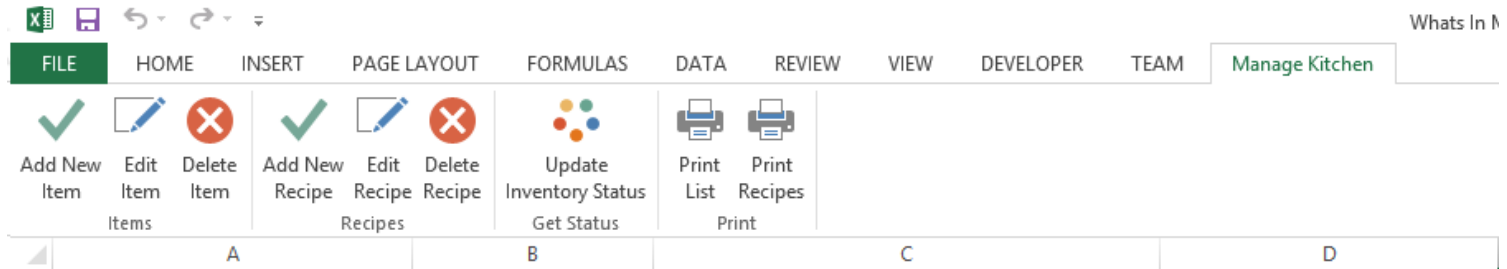I'll first talk about how I create the items. I have a simple form that lets the user enter the basic information for their item.

It contains a combo box for the units of measurement. I had a little bit of trouble figuring out what to do here. At first I had no unit of measurement. The user would only enter a number quantity. Then I decided that didn't work out well for such diverse items. I didn't want users to say, "I have 1 milk, 19 eggs, and 4 breads." Is it one one-gallon of milk? Or a half-gallon? And what does four breads mean? And then I thought that they could just type in the units with the quantity. But that can get messy quickly, so then I thought up the idea of just having a new column next to it just for the measurement unit, and then I created the combo box for all the most common measurements. It works nicely. Another reason that I had to do this is because I do a calculation with the quantity to determine when inventory is low. This is what causes some of the row color changes. It lets you know if you are almost out of an item by highlighting the row yellow, and if you are out of the item it turns black. If the user were able to simply enter whatever unit they wanted into the same cell as the quantity number, extracting just the number from the cell data for use in the equation would be more complicated than I wanted. So the extra column came into existence.

The user is able to edit the form with a form identical to the form for adding a new item. The Add New Item and Edit Item buttons can be accessed from the custom ribbon. All other features of the program are available from this ribbon as well. We'll cover all of them by the end.

Here is the edit form:

To make sure the date is inputted correctly, I put a guide in parentheses for the correct format of date entry. I was not able to figure a date picker out, since I could not find any built in date pickers. Typing it in serves my purposes fine though.

The other calculations that are performed are for expired items. As the color guide showed earlier, a yellow row can mean two things: 1) inventory is low, or 2) the item is nearing its expiration date. I calculate that by taking the expiration date they entered from the cell. Then I subtract the date from the expiration date. If the expiration date is less than five days away from the current date, the row highlights yellow. If the item is beyond its expiration date, the row will turn red. I display the number of days left until it is expired (or that it has been expired, as negative) in the last column. This helps the user know that there may be some things they should buy at their next store visit or use in their next meal, because in a week or two the item might expire.

As the ribbon image above showed, there is a delete item button. The user clicks on the row they want to delete and click the button. I opt for this rather than just highlighting the data and deleting it, because this leaves the empty row there still and if it was colored, then it will stay like that. By pressing delete, they delete the entire row, removing everything.

There is also a button on the ribbon called Update Inventory Status. This button will go through all the items and determine which items, if any, are expired, out, or about to expire or run out. That way, the user can instantly get the latest information on their inventory whenever they need to.
The last aspect of the inventory that is in place is the price. I have this there so that when the user goes to update an item that they are restocking, they can see how much they paid previously for that item and determine whether they got a deal. This is helpful before they go shopping especially, since they can check if they are actually getting a good deal compared to the last time. The full inventory spreadsheet appears as follows:

What's In My Kitchen?						Color Guide	
Today Is 4/14/2015							
Name	Quantity	Unit of Quantity	Price per	Expiration Date	Days Until Expires		You are out of this item!
Skim Milk	1	gallon(s)	$2.49	4/5/2015	-9		This item is expired!
Eggs	0	dozen	$1.49	4/12/2015	-2		This item is about to run out or expire!
Shredded Cheese	2	bag(s)	$3.00	4/14/2015	0	No fill	You have a good quantity and it's not about to expire :)
Mac and Cheese	10	box(es)	$0.89	11/8/2015	208		
Bread	2	loaf(s)	$3.89	4/30/2015	16		
Cap'n Crunch	2	box(es)	$2.50	6/15/2018	1158		
Tortilla Chips	2	bag(s)	$2.00	6/8/2015	55		
Refried Beans	4	can(s)	$0.89	5/18/2016	400		
Chicken	4	lbs.	$10.00	4/18/2015	4		

RECIPES

The next aspect of this project is for recipe management, called What's In My Cookbook?. This simply allows the user to create recipes from items already in their system. Here is the main page:

		What's In My Cookbook?	
		Today Is 4/15/2015	
Name	Estimated Completion Time	Directions	Ingredients
Example Recipe	4 hrs	Boil Eat Clean	+Skim Milk +Shredded Cheese +Mac and Cheese
fight the hunger	9 days	Open Box Pour Cereal Pour Milk Fight the hunger	+Skim Milk +Cap'n Crunch
Toast	5 Mins	1 piece of bread Stick bread in toaster and let cook for 2 minutes. If not cooked to liking, stick in for another 30 seconds until perfect. Enjoy.	+Bread
Nachos	10 Mins	1 can refried beans 1/2 bag tortilla chips 1 cup shredded cheese Cook refried beans in microwave for 5 minutes. put beans on chips on a plate. Put cheese on top and heat for another minute.	+Skim Milk +Eggs +Shredded Cheese +Mac and Cheese +Bread +Cap'n Crunch +Tortilla Chips +Refried Beans +Chicken +sfadsf

All it shows is the name of the recipe, the estimated completion time, the directions, and the ingredients needed. The button to create a new recipe is up in the same ribbon. It pulls up this form:

New Recipe ✕

Name: |

Estimated Time:

Directions:

Available Ingredients:
Skim Milk
Eggs
Shredded Cheese
Mac and Cheese
Bread
Cap'n Crunch
Tortilla Chips
Refried Beans
Chicken

Save   Cancel

This allows them to enter the information. In the directions they can input each step on a new line by pressing enter within the box and that formatting is preserved in the spreadsheet when the recipe is saved. The list of ingredients only shows food items that are in the system. They can specify other foods in the directions, but as far as selecting ingredients, the list box is populated by the What's In My Kitchen table. To edit a recipe, the process is similar to editing an item. Here is what it looks like:

		Clean	+Mac and Cheese
fight the hunger	9 days	Open Box Pour Cereal Pour Milk Fight the hunger	
Toast	5 Mins	1 piece of bread Stick bread in toaster and let co minutes. If not cooked to liking, another 30 seconds until perfect Enjoy.	
Nachos	10 Mins	1 can refried beans 1/2 bag tortilla chips 1 cup shredded cheese Cook refried beans in microwave minutes. put beans on chips on a plate. Put cheese on top and heat for another minute.	

Edit Recipe

Name: Nachos

Estimated Time: 10 Mins

Directions:
1 can refried beans
1/2 bag tortilla chips
1 cup shredded cheese

Cook refried beans in microwave for 5 minutes.
put beans on chips on a plate.

Available Ingredients:
Skim Milk
Eggs
Shredded Cheese
Mac and Cheese
Bread
Cap'n Crunch
Tortilla Chips
Refried Beans
Chicken

Save   Cancel

It preselects the ingredients in the list box. This list box caused some troubles for me. I wanted each item to be shown on a new line in the spreadsheet table, which I did by concatenating a carriage return onto each item. However, getting the contents of the cell to be selected in the list box was difficult. For example, in the example above the value of the ingredients cell returns a string that looks like this: "Shredded Cheese Tortilla Chips Refried Beans". I was going to split the string up using a space as the delimiter, but that was splitting up "Shredded Cheese" into "Shredded" and "Cheese". The same thing occurred anywhere a space occurred. For this reason I decided to put in a plus sign before each item. This still looks good, but also serves well as a delimiter. When I did this, I was getting the right strings split up...almost. I would get "Shredded Cheese ". Do you see the problem? There is a space at the end of "Shredded Cheese". I tried to simply use the Right function to check if there was a space at the end, and if there was then I used the left to reassign the string to the length of string – 1, which would cut out the space. But, that wasn't working. This was a conundrum. I then discovered the trim function, which removes leading and trailing white space from strings. When I implemented this though, it wasn't affecting the string at all. I was very confused. I then inserted a hard-coded string with leading and trailing white space and ran it through the trim function. It worked! So then I realized that the trim function wasn't working on the original item string, because it wasn't white space. I then remembered I had inserted a carriage return (Chr(10)), and it just happens to look like white space when you see it in a string. Once I figured that out, selecting the appropriate list box items was a cinch. The user can deselect and select and it will update the table upon saving.

The final feature of my project is a print feature. This is a simple, yet effective feature that lets the user print either the list of items or the recipes. Clicking the appropriate button in the ribbon will automatically select the appropriate range and open up the print preview where they can print. This is useful if the user wants to have the recipes as a reference for when they are cooking, or if they want to have the item list with them

while they are shopping. This shopping list will show which items they need to get as well as how much they paid for an item the last time they bought it. This was fun to do, because it was another thing that I had not previously done with Excel.

DIFFICULTIES AND LEARNING

Throughout the implementation section above, I discussed some of the difficulties I encountered and how I solved them. These difficulties provided the most learning. I like using forms in a slightly different sense than I had before, especially with a new item form, rather than just editing. I enjoyed learning how to create a custom ribbon tab and put the appropriate buttons on it. This project really stretched me and it cause a lot of frustration at times, but I am proud of my work and am satisfied with the results.

OUTSIDE HELP

I did not really receive any outside help. I used the internet and textbook extensively, and I asked for my roommate's input occasionally. But the solution to my problem was solved by-and-large by myself.