

## Family Budget

### Executive Summary

My wife and I have struggled over the years to develop and stick to a budget that works for us. The spreadsheet that I have created overtime seems to be much too complex and time consuming for us to maintain. I have also tried many other solutions (e.g. Mint.com) to try and streamline the process, but nothing seems to be comprehensive enough for our planning needs. We need a solution that has an easy-to-use interface and yet complex enough to keep track of all the unique details of our budget.

“Budget Dreamland” is the answer to this qualm. It is an easy-to-use budget program with a simple interface. Users can insert expenses and income, compare program data with online sources, run reports as well as other common tasks.

### Implementation Documentation

#### Feature: Welcome Form

##### ***What?***

An initial “Welcome” form appears with the most common tasks readily available.

##### ***Why?***

Often a person will opening budgeting software with the intent of inserting a quick entry without further need of analysis. This feature allows the user to first focus on these highly used entry insertion tasks.

##### ***How used?***



The form automatically appears when a user opens the budget file. The user can either select “Insert Expense” or “Insert Income” in order to go directly to those forms. In addition, the user to access other features of the budget program by selecting “Other.”

## Feature: Insert Expense

### ***What?***

Users are able to insert expenses including details such as what, where, amount, date, category, how, and whether or not to include a copy of the receipt.


### ***Why?***


Inserting an expense is a basic feature of any budget. In addition, the receipt copying feature allows the user to gain ready access to important documentation as needed.


### ***How used?***


FILE


BUDGET


Insert Expense


Insert Income


Import Data


Compare Data

Misc Options

View Report

Print Report

PDF Report

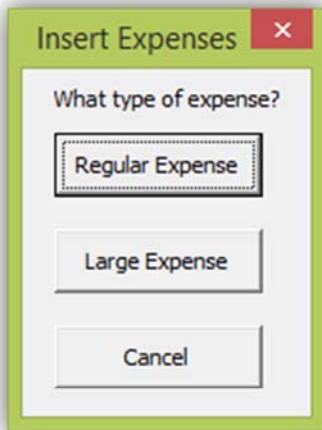
Text Report

Manage Data

View Reports

	A	B	C	D	E
1	What	Where	Amount	Date	Category
2	Smoked Turkey Leg	Costco	\$4.89	3-Dec	Food / Home
3	Quesidilla	Sprouts	\$2.99	4-Dec	Eating Out
4	Gas	Chevron	\$60.45	5-Dec	Gas
5	Fish	Costco	\$3.99	6-Dec	Car Payment

From the “Budget Ribbon” click on “Insert Expense.”

A dialog box titled "Insert Expenses" with a red close button. It contains a label "What type of expense?" followed by two buttons: "Regular Expense" (which is highlighted with a dashed border) and "Large Expense". At the bottom is a "Cancel" button.

Insert Expenses

What type of expense?

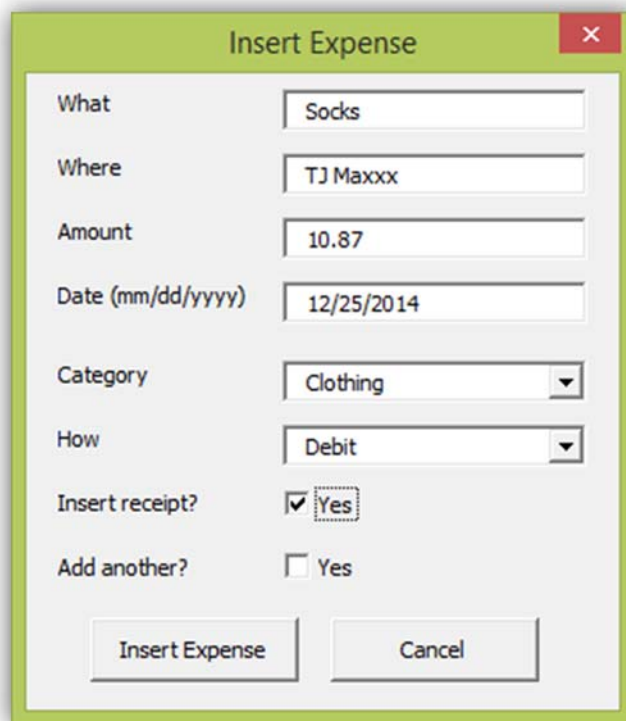
Regular Expense

Large Expense

Cancel

Users choose from “Regular” or “Large” (e.g. infrequent) expenses.

*Note: Users may select “Cancel” as well to close the dialog box without taking further action. Many forms include this feature.*

A dialog box titled "Insert Expense" with a red close button. It contains several input fields: "What" (Socks), "Where" (TJ Maxxx), "Amount" (10.87), "Date (mm/dd/yyyy)" (12/25/2014), "Category" (Clothing), and "How" (Debit). There are two checkboxes: "Insert receipt?" (checked, Yes) and "Add another?" (unchecked, Yes). At the bottom are "Insert Expense" and "Cancel" buttons.

Insert Expense

What: Socks

Where: TJ Maxxx

Amount: 10.87

Date (mm/dd/yyyy): 12/25/2014

Category: Clothing

How: Debit

Insert receipt? ☒ Yes

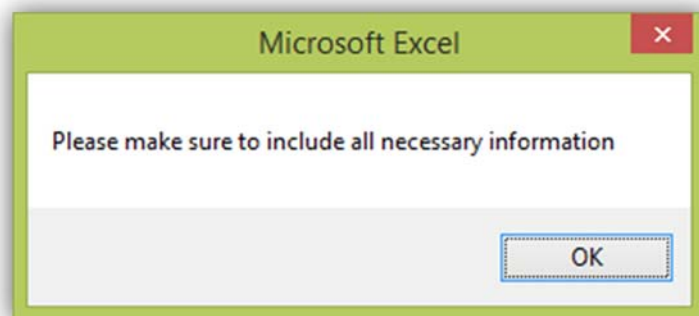
Add another? ☐ Yes

Insert Expense Cancel

Users insert/select all information related to the expense.

*Note: “Insert receipt?” feature is discussed further below.*

*Note: If “Add another?” is selected, once this entry is recorded the “Insert Expense” form will reappear allowing the user to enter an addition expense.*

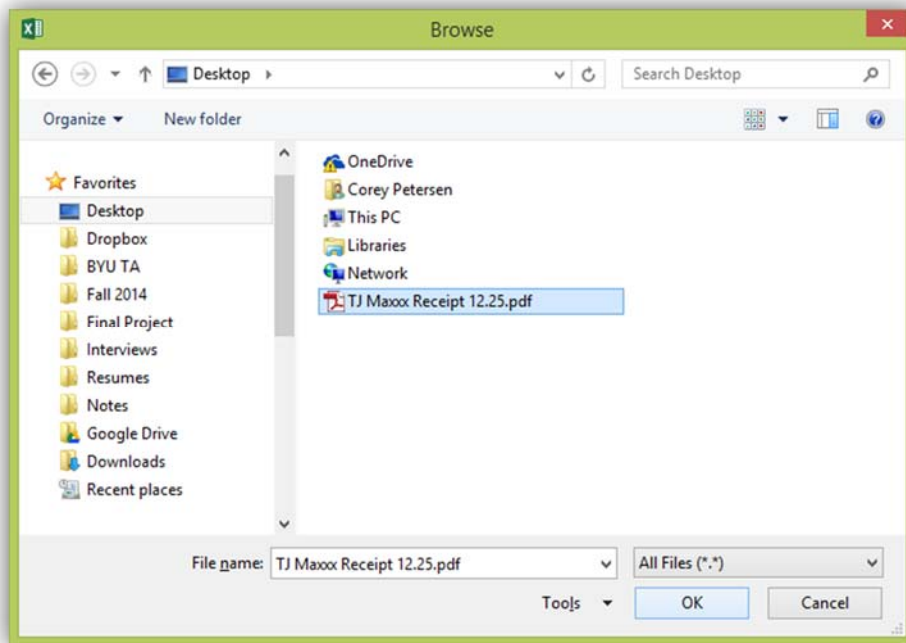
A dialog box titled "Microsoft Excel" with a red close button. It contains a message: "Please make sure to include all necessary information". At the bottom right is an "OK" button.

Microsoft Excel

Please make sure to include all necessary information

OK

If not all information is entered, an error message will appear. After the user clicks “OK” the “Insert Expense” form will be shown with all previously entered information.

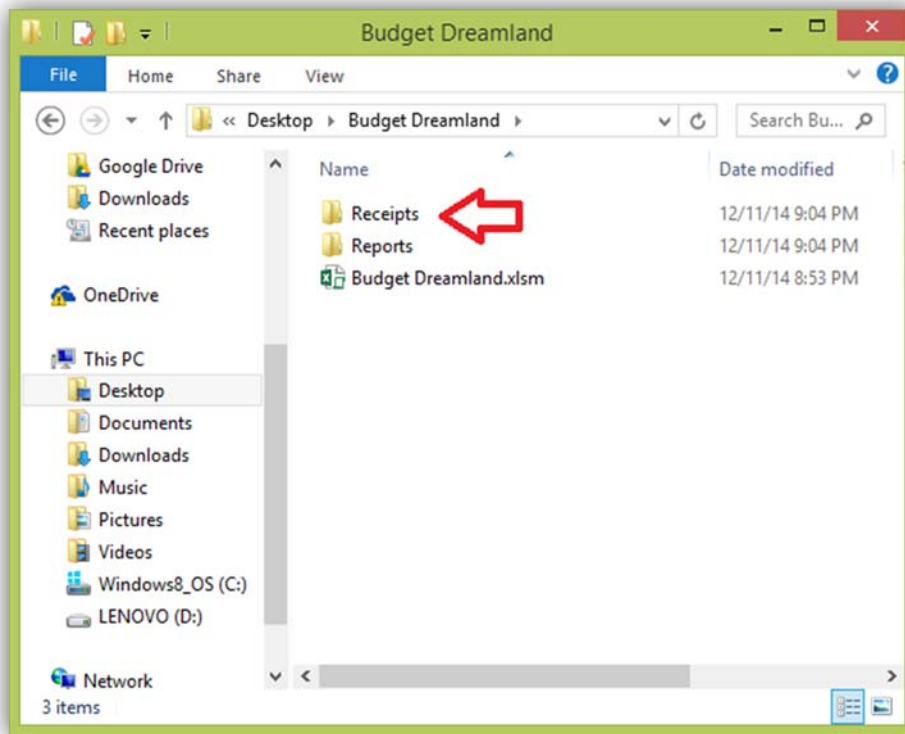


If “Insert receipt?” option is checked, once a user clicks on “Insert Expense” this dialog box will appear allowing the user to select the receipt file.

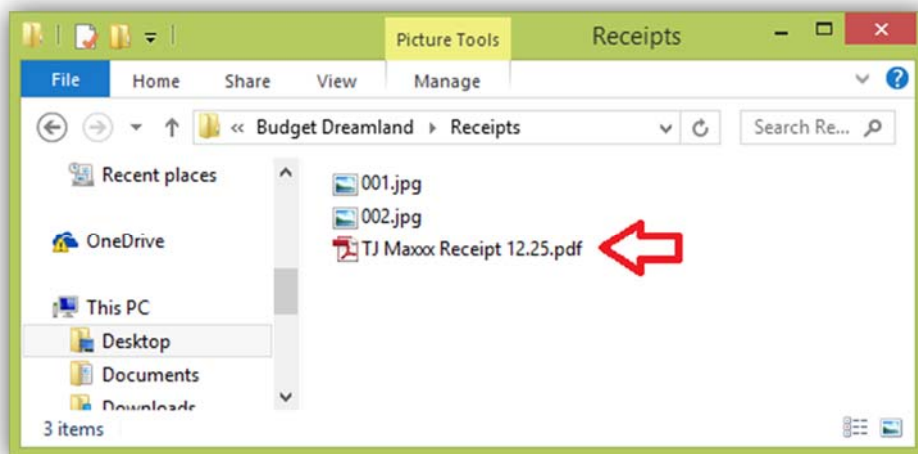
Information entered/selected is then saved to the appropriate month worksheet. If a worksheet for a particular month does not already exist, a new worksheet will be created.

*Note: name of receipt file names is include in the far right column.*

	A	B	C	D	E	F	G
	What	Where	Amount	Date	Category	How	Receipt
2	Smoked Turkey Leg	Costco	\$4.89	3-Dec	Food / Home	Debit	001.jpg
3	Quesidilla	Sprouts	\$2.99	4-Dec	Eating Out	Credit US 1	002.jpg
4	Groceries	Sprouts Farmers Mar	\$27.67	14-Dec	Food / Home	Credit Capital One	
5	Laundry	Laundry - Wymount	\$0.80	15-Dec	Laundry/Dry Cleaning	Signature Card - Corey	
6	Laundry	Laundry - Wymount	\$0.37	20-Dec	Laundry/Dry Cleaning	Signature Card - Corey	
7	Socks	TJ Maxxx	\$10.87	25-Dec	Clothing	Debit	TJ Maxxx Receipt 12.25.pdf
9							
10							
11							



If the user saved a receipt, a copy of the file is placed in a folder called "Receipts."



Using the file name recorded in the expense entry, the user can locate the corresponding receipt for the expense.

## Feature: Insert Income

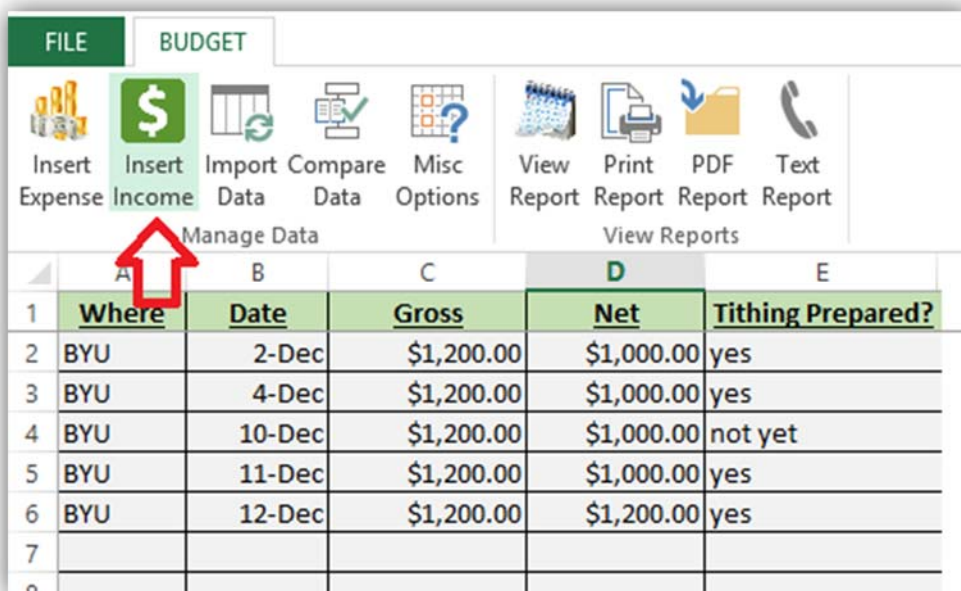
### What?

Users are able to insert income entries including details such as where, date, gross amount, net amount and note whether or not they have already prepared tithing for that income.

### Why?

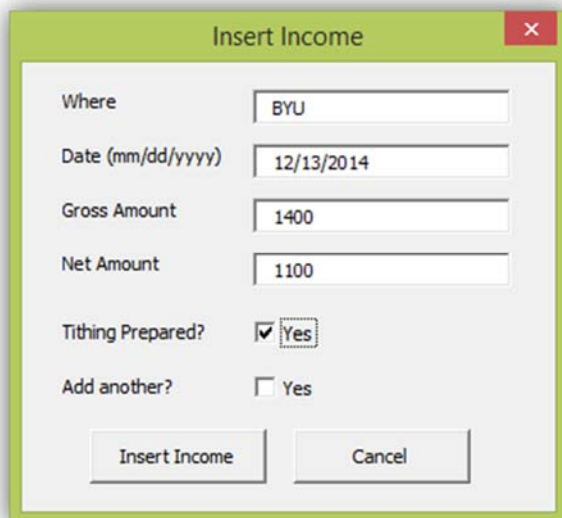
Inserting income entries is another basic feature of any budget. The “Tithing Prepared” feature will allow users to easily note outstanding tithing payments.

### How used?



	A	B	C	D	E
	Where	Date	Gross	Net	Tithing Prepared?
2	BYU	2-Dec	\$1,200.00	\$1,000.00	yes
3	BYU	4-Dec	\$1,200.00	\$1,000.00	yes
4	BYU	10-Dec	\$1,200.00	\$1,000.00	not yet
5	BYU	11-Dec	\$1,200.00	\$1,000.00	yes
6	BYU	12-Dec	\$1,200.00	\$1,200.00	yes
7					
8					

Users click on “Insert Income” from the “Budget” tab.



Insert Income

Where: BYU

Date (mm/dd/yyyy): 12/13/2014

Gross Amount: 1400

Net Amount: 1100

Tithing Prepared? ☒ Yes

Add another? ☐ Yes

Insert Income Cancel

Users fill out all information on the form at appears.

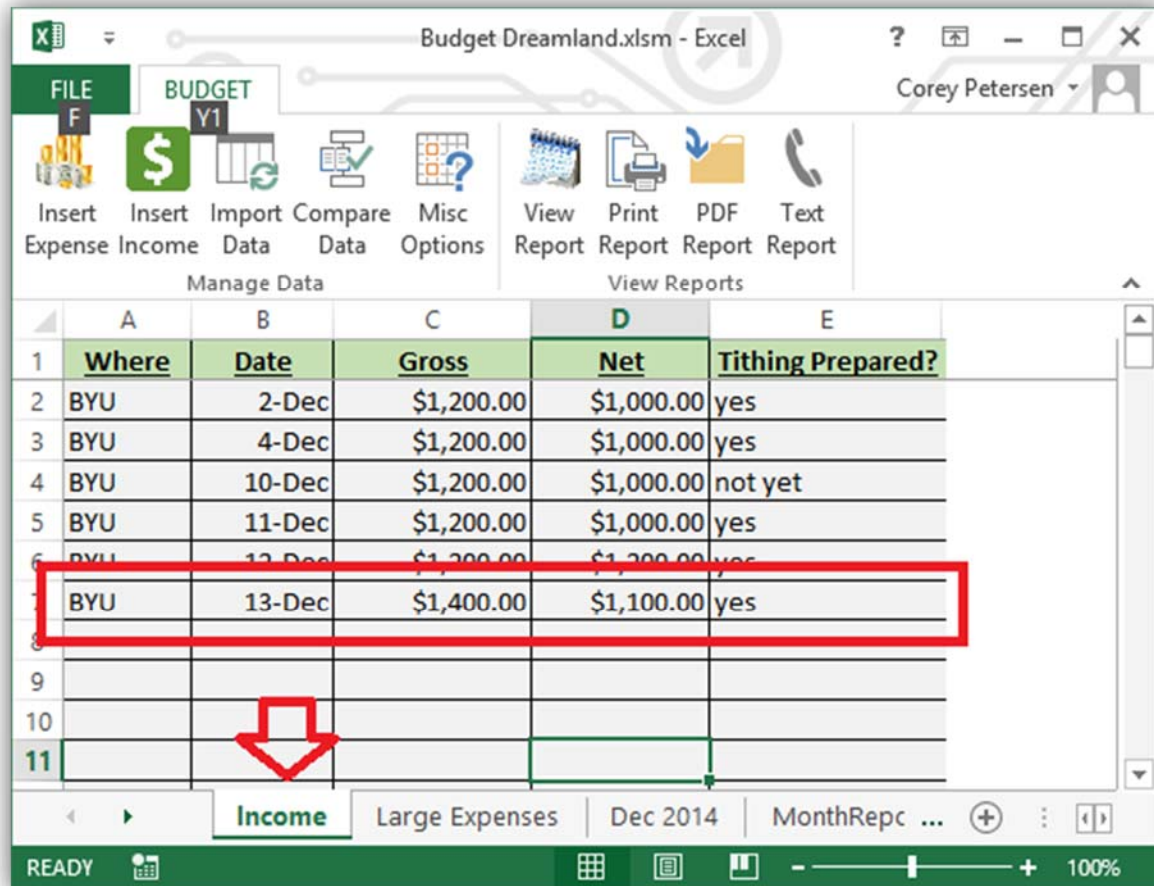
*Note: The user in this example selects “Yes” for the “Tithing Prepared?”*

*Note: If “Add another?” is selected, once this entry is recorded the “Insert Income” form will reappear allowing the user to enter in additional income.*



Income information is automatically inserted under the “Income” tab.

*Note: users can use this tab to easily identify income for which tithing payments are outstanding.*



Budget Dreamland.xlsm - Excel

Corey Petersen

FILE BUDGET Y1

Insert Expense Income Import Data Compare Data Misc Options View Report Print Report PDF Report Text Report

Manage Data View Reports

	A	B	C	D	E
	Where	Date	Gross	Net	Tithing Prepared?
1					
2	BYU	2-Dec	\$1,200.00	\$1,000.00	yes
3	BYU	4-Dec	\$1,200.00	\$1,000.00	yes
4	BYU	10-Dec	\$1,200.00	\$1,000.00	not yet
5	BYU	11-Dec	\$1,200.00	\$1,000.00	yes
6	BYU	12-Dec	\$1,200.00	\$1,000.00	yes
7	BYU	13-Dec	\$1,400.00	\$1,100.00	yes
8					
9					
10					
11					

Income Large Expenses Dec 2014 MonthRepc ...

READY 100%

## Feature: Import Data

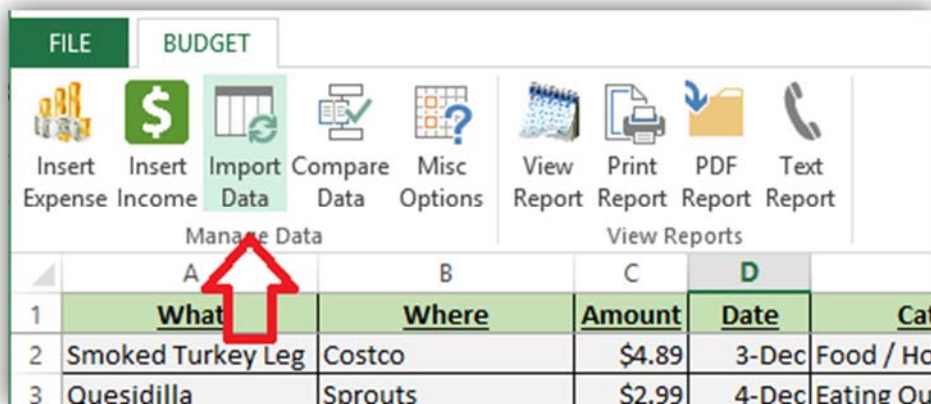
### ***What?***

Users are able to open webpages for their financial institutions to order to copy and paste recent transactions.

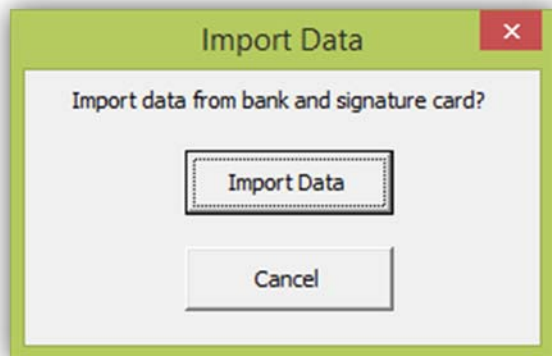
### ***Why?***

This feature allows the user to prepare to utilize the “Compare Data” feature.

### ***How used?***



Users select “Import Data” from the “Budget” tab.



Users then click on “Import Data” to confirm that they want to proceed.



The left screenshot shows a web browser with a green address bar containing the URL <https://www.usbank.com/index.html>. The page displays the U.S. Bank National Association website. The header includes the U.S. Bank logo and navigation links for Personal, Small Business, Commercial & Government, and a search bar. Below the header, there are links for Online & Mobile Banking, Checking & Savings, Credit Cards & Prepaid Cards, Mortgage & Refinance, Loans & Lines of Credit, and Investing & Wealth Management. A large banner on the left side of the page reads: "Have a major purchase on your mind? Apply for a Home Equity Line of Credit today. Rates as low as 3.99%". A "Learn More" button is located below the banner. On the right side, there are links for "Log In" and "Find a Location". Below these links, there are input fields for "Personal ID" and "Online Banking", a "Log In" button, and a "Need online access? Enroll Now" button. The right screenshot shows a web browser with a green address bar containing the URL <https://cas.byu.edu/cas/login?services=https>. The page displays the Brigham Young University (BYU) login page. The header includes the BYU logo and the text "BRIGHAM YOUNG UNIVERSITY". Below the header, there is a "Sign In" heading. The login form includes a "Net ID:" label, a text input field containing "coreyp", a "Password:" label, and a password input field with masked characters. Below the password field, there is a checkbox labeled "Warn me before signing me into other sites." and a "Sign In" button. There are also links for "Forgot your Net ID or password?" and "Create a Net ID".

The screenshot displays the Microsoft Excel application window titled "Budget Dreamland.xlsm - Excel". The "BUDGET" ribbon is selected, showing a series of icons for data management and reporting. The spreadsheet grid is visible with columns A through O and rows 1 through 7. The status bar at the bottom indicates the application is "READY" and the zoom level is set to 100%.

The screenshot shows the 'BUDGET' tab in the 'Budget Dreamland.xlsx' spreadsheet. The interface includes a ribbon with options like 'Insert Expense', 'Insert Income', 'Import Data', 'Compare Data', 'Misc Options', 'View Report', 'Print Report', 'PDF Report', and 'Test Report'. The spreadsheet grid shows columns A through O and rows 1 through 4. A red box highlights the following data:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	12/8/14	6:53 AM	Laundry - Wymount	(\$0.37)	\$2.42										
2	12/8/14	6:09 AM	Laundry - Wymount	(\$0.80)	\$2.79										
3															
4															

The status bar at the bottom shows 'READY', 'Income', 'Large Expenses', 'Dec 2014', 'MonthReport', 'USBankDebit', 'USBankCredit', 'CoreySigCard', and a zoom level of 100%.

## Feature: Compare Data

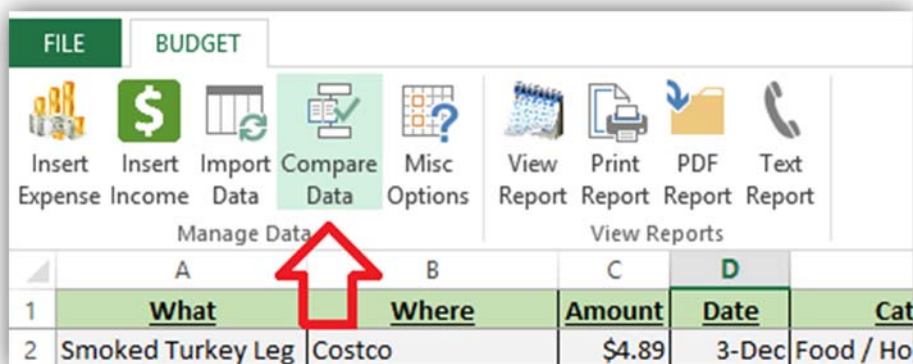
### ***What?***

Users are able to compare data they have imported from their online financial institution databases with data already found within the budget workbook. Any data not already found in the budget workbook can be easily added.

### ***Why?***

Often people forget to insert certain expenses within their budget reports. This feature allows users to make sure their expense log is up-to-date with online databases from their financial institutions.

### ***How used?***



Users select “Compare Data” from the “Budget” tab.

Insert Expense

What:

Where:

Amount:

Date (mm/dd/yyyy):

Category:

How:

Insert receipt? ☐ Yes

Add another? ☐ Yes

For all expenses found in the imported data which are not already included in the budget workbook an “Insert Expense” form appears with populated with where, amount, and date information that was gather from the imported data.

**Insert Expense**

What: Laundry

Where: Laundry - Wymount

Amount: 0.37

Date (mm/dd/yyyy): 12/8/2014

Category: Laundry/Dry Cleaning

How: Signature Card - Corey

Insert receipt? ☐ Yes

Add another? ☐ Yes

Insert Expense Cancel

Users fill out the remaining information to complete the form and click "Insert Expense."

Information then is automatically stored in the appropriate month worksheet. As with other expense insertions, if a worksheet for a particular month does not already exist, a new worksheet for that month will be created.

Budget Dreamland.xlsm - Excel

Corey Petersen

FILE BUDGET

Insert Expense Income Data Options View Report Print Report PDF Report Text Report

Manage Data View Reports

	A	B	C	D	E	F	G
	What	Where	Amount	Date	Category	How	Receipt
1	Smoked Turkey Leg	Costco	\$4.89	3-Dec	Food / Home	Debit	001.jpg
2	Quesidilla	Sprouts	\$2.99	4-Dec	Eating Out	Credit US 1	002.jpg
3	Groceries	Sprouts Farmers Mar	\$27.67	14-Dec	Food / Home	Credit Capital One	
4	Laundry	Laundry - Wymount	\$0.80	15-Dec	Laundry/Dry Cleaning	Signature Card - Corey	
5	Laundry	Laundry - Wymount	\$0.37	8-Dec	Laundry/Dry Cleaning	Signature Card - Corey	
6	Laundry	Laundry - Wymount	\$0.37	8-Dec	Laundry/Dry Cleaning	Signature Card - Corey	
7	Laundry	Laundry - Wymount	\$0.37	8-Dec	Laundry/Dry Cleaning	Signature Card - Corey	
8							
9							
10							
11							

Income Large Expenses Dec 2014

READY

## Feature: Misc Options

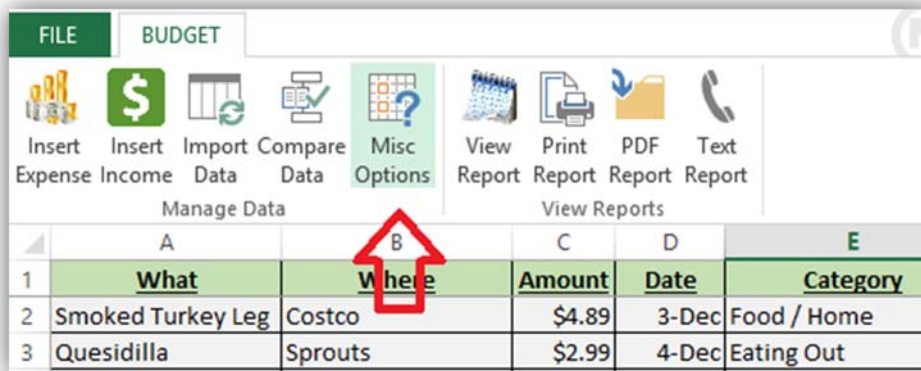
### What?

Users may choose from three additional options: “Calculate State Tax I Owe”, “Pay Off Credit Cards”, and “View Paycheck.”

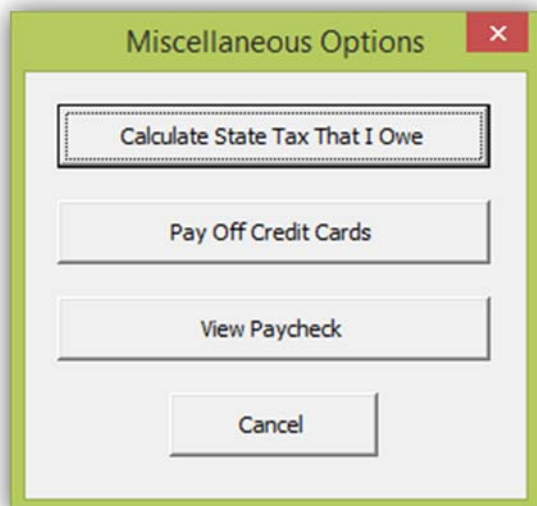
### Why?

Calculating state tax a person owes can be a laborious process (e.g. pulling information from various websites, calculating tax owed). This feature completes this for the user automatically. “Pay Off Credit Cards” and “View Paycheck” are very common tasks users will engage in as they work with their budget.

### How used?



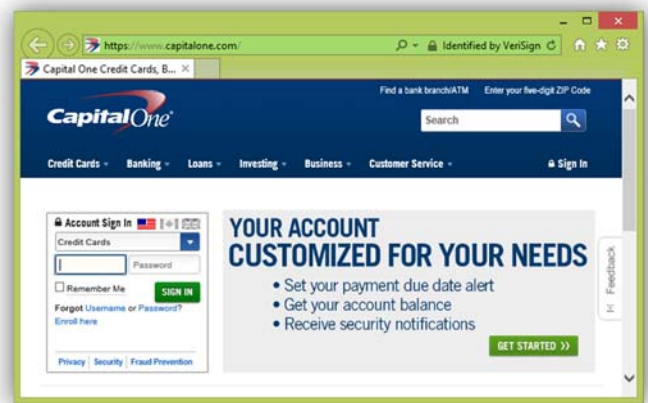
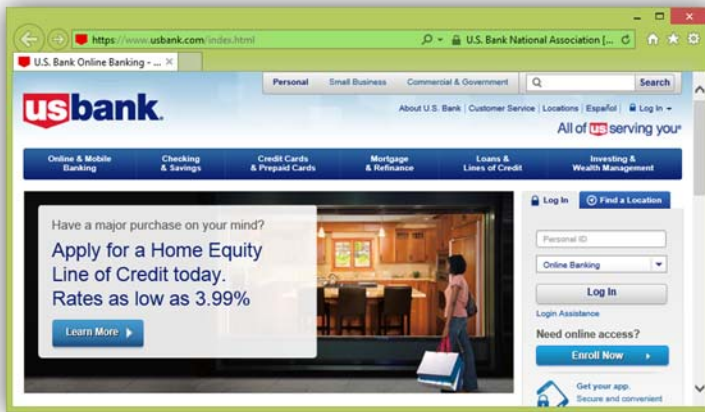
Users select “Misc Options” from the “Budget” tab.



Users choose from the “Calculate State Tax I Owe”, “Pay Off Credit Cards”, and “View Paycheck” buttons.

*Note: the “Calculate State Tax I Owe” is still under construction for this version of Budget Dream Land.*

When the user clicks on “Pay Off Credit Cards” Internet Explorer windows pop up with the login pages for their various financial institutions.



When the user clicks on “View Paycheck” an Internet Explorer window pops up with the login pages for the website containing their paycheck information.



## Feature: View Reports

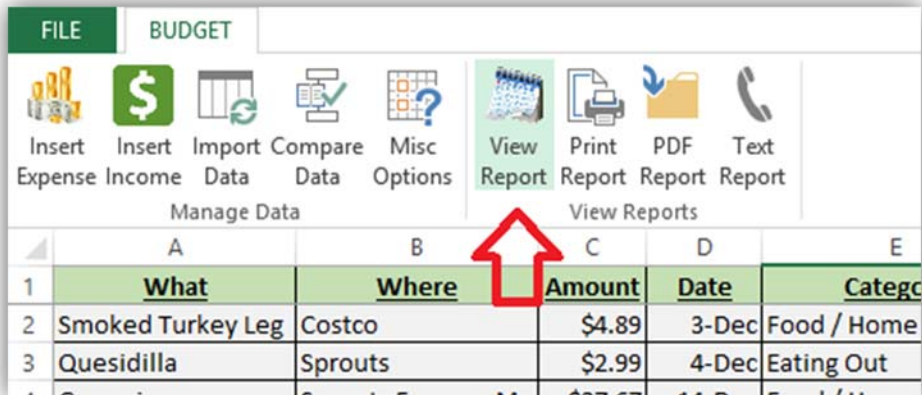
### ***What?***

The group “View Reports” will be discussed as one feature. This group contains the option for users to create a month’s expense report including budgeted vs. spent figures as well as that month’s expense report by category. Addition features in the “View Reports” Group include print report, save report as PDF, and text report.

### ***Why?***

A simple report helps a user to visualize their expenses and look for desirable and undesirable trends in their data.

### ***How used?***

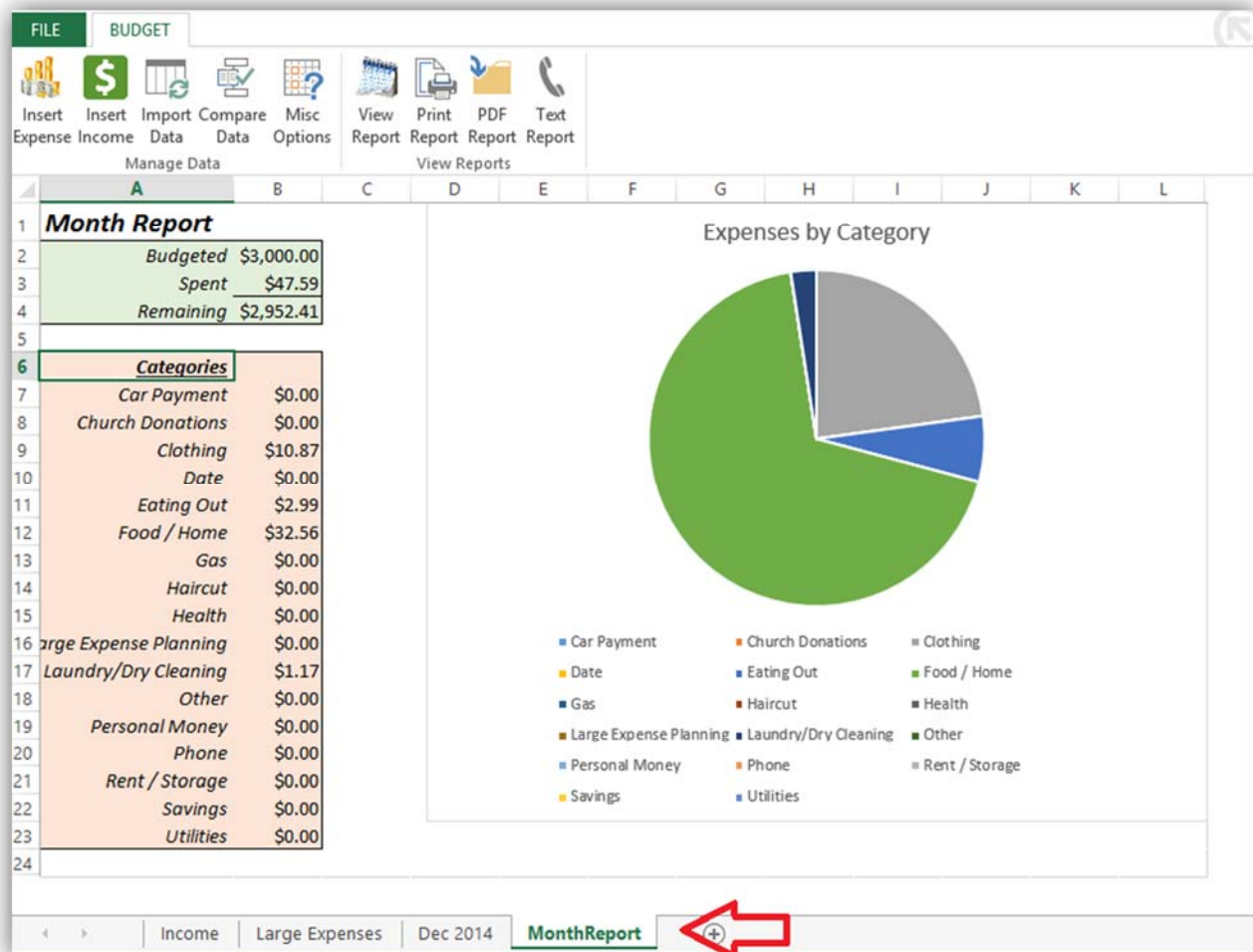


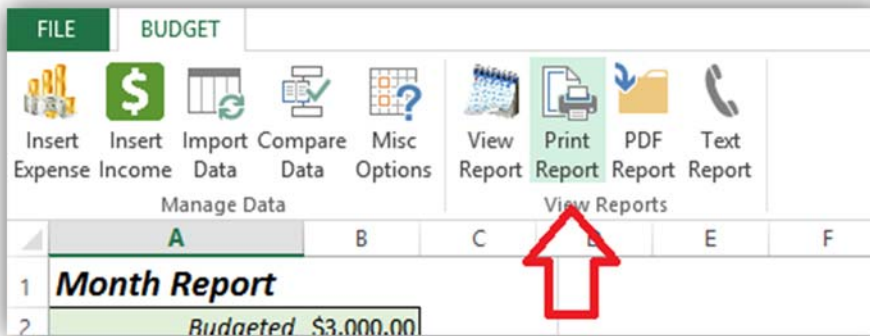
User selects “View Report” from the “Budget” tab.



A “MonthReport” worksheet is created. At the top left in green is a simple report of budgeted expenses vs. current expenses. Below in orange is a list of total expenses by category. To the right, a pie chart is generated to give the user a visual of current expenses by category.

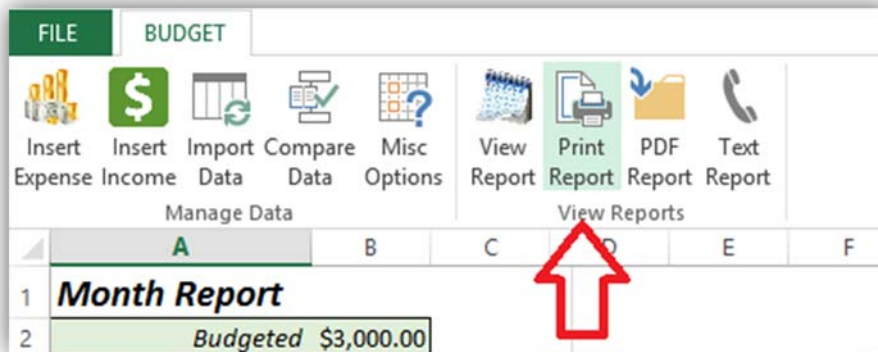
*Note: currently this feature only works for the corresponding “Dec 2014” worksheet. Future versions will allow for a monthly report to be generated for any month.*



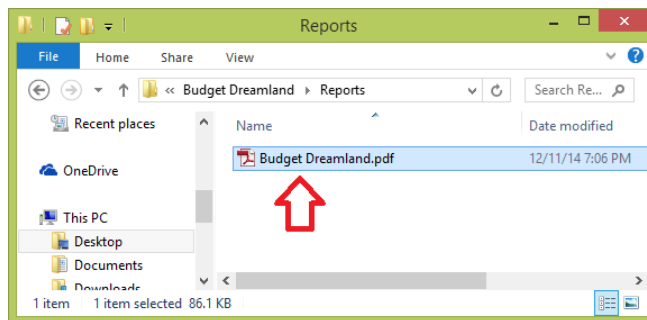


Users may print the report by clicking on “Print Report.”

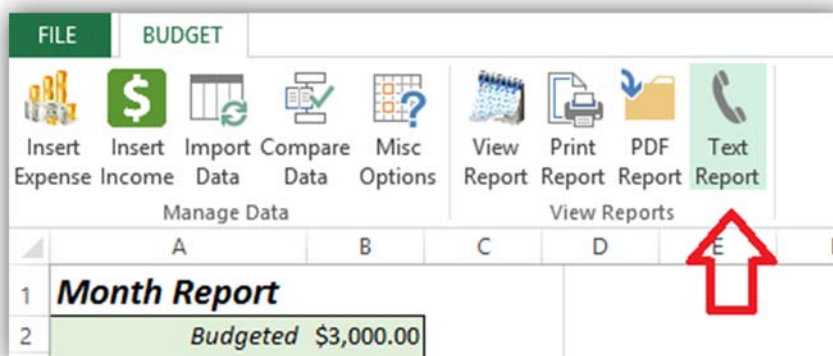
*Note: this feature currently only selects the first printer listed in print settings.*



Users may save a PDF of the report by clicking on “PDF Report.”



*Note: this feature, though it worked properly previously, recently broke and will be fixed in later versions.*



By selecting “Text Report” users may send a text message to themselves with the budgeted expenses vs. current expenses portion of the report.

*Notes: this feature is still under construction.*

## **Learnings and Conceptual Difficulties**

### **What did I learn?**

Most of the following concepts I learned via online forums, the Microsoft website as well as recording and modifying macros:

- How do you run code when a workbook initially opens?
- How do you copy and paste a file into a specific folder (note: initial learning done via online, then aided by the TA)?
- How do you select a certain worksheet using a variable in the worksheet name?
- How do you format a newly created worksheet?
- What are the limitations
- How do you create a pie chart?
- How do you convert the month from numbers (e.g. "12") to letters (e.g. "Dec")?
- How do you identify whether or not an item is found within a worksheet?
- How do you add borders around a range of cells?
- How do you print?
- How do you open multiple webpages and have them stay open?
- How do you put a tab at the end of a row of tabs in the ribbon?

### **What was I unable to complete as proposed?**

#### *Import data from financial websites*

- I tried recording a macro and using the "Get external data" feature but most financial institutions would simply not allow me to copy the data from online and paste it into a workbook. I built a workaround into the file by having the user copy and paste the data into the workbook instead of directly importing the data. The TA mentioned I should continue to research but it may not be possible to download this data as it may be too well protected.

#### *Calculate State Tax That I Owe*

- Similar to above, Amazon (the main website I use for this feature) would not allow me to copy the relevant data from my order history. I need to research this feature future to see if I can get this to work in future versions of this program.

#### *Choose from a Variety of Reports*

- I built a simple report system that is tied directly to the "Dec 2014" expense log. I simply ran out of time to add in a variety of reports. I also want to make this feature dynamic so that you could choose different months for the report.

#### *PDF Report*

- This feature was working earlier. Once I put in the "Print Report" feature, however, it stopped working and I could not figure out why. I need to further research this.

#### *Text Report*

- Though I used the code from class for this feature, it appears there is a missing variable input for the class module "modGmail." I need to do further research as well as ask the professor of what may be missing to be able to include this in future versions of this program.

## **Assistance**

I received some assistance from both TAs: Nathan Dudley and Blaire Pang. A number of topics which I received help with from Nathan and Blaire include:

- How do I populate the expense worksheet properly adding data under previously recorded data?
- How do I work around financial website lock down?
- How do I select the filename portion of a file path?
- How do I copy and paste a file using VBA?