

# Credit Card Statement Eliminator & Spending Tracker

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## Executive Summary

As an investment broker for three years, I had the opportunity to consult clients on a myriad of personal finance topics. Of the many personal finance principles I learned during that time, few are as fundamental and important as this: Spend less than you earn. A critical component of that is keeping track of your expenses on a regular basis, and ensuring that they are within budget. Furthermore, the ability to set an appropriate, and realistic budget is enhanced by a knowledge of your historical spending habits over different periods of time.

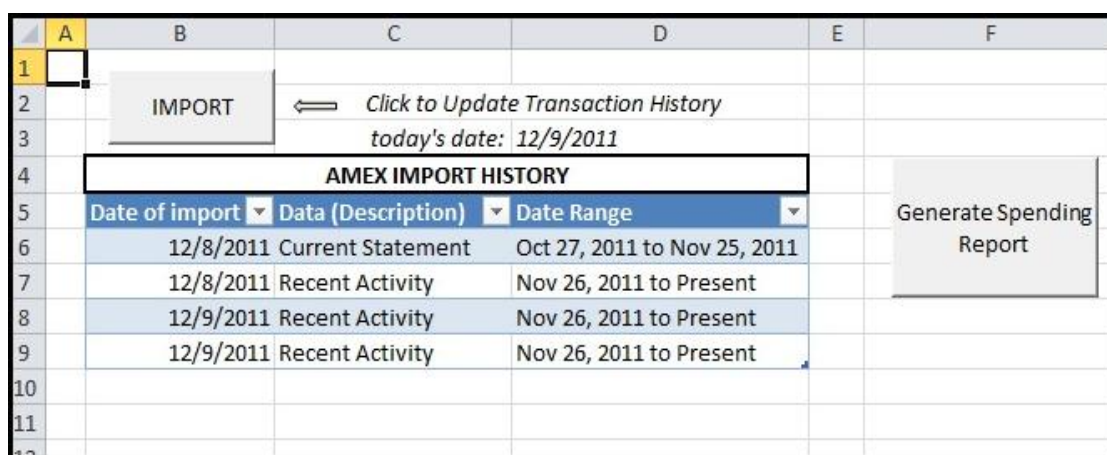
This tool seeks to facilitate the process of budgeting and tracking expenses by automating several steps of the budgeting process. Specifically, the tool has two features: FEATURE 1 allows the user to import immediate, current transaction history on his/her American Express (hereafter “Amex”) credit card from the Amex website directly into a tracking spreadsheet, thereby eliminating the need to receive paper (or even emailed) statements. FEATURE 2 allows the user to generate customized spending reports (including charts) – a critical component of the budgeting process.

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## Implementation Documentation

### FEATURE 1 = Automatically Import Amex Transaction History.

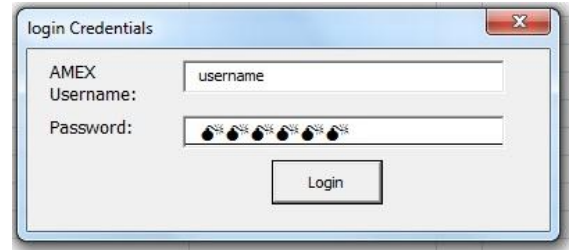
The first page of the tool is what I call the “Cockpit.” (see screenshot 1) It displays a record of historical imports so the user can quickly see what information was imported, and how long ago. It also has two buttons: (1) “IMPORT” and (2) “Generate Spending Report” (more on that one below). With one click of the “import” button, a program is initiated that does the following:



	A	B	C	D	E	F
1						
2		IMPORT	← Click to Update Transaction History			
3			today's date: 12/9/2011			
4		AMEX IMPORT HISTORY				
5		Date of import	Data (Description)	Date Range		Generate Spending Report
6		12/8/2011	Current Statement	Oct 27, 2011 to Nov 25, 2011		
7		12/8/2011	Recent Activity	Nov 26, 2011 to Present		
8		12/9/2011	Recent Activity	Nov 26, 2011 to Present		
9		12/9/2011	Recent Activity	Nov 26, 2011 to Present		
10						
11						

Screenshot 1: Cockpit Page

1. Brings up a Login form (see screenshot 2) for the user to enter his/her Amex username and password.
2. Invisibly opens Internet Explorer, going to the Amex login page
3. Automatically enters the username and password on the login page
4. Goes straight to the Amex “transaction history” page
5. Scans over the dates of transactions on the transaction history page, looking only for new transactions (transactions that have taken place since the *last* import). When it finds a new transaction, it then:
  - a. Pulls the date, description, amount, and cardholder information from the transaction history page and adds them to the table on the spreadsheet’s “AMEX History” page (see screenshot 3)



1 AMEX TRANSACTION HISTORY		from (date): 10/26/2011		to (date):	
2 DATE	3 DESCRIPTION	4 CARDHOLDER	5 AMT	6 CATEGORY	7 SUB-CATEGORY
12/7/2011	WENDYS #4710 QPROVO UT	CHRIS FARNSWORTH	\$ 18.49	Restaurant	Bar & Cafe
12/7/2011	WENDYS #4710 QPROVO UT	CHRIS FARNSWORTH	\$ 18.49	Restaurant	Bar & Cafe
12/7/2011	WENDYS #4710 QPROVO UT	CHRIS FARNSWORTH	\$ 18.49	Restaurant	Bar & Cafe
12/7/2011	WENDYS #4710 QPROVO UT	CHRIS FARNSWORTH	\$ 18.49	Restaurant	Bar & Cafe
12/6/2011	ELECTRONIC PAYMENT RECEIVED-THANK	CHRIS FARNSWORTH	\$ (53.00)	-	Payments
12/6/2011	MACEYS PROVO 0000000PROVO UT	CHRIS FARNSWORTH	\$ 5.14	Merchandise & Supplies	Groceries
12/6/2011	USPS 497176060504019PROVO UT	CHRIS FARNSWORTH	\$ 3.07	Business Services	Mailing & Shipping
12/6/2011	TOYS 'R' US MURRAY UT	BROOKE FARNSWORTH	\$ 67.21	Merchandise & Supplies	General Retail
12/6/2011	WAL-MART SUPERCENTERWEST JORDAN UT	BROOKE FARNSWORTH	\$ 54.66	Merchandise & Supplies	Wholesale Stores
12/6/2011	ELECTRONIC PAYMENT RECEIVED-THANK	CHRIS FARNSWORTH	\$ (53.00)	-	Payments
12/5/2011	THE HOME DEPOT 4416 PROVO UT	BROOKE FARNSWORTH	\$ 10.42	Merchandise & Supplies	Hardware Supplies
12/5/2011	WAL-MART SUPERCENTEROREM UT	BROOKE FARNSWORTH	\$ 29.53	Merchandise & Supplies	Wholesale Stores
12/4/2011	REDBOX DVD RENTAL 866-733-2693 IL	CHRIS FARNSWORTH	\$ 1.28	Merchandise & Supplies	Music & Video
12/3/2011	CARL'S JR #1101363 QPROVO UT	CHRIS FARNSWORTH	\$ 3.22	Restaurant	Bar & Cafe
12/3/2011	JCPENNEY STORE 0231 SANDY UT	BROOKE FARNSWORTH	\$ 5.45	Merchandise & Supplies	Department Stores

Screenshot 3: AMEX History Table

- b. Finds additional hidden data (category, subcategory) for that transaction and adds those to the spreadsheet as well.
  - c. Formats the data for ease of readability (for example, changes “&amp;,” to “&”)
6. Once all new transactions have been added to the AMEX History sheet:
  - a. Internet explorer is closed
  - b. The AMEX History table is resorted, putting most recent transactions at the top
  - c. A record of the import (Date of import, data description, and date range of transactions) is added to the “Amex Import History” table on the Cockpit.
7. Finally, a message box is displayed, telling the user that the “Amex Transaction Import is complete” and the user is returned to the Cockpit page.

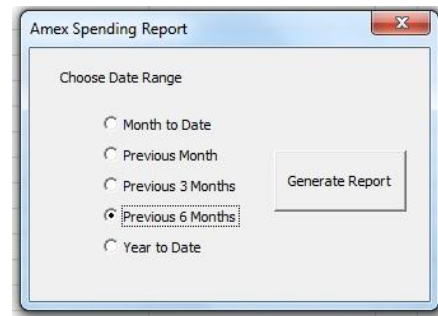
### Benefits of FEATURE 1:

By automating this process, it not only reduces steps and “clicks” on the user’s part, it allows the user to maintain a historical record of all transactions in one place as opposed to a separate statement for each month. This comprehensive record also allows for running reports *across* statement periods. Furthermore, it allows the user to update his/her records very easily at any given time. So if you want to remember how much you spent at the grocery store three days ago, you can see that easily – with one click of a button.

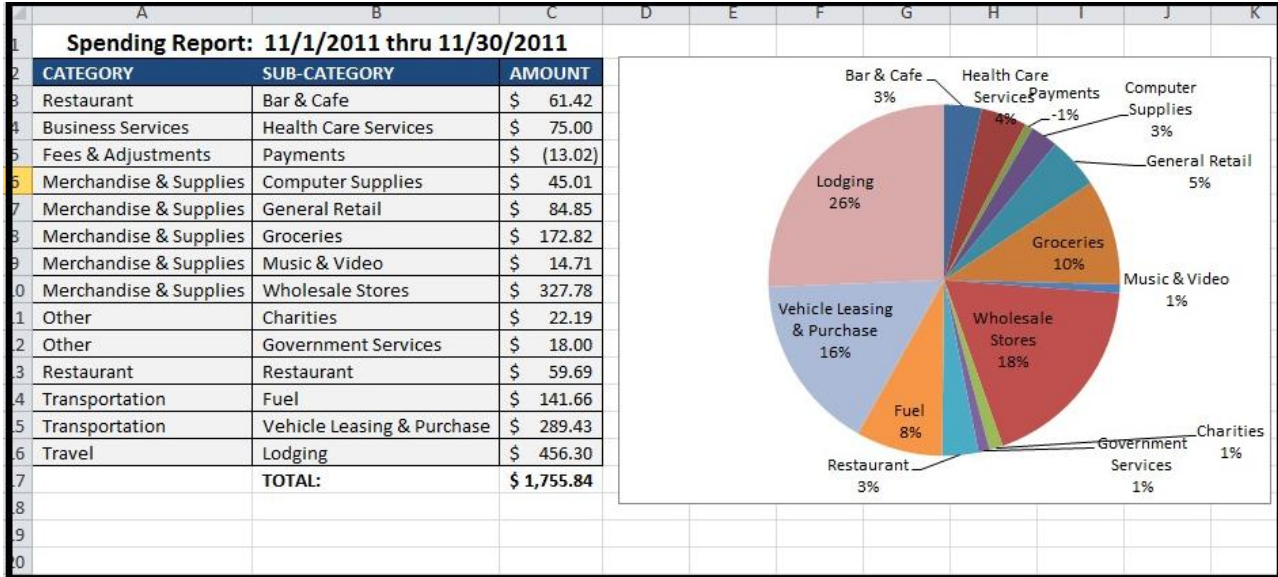
### FEATURE 2 = Generate Customized Spending Report(s)

Now that the transaction history is up-to-date, the tool allows the user to view spending habits during different periods of time. When the user clicks the “Generate Spending Report” button a program is initiated that does the following:

1. A form opens up asking the user to specify the date range for the report (see screenshot 4).
2. The user then chooses one of the following options:
  - a. Month to Date
  - b. Previous Month
  - c. Previous 3 Months
  - d. Previous 6 Months
  - e. Year to Date
3. Once the user has chosen one of the options, he/she then clicks the “Generate Report” button
4. The program records the *start date* and *end date* for the period specified
5. The “AMEX History” table is automatically filtered to show only transactions within the date range
6. The program then looks at all transactions within the date range, recording all categories and subcategories that appear.
7. A new worksheet is created and given a name to match the date range (i.e., “This Month” “Last Month”, etc.).
8. A list is created on the new sheet showing each unique Category: Subcategory combination (no multiple recurrences)
9. The list is automatically formatted and titled: “*Spending Report: (start date) thru (end date)*”



10. The program looks at each category group one at a time, scans all transactions within the date range (from the master “AMEX History” list), grabs the dollar amount for each transaction within that category, adds that amount to the total, and then displays the total for the period in the “Amount” column of the spending report (see screenshot 5)



Screenshot 5: Spending Report

11. A total dollar amount for the period is added at the bottom of the list
12. For reports spanning multiple months (*past 3 months, past 6 months, and year to date*), a monthly average is also displayed to the right of the table.
13. A pie chart displaying a proportionate breakdown of spending (including percentages) is displayed to the right of the table.

### Benefits of FEATURE 2

If desired, the user can run multiple spending reports from the cockpit. A new worksheet will be created for each new report, allowing the user to compare different spending reports and see changes in spending patterns over time. This significantly facilitates the budgeting process by providing the user with immediate data that would've otherwise taken more time, effort, and “clicks” to produce. The ability to use such reports in the budgeting process is critical to making good budgeting decisions. It is difficult to set realistic budget forecasts/goals without an accurate view of past spending patterns.

### Learning and Conceptual Difficulties

As I look back over the description of the tool, I can't help but think, “Wow. That *seems* simple enough. How in the world can something so “simple” be so incredibly difficult to create??” 😊 While the tool didn't quite turn out exactly as I had envisioned, I am still pleased with the results, and even more

excited about the new skills that building this tool allowed me to master. Among the difficulties encountered, and skills/lessons learned are the following highlights:

1. Roadblock: Bank Account Website Protection. I originally hoped to be able to import both my credit card transaction history (Amex) as well as my checking account transaction history (Fidelity) into one report; However, I was disappointed to discover that I was unable to get the tool to work with Fidelity's website. I tried several "fixes" to no avail. I later learned that it was because Fidelity has security software in place that can (somehow) recognize if it is a program versus an actual person trying to access the website. While this is comforting from a security standpoint, it is frustrating from a VBA standpoint.
2. Valuable Skill #1: Automate IEX. From this exercise I feel confident in my ability to write a program that automates internet explorer and finds/pulls the information I need (even from password protected sites). This is an extremely valuable skill that I'm confident will serve me well in my career.
3. Valuable Skill #2: User Forms. The ability to create forms that help the user input the required information is extremely valuable. It allows me to create tools that are simple to use. It won't require a lot of training/explaining to a new user. The form can guide them through the process, and the code can do all the heavy lifting.
4. Valuable Skill #2: Automate Formatting. While this may sound silly, prior to this class I spent (read "wasted") significant amounts of time formatting different spreadsheets to enhance the "readability" and simplicity of different projects. I now know how to automate many of those formatting steps, which I'm confident will save me quite a bit of time.