

Final Project – Budget 2.0

Executive Summary

Over the last two years I have used various budging software solutions such as Quicken and Mint.com. Unfortunately, these programs never seem to fully meet my expectations (e.g., Mint.com won't allow me to edit pre-established spending categories and Quicken constantly has issues importing my financial data). As a result I created Budget 2.0, a budgeting program that can met all of my needs. The program will be used primarily by my wife and me (although friends and family are welcome to use it also). Budget 2.0 can perform the following functions:

- Download banking transactions from multiple bank accounts into account registers
- Backup data to DropBox
- Perform reconciliations
- Edit spending categories
- Edit the budget categories and amounts
- Compile transactions from all registers into one database for analysis

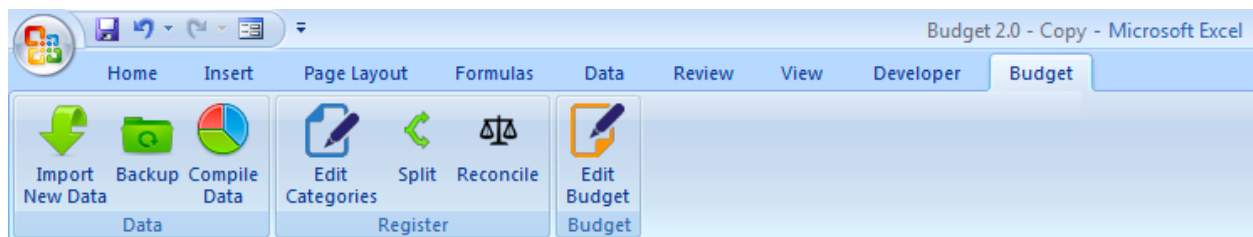
Implementation Documentation

The following section details how each function of Budget 2.0 works as outlined below:

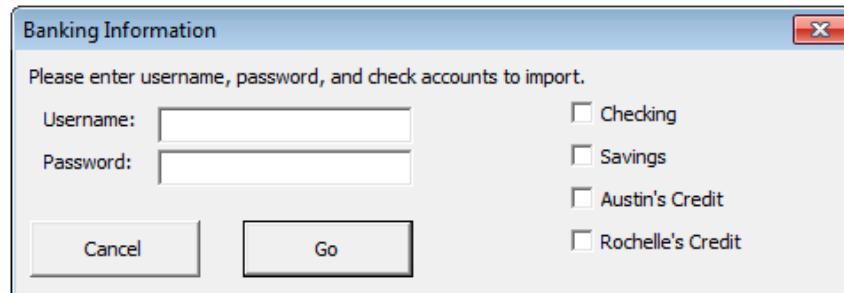
- **Getting Started**
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 - *Compiling Data for Analysis*
- **Registers**
 - *Editing Categories*
 - *Splitting Transactions*
 - *Reconciliations*
- **Editing the Budget**

Getting Started

The Ribbon – The user can access all buttons needed to run Budget 2.0 under the “Budget” tab in the ribbon as shown below (the function of each button will be described throughout the following pages):



Importing New Data – To import new banking transactions, click on the “Import New Data” button. The following dialog box will appear asking the user to input their online username and password and to check which bank accounts to import¹:



The dialog box is titled "Banking Information" and contains the following fields and options:

- Username: [Text Field]
- Password: [Text Field]
- Cancel [Button]
- Go [Button]
- ☐ Checking
- ☐ Savings
- ☐ Austin's Credit
- ☐ Rochelle's Credit

After entering in this information, click “Go.” The program will then access the user’s online bank accounts and download the transaction history for the selected accounts. If an invalid username or password is entered, a message box will appear notifying the user their credentials were invalid. New transactions (determined by the oldest date in each register) will be imported into one of four registers (Checking, Savings, Austin’s Credit, and Rochelle’s Credit). Each register is a separate worksheet within the workbook.

When new transactions are imported into a register, the program places an “x” in the first column of all newly imported transactions. Transactions that were imported previously will automatically have this “x” deleted to indicate they are no longer new. This feature enables the user to easily see which transactions have recently been imported and can facilitate categorizing transactions. In addition, the program will automatically extract the vendor name in the “Payee” column when possible, extract the check number if applicable, and place a “C” in the cleared (Clr) column indicating the transaction has cleared the bank. An example of these features is shown below:

Checking

New	Date	Check #	Payee	Memo	Category	Notes	Deposit	Clr	Payment	Balance
	11/13/2012		COSTCO WHSE	POS PURCHASE - C Misc		Stamps				4,040.06
	11/14/2012		IHC CENTRAL AR S	CHECK CRD PURCH	Doctor	Everlie's hospital bill		R	416.98	3,623.08
	11/15/2012			INTEREST PAYMENT	Interest Income		0.01	R		3,623.09
	11/19/2012			HCS 041038985 Q	Austin's Net Income		366.24	C		3,989.33
	11/19/2012		UWMC ONLINE B	CHECK CRD PURCH	Doctor	Bill from doctor in WA		C	260.52	3,728.81
	11/19/2012		WAL MART 2511 A	POS PURCHASE - W Misc		Just a bunch of stuff			35.34	3,693.47
	11/20/2012		THE HOME DEPOT	POS PURCHASE - T Misc		Plug for Jay's stove			25.58	3,667.89
	11/21/2012		AMERICAN FORK I	POS PURCHASE - A	Reimbursable	Bought stuff for Becca		C	1.50	3,666.39
x	11/26/2012		SOMERS RICHARD	TRANSFER FROM S	Mobile Phone		76.68	C		3,743.07
x	11/26/2012		SOMERS RICHARD	TRANSFER FROM S	Mobile Phone		36.88	C		3,779.75
x	11/26/2012		COSTCO GAS	POS PURCHASE - C	Gas & Fuel			C	28.44	3,751.31
x	11/26/2012	188		CHECK # 188	(Vie Titling			C	51.45	3,699.86

Backing Up Data – At anytime the user can create a backup of Budget 2.0 by clicking on the “Backup” button. This will save a copy of the workbook to a folder on Dropbox (for my personal ease of use, the destination folder is pre-programmed into the code).

¹ Note that the program is currently designed to only import transactions from Wells Fargo.

Compiling Data for Analysis – At anytime the user can compile the data from all registers into one database (located in the “Data” worksheet) by clicking on the “Compile Data” button. In addition to compiling all transaction data, the program will also add an extra column in the database indicating whether each transaction is an expense, income, or a bank account (which is shown as a blank) to facilitate analysis. A Pivot Table which references this database will also be refreshed. This Pivot Table is located on the “Pivot Table” worksheet and can be used for a detailed analysis of all transactions from all registers.

Registers

Editing Categories – Each transaction within a register can be assigned a specific category which can be referenced later for budgeting or analysis purposes. To assign a category to a transaction, click the a dropdown list found in each cell in the category column and select a category from a pre-determined set of categories as shown below:

Checking

New	Date	Check #	Payee	Memo	Category	Notes	Deposit	Clr	Payment	Balance
	11/13/2012		COSTCO WHSE	POS PURCHASE - C	Misc	Stamps		R	40.00	4,040.06
	11/14/2012		IHC CENTRAL AR S	CHECK CRD PURCH	Doctor	Everlie's hospital bill		R	416.98	3,623.08
	11/15/2012			INTEREST PAYMENT	Interest Income		0.01	R		3,623.09
	11/19/2012			HCS 041038985 Q	Austin's Net Income		366.24	C		3,989.33
	11/19/2012		UWMC ONLINE BI	CHECK CRD PURCH	Doctor	Bill from doctor in WA		C	260.52	3,728.81
	11/19/2012		WAL MART 2511 /	POS PURCHASE - W	Misc	Just a bunch of stuff			35.34	3,693.47
	11/20/2012		THE HOME DEPOT	POS PURCHASE - T	Misc	Plug for Jay's stove			25.58	3,667.89
	11/21/2012		AMERICAN FORK I	POS PURCHASE - A	Reimbursable	Bought stuff for Becca		C	1.50	3,666.39
x	11/26/2012		SOMERS RICHARD	TRANSFER FROM			76.68	C		3,743.07
x	11/26/2012		SOMERS RICHARD	TRANSFER FROM S			36.68	C		3,779.75
x	11/26/2012		COSTCO GAS	POS PURCHASE - C				C	28.44	3,751.31
x	11/26/2012	188		CHECK # 188 (Vie				C	51.45	3,699.86

To edit the list of possible categories, click the “Edit Categories” button. The following user form will appear:

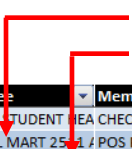
This form allows the user to either edit current categories or add a new category. To edit an existing category first select the desired category within the category listing (i.e., Auto Insurance). The form will automatically show what group the selected category is a sub category of (i.e., Auto & Transportation) and whether it is an income or expense item. If the category is neither an expense nor an income item (e.g., an account) neither button will be selected. Either of these two category characteristics can be edited by simply changing the desired criteria and then clicking “Apply.” Alternatively, the user can delete a category by selecting the desired category and then clicking the “Remove” button.

To add a new category, type the new category name in the “Add Category” section of the form, select what group the category will be a sub category of, and choose whether it will be an expense or income item, then click “Add”. Note that the expense/income radio buttons are optional. The newly created category will automatically appear in the current categories list in alphabetical order. When finished using the form, click “OK” to exit the form.

Splitting Transactions

Some transactions may need to be assigned to multiple categories. In this case, select any cell within the desired transaction and click on the “Split” button. The program will then add an additional line below the current transaction and copy all data from the original transaction into the new line (except the category and amount). The user can then allocate the payment amount between the two transactions and assign each a category as shown below:

Checking



Column	Date	Check #	Payee	Memo	Category	Notes	Deposit	Clr	Payment	Balance
	11/28/2012		BYU STUDENT	HEA CHECK CRD PURCH Doctor		Perscriptions		C	24.17	403.85
	11/28/2012		WAL MART 2511	POS PURCHASE -				C	68.95	334.90
	11/28/2012		WAL MART 2511	POS PURCHASE -				C		334.90
	12/1/2012		COSTCO WHSE 07	POS PURCHASE - Ct Groceries				C	43.03	291.87
x	11/30/2012			RECURRING TRANSI	Savings			C	100.00	191.87

Reconciliations

To reconcile a register, navigate to the desired register worksheet and click on the “Reconcile” button. To begin the reconciliation, enter the statement ending balance and date into the “Statement Ending Balance” and “Statement Date” fields on the left and click “Go.”

In the example shown on the following page, the user entered \$261.87 as the statement ending balance and a statement end date of 11/28/2012. The reconciliation form then generated a list of payments and deposits that were not previously reconciled up through the statement date, calculated and showed the cleared balance, and calculated the difference between the statement ending balance and cleared balance. The difference of \$28.44 was due to a purchase at Costco Gas (circled in red) which wasn’t cleared in the register (the result of a manually entering transaction instead of importing it). Because the user can now see that the purchase has cleared

the bank, they can click “Cancel”, find that item in the register, mark it as cleared, and then re-reconcile.

Reconciliation Form

Payments				Deposits		
C	11/19/2012	UWMC ONLINE BILL P ;	260.52	C	11/19/2012	366.24
C	11/19/2012	WAL MART 2511 AMER	35.34	C	11/26/2012	SOMERS RICHARD 76.68
C	11/20/2012	THE HOME DEPOT AME	25.58	C	11/26/2012	SOMERS RICHARD 36.68
C	11/20/2012	WAL MART 2511 AMER	15.08	C	11/26/2012	500.00
C	11/21/2012	JOANN STORES, I AME	13.76	C	11/27/2012	45.00
C	11/21/2012	AMERICAN FORK D AM	1.50	C	11/28/2012	36.68
C	11/26/2012	VERIZON WRLS MYACC	283.40			
C	11/26/2012	COSTCO WHSE	399.28			
C	11/26/2012	COSTCO GAS	28.44			
C	11/26/2012		51.45			
C	11/27/2012	COTTON BABIES INC. }	159.00			
C	11/27/2012	SLATE CANYON STO	55.00			
C	11/28/2012	BYU STUDENT HEALTH	24.17			
C	11/28/2012	WAL MART 2511 AMER	98.95			
C	11/28/2012	COSTCO WHSE 0733 LI	43.03			

Statement Ending Balance	261.87	Cleared Balance	290.31
Statement Date	11/28/2012	Statement Ending Balance	261.87
		Difference	-28.44
<input type="button" value="Go"/>		<input type="button" value="Cancel"/> <input type="button" value="Done"/>	

Once register is balanced (i.e., the “Difference” equals zero), click “Done.” The program will then mark all transactions that were shown in the reconciliation as reconciled by placing an “R” in the Clr column and change the text color of the reconciled transactions to grey as shown below²:

Checking

No.	Date	Check #	Payee	Memo	Category	Notes	Deposit	Clr	Payment	Balance
	11/13/2012		COSTCO WHSE	POS PURCHASE - C Misc		Stamps		R	40.00	4,040.06
	11/14/2012		IHC CENTRAL AR S	CHECK CRD PURCH Doctor		Everlie's hospital bill		R	416.98	3,623.08
	11/15/2012			INTEREST PAYMENT Interest Income			0.01	R		3,623.09
	11/19/2012			USC 041038985 Q Austin's Net Income			366.24	C		3,989.33
	11/19/2012		UWMC ONLINE BI	CHECK CRD PURCH Doctor		Bill from doctor in WA		C	260.52	3,728.81
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x	11/26/2012		SOMERS RICHARD	TRANSFER FROM St Mobile Phone			76.68	C		3,743.07
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x	11/26/2012	188		CHECK # 188 (Vie Titling				C	51.45	3,699.86

² Please note that the amounts in the reconciliation example are from a different data set than the amounts in shown in the checking register.

Editing the Budget

To edit the budget, navigate to the “Budget” worksheet (shown below). Within this worksheet, the user can modify budgeted amounts by simply typing a new amount in the “Budget” column. The “Actual” and “Remaining” amounts will automatically populate based on spending in the budgeted month. To change the budget month, click on the up/down arrows in the upper left-hand corner.

Oct-12 Budget			
Category	Remaining	Actual	Budget
Baby Supplies	2	38	40
Books & Supplies	-169	174	5
Dates	21	25	46
Doctor	88	812	900
Fast Offering	0	20	20
Gas & Fuel	53	137	190
Gifts for Others	300	0	300
Groceries	71	94	165
Misc	78	22	100
Mobile Phone	-76	210	134
Other Meals	-38	38	0
Storage Unit	55	0	55
Tithing	105	95	200
Total	490	1,665	2,155
Monthly Allowance			2,155
			0

To edit which categories are shown in the budget, click on the “Edit Budget” button. The following user form will appear:

Dialog box titled "Edit Budget Categories".

Category Listing:

- Austin's Money
- Austin's Net Income
- Auto Insurance
- Baby Purchases
- x Baby Supplies
- Banking Fees
- x Books & Supplies
- Checking
- Clothing
- Credit Card Payment
- x Dates
- Dentist
- x Doctor

Radio buttons: ☐ Include, ☒ Exclude

Buttons: Close, Apply

To include/exclude a category, simply select the desired category, select either the “Include” or “Exclude” radio button, and click “Apply” to save the change. Categories that are included in the budget will have an “x” beside them in the user form.

Learning & Conceptual Difficulties Encountered

There are quite a few things I learned while working on this project. The following is a list of some of the key things I learned:

- How to create multiple columns in a list box (learning how to do this was a huge breakthrough for me and the code was utilized in both the reconciliation form and budget category listing form)
- How to use the “agent” to access and download my online banking information
- How to hide Internet Explorer when using the “agent” (found a simple solution, but it took quite a while to figure out)
- How to save a copy of the workbook without recording a macro of myself clicking on “Save As” in the file menu. Instead I used `Activeworkbook.SaveCopyAs` which allowed me to backup the file without having the active workbook become the backed up copy like the “Save As” feature does
- How to put icons into the ribbon using the `RibbonWizard` file
- And lastly, I learned that a macro can be assigned to any object or shape (I used this to create nice looking up/down arrows in budget)