

# IS520 Final Project Write-up

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## Executive Summary

Since becoming financially independent, I have tried various strategies for keeping track of my finances. So far, none of them have worked. Though each system had its benefits, certain features and capabilities were either lacking or unnecessary to me. I needed something that forced me to enter my expenses, helping me to take more accountability for what I am spending. I also wanted to be able to see how my spending habits changed over time.

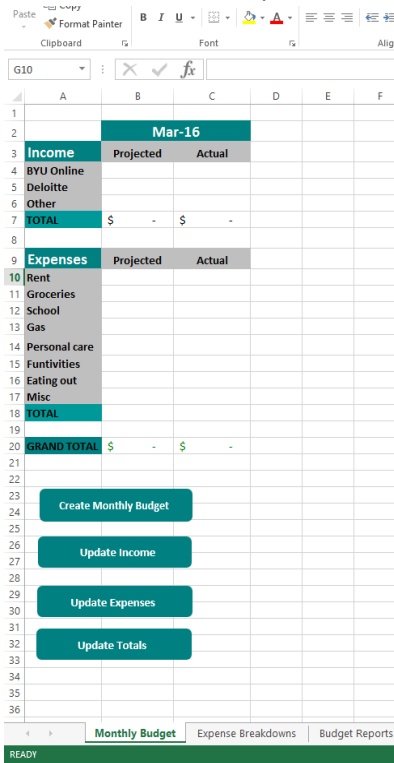
Given these and several other requirements, for this project I have created a personal budgeting system that will allow me to monitor my financial habits and see the areas in which I need to improve. The budgeting system I made allows me to budget for each month the money I plan to spend in certain areas, as well as track expenses made and create charts showing my spending trends and comparing them month to month.

## Implementation Documentation

To begin, I formatted an Excel workbook with several sheets, each to fit a different piece of my overall budgeting system. I will explain the set up and function of each of these sheets and its relation to my overall goal of the project.

### Monthly Budget

The first sheet in my workbook is the Monthly Budget sheet. Here I am able to set a budget for each month as well as keep track of my total expenses and income. When the user opens the workbook, they

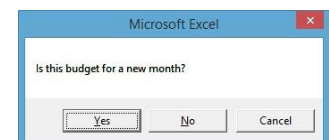


Mar-16			
	Projected	Actual	
<b>Income</b>			
BYU Online			
Deloitte			
Other			
<b>TOTAL</b>	\$ -	\$ -	
<b>Expenses</b>			
Rent			
Groceries			
School			
Gas			
Personal care			
Funtivities			
Eating out			
Misc			
<b>TOTAL</b>			
<b>GRAND TOTAL</b>	\$ -	\$ -	

Buttons: Create Monthly Budget, Update Income, Update Expenses, Update Totals

are presented with the template shown on the left. The template has two columns, one to keep track of the budgeted (projected) expenses and income, and the other to keep track of the actual values as the month progresses. The “Grand Total” at the bottom monitors whether or not the income is greater than the expenses.

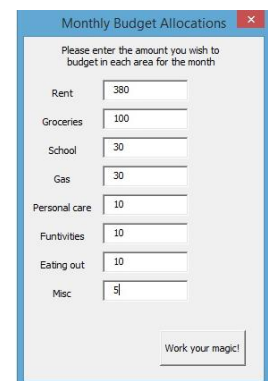
Each of the buttons on this page is assigned a macro that will perform a certain procedure. The first, “Create Monthly Budget” allows the user to create a budget for the month, estimating the amount to be spent in certain categories. I chose these categories based on my personal spending habits and needs. When the button is pressed, a Userform appears asking the user if the



Microsoft Excel

Is this budget for a new month?

Yes No Cancel



Monthly Budget Allocations

Please enter the amount you wish to budget in each area for the month

Rent 380

Groceries 100

School 30

Gas 30

Personal care 10

Funtivities 10

Eating out 10

Misc 5

Work your magic!

The second and third buttons, “Update Income” and “Update Expenses”, will run a macro that reads the values from the next sheet (Expense Breakdowns, which I will explain later) and inputs the total income and expenses recorded in the Expense Breakdowns sheet for the month. The last button, “Update Totals”, will subtract the total expenses from the total income and report the positive or negative balance. Positive balances print in green while negative print in red.

As mentioned previously, the Expense Breakdowns worksheet keeps track of all the expenses and income for a given month. The template is shown below, with the two columns for income and expenses including the details of each transaction.

		Apr-16		Mar-16	
Income	Projected	Actual	Projected	Actual	
BYU Online	\$ 900.00	\$ 923.00	\$ 900.00	\$ 931.00	
Deloitte	\$ -	\$ -	\$ -	\$ -	
Other	\$ -	\$ 32.00	\$ -	\$ 221.00	
TOTAL	\$ 900.00	\$ 955.00	\$ 900.00	\$ 1,152.00	
Expenses	Projected	Actual	Projected	Actual	
Rent	\$ 362.00	\$ 362.00	\$ 362.00	\$ 362.00	
Groceries	\$ 90.00	\$ 34.00	\$ 40.00	\$ 68.00	
School	\$ 20.00	\$ 15.00	\$ 20.00	\$ 10.00	
Gas	\$ 40.00	\$ -	\$ 40.00	\$ 38.00	
Personal care	\$ 20.00	\$ -	\$ 20.00	\$ -	
Funtivities	\$ 10.00	\$ -	\$ 10.00	\$ -	
Eating out	\$ 10.00	\$ 4.00	\$ 10.00	\$ 8.00	
Misc	\$ 10.00	\$ 64.00	\$ 10.00	\$ -	
TOTAL	\$ 562.00	\$ 479.00	\$ 512.00	\$ 486.00	
GRAND TOTAL	\$ 338.00	\$ 476.00	\$ 388.00	\$ 666.00	
Create Monthly Budget					
Update Income					
Update Expenses					
Update Totals					
Monthly Budget	Expense Breakdowns	Budget Reports			

[illegible]

Enter an Expense

Please enter an expense for this month.

Date 4 March

Location Smith's

Amount 9.87

Category

- Rent
- Groceries
- School
- Gas
- Personal care
- Fun/activities
- Eating out
- Misc

**New Income**

Please enter new income for this month.

Date paid

Amount

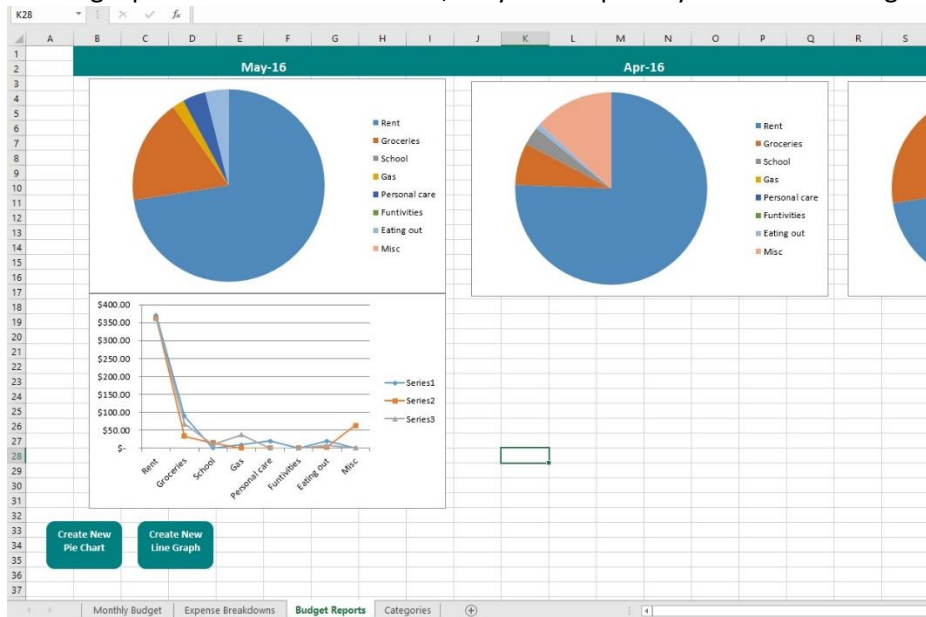
☐ Tithing Paid  
☒ Yes  
☐ No

☐ Deloitte  
☐ BYU Online  
☒ Other

## Budget Reports

In addition to keeping track of my detailed transaction history, I also wanted a way to easily see where I was spending my money and monitor any changes over time. The Budget Reports sheet includes two buttons that allow the user to create either pie chart or a line graph using the data from the Monthly Budget sheet.

The pie chart is used to show the portion of expenses spent in each category in a given month. By clicking the “Create New Pie Chart” button, the user will run a procedure that collects the current month’s data from the Monthly Budget sheet and creates a corresponding pie chart. If the user is creating a pie chart for a new month, they will respond ‘yes’ to the Message Box prompt and the



procedure will insert and format the appropriate number of columns to account for the new data while keeping the old for reference purposes.

This worksheet also has a button that will create a line graph to show spending trends across a three-month period. Because the line graph is most useful when comparing over time, when the button is

clicked, the user is asked if three months’ worth of data are available in the Monthly Budget sheet. If yes, the procedure will run to collect that data and create a line graph so the user can see the differences across each month in the different expense categories.

## Categories

The last sheet, Categories, is simply a list of expense categories that I used to fill the Combo box on the Userform. It can be updated as expense categories change.

## Discussion of Learning and of Difficulties Encountered

This project took me a total of 18 hours to complete. At times I was frustrated because I didn’t feel like what I was trying to accomplish was that difficult, but it was taking me a long time to do. First, I had trouble figuring out exactly what I wanted in my budgeting system and how I wanted to go about creating it. I would plan to do something one way, but then would think of something else to add and I would have to start over. At one point, I only had two income categories and I was really far into my code when I decided to add a third, so I had to go back and change all the cell references to accommodate for the change. I learned that you should have a clear picture of what you want to

accomplish before you go about creating it. If I had sat down and planned out my budget before starting to write the program, I could have saved time and frustration. However, I also learned that it is usually in the process of doing that we discover things that can be changed and improved. I had ideas of what I wanted to do, but I would often find better ways of doing them while I was working through the project.

Once I figured out exactly how I wanted my system to be, I had trouble with several small, but important, elements. In class, we learned all the basic skills I needed to work with Userforms, which was the bulk of my project, but I had to learn several new things in order to make my system run the way I wanted it to. For example, I was unfamiliar with how to format cells and use existing Excel formulas in cells through VBA. I found a website that gave the code for each of the NumberFormats in Excel, so I was able to format the cells through the code. Most of the formatting issues I was able to resolve using the internet. When creating the charts, I recorded a macro while I did it in Excel and used that to write the code I used for those procedures. I learned more formatting details than I knew before and I also feel like I now have a better understanding of how to use the functionalities of Excel along with VBA, rather than keeping the two separate.

The only thing that I was unable to do that I wanted to do was customize the ribbon to include my own tab and buttons. Doing that was one of the first things I looked into while doing this project, but after doing some research I decided that I should save it for the end because the process looked rather difficult. Once I had everything else figured out, I again tried to add my own ribbon and buttons but could not get it work. I even found some code written by an online Excel guru that I used, and it made the buttons appear but it would not connect to the macros in my workbook. The buttons I created in the workbook also stopped working when I added this code, so I deleted it and decided that my buttons would be good enough.

## **Assistance**

The only assistance that I received on this project was through the internet. As I mentioned above, I had a lot of formatting questions using VBA and I was able to find the answers to most of my questions using websites like [stackoverflow.com](https://stackoverflow.com) and other similar websites. Other than that, I was able to reason through my difficulties with Userforms and other things using the videos from class and past projects.