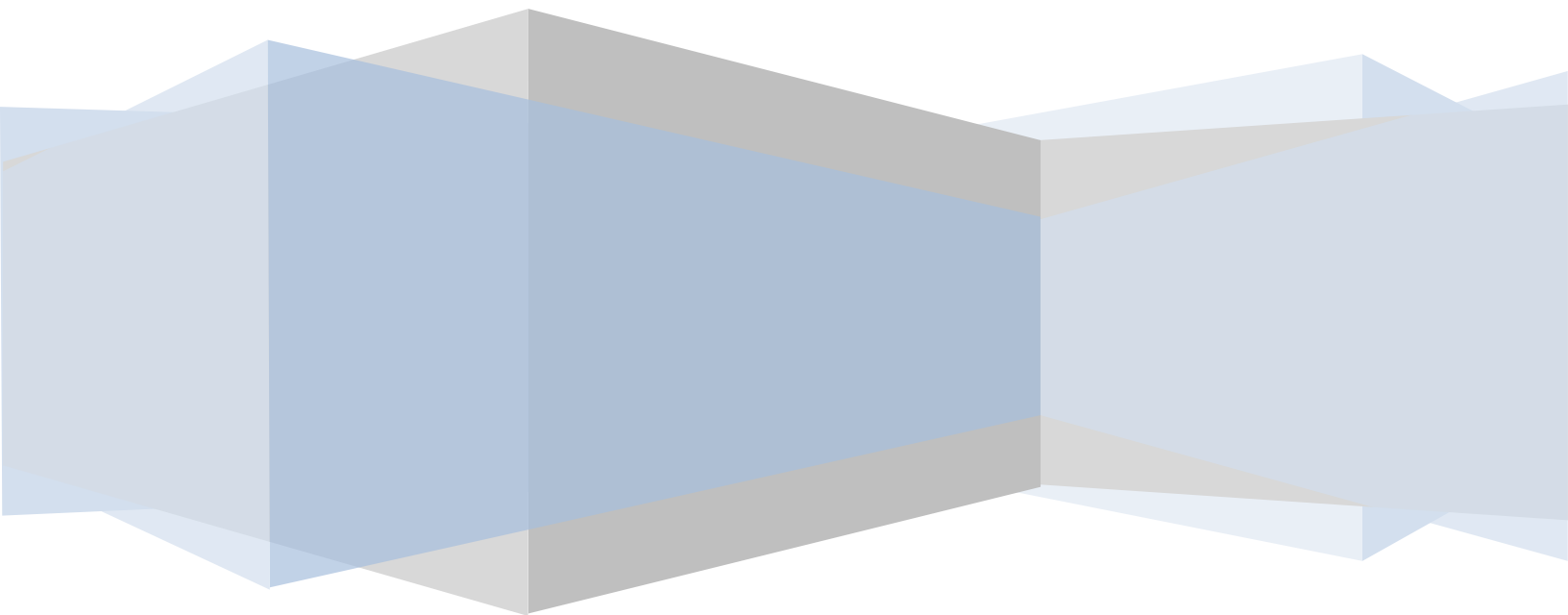# Automating the Classifieds

VBA Final Project

Donald Hicken
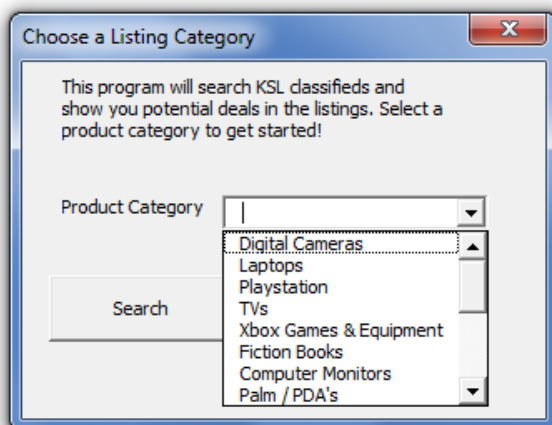
Donald Hicken

VBA Final Project Write-up

Executive Summary

I, like many people, enjoy browsing online classified listings and looking for a good deal. One problem I have noticed while looking at items on these websites is that I don't really know if many of the items listed are a good deal because I do not know what they may be worth. I have found that using the internet is a good way to overcome this problem, thanks to the existence of comparison shopping websites like Nextag.com and Google Shopping. Unfortunately, using these websites to find the value of individual items can be time-consuming, and I have found that I usually only do it for items that I am already familiar with. This prevents me from finding deals on products that may be similar but have a less familiar brand or model name.
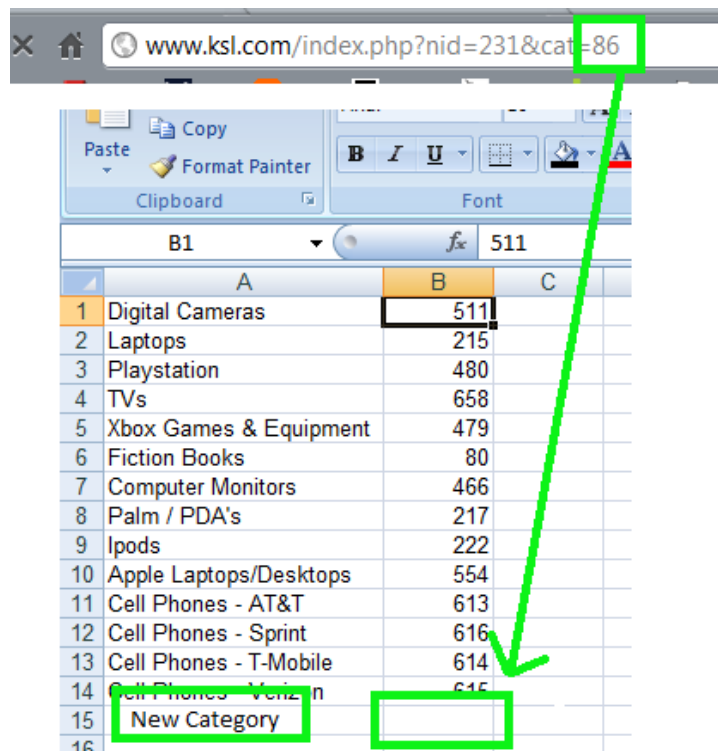
To resolve this problem, I determined to make a program using VBA and web queries to pull a list of recently listed items and look up their values on the internet. Since this is done by the computer, it is much faster than searching manually and allows me to more easily evaluate the listed price. For ease of evaluation, I have the results display in a spreadsheet along with the discount being offered from the average internet price. These discount percentages are highlighted in different colors to illustrate which listings are the best "deals."

Implementation

I decided to use my program to search the classified listings section of KSL.com, which is probably the most popular place to buy and sell items online in Utah. This site is broken into many categories, so I wanted to be able to easily choose which category to search. To do this, I made a combo box in the form where the user can select what category to search.

Since the KSL classifieds have many categories, and each user will have their own preferences, I made the category combo box fill by using the "Categories" worksheet in the workbook. All the user has to do to add categories to the program is add them to the worksheet, along with their KSL category number. (This number can be found by going to the category on the KSL website, then finding the number at the end of the URL.) The program is set up to fill the combo box with as many options as the user has entered in the "Categories" sheet.

To run the program for your desired category, just select the category from the combo box and click the "Search" button. If no selection is made, a message box will appear prompting the user to select a category to search.

The program then takes the corresponding category number and updates the existing web query on the "KSL" worksheet. The program finds the item title and listing price and brings them into our results section.

Search Results:

Listing Title	Potential Value	Listing Price	Discount from New
TWO BOOKS of the BAD AGENCY by SHERRILYN KENYON		$7	
DREAM WARRIOR' Dark-Hunter series by Sherrilyn Kenyon		$4	
ONE SILENT NIGHT' a Dark Hunter novel by Sherrilyn Ke...		$4	
SHERRILYN KENYON, 3 LEAGUE SERIES BOOKS		$10	
DARK HUNTER BOOKS THE COMPLETE SERIES, SHERRILYN KENYO...		$85	
Nora Roberts Cordina's Royal Family		$8	
One Second After by William R. Forstchen Hard Cover Bo...		$8	
Glen Beck The Overton Window Thriller Book		$10	
View Sonic E-Reader Brand New In Box**Must Sell**		$100	
BRAND NEW Paperback "for one more day" by Mitch Albom		$5	
Microsoft Office Excel 2007		$10	
Readers Digest condensed books		$20	
A series of unfortunate events & Chronicles of Narnia ...		$25	
Ellery Queen's "The 50 Best Stories" - Hardbound		$5	
Hunger Games 2 & 3 Hardcover, New Unopened		$15	

After the results are finished loading from the KSL web query, the program takes each listing and searches for the title using a web query connected to the Google Shopping website. For those items that are not found on the site, the program enters "Unavailable" in the "Potential Value" field. For those that are found, their average list price is entered into this field. Excel formulas are then run to compare the listing price to the average price for the product on the internet. By searching the Google Shopping website for the item, we are able to see an average price based on hundreds of listings from retailers around the country. Basically, this process answers the question, "how much could I buy this for somewhere else?"

Potential Value	Listing Price	Discount from New Item
$ 9.69	$7	$ 2.69
$ 46.69	$4	$ 42.69
Unavailable	$4	-----
$ 9.70	$10	$ (0.30)
$ 11.41	$85	$ (73.59)
$ 7.50	$8	$ (0.50)
Unavailable	$8	-----
Unavailable	$10	-----
Unavailable	$100	-----
Unavailable	$5	-----
$ 74.80	$10	$ 64.80
$ 32.60	$20	$ 12.60
$ 18.80	$25	$ (6.20)
Unavailable	$5	-----
$ 16.19	$15	$ 1.19

Finally, using Excel conditional formatting, the program color-codes each item's discount in order to quickly identify which items are selling for the highest percentage discount.

Search Results:

Listing Title	Potential Value	Listing Price	Discount from New Item	% Discount
TWO BOOKS of the BAD AGENCY by SHERRILYN KENYON	$ 9.69	$7	$ 2.69	28%
DREAM WARRIOR' Dark-Hunter series by Sherrilyn Kenyon	$ 46.69	$4	$ 42.69	91%
ONE SILENT NIGHT a Dark Hunter novel by Sherrilyn Ke...	Unavailable	$4	-----	-----
SHERRILYN KENYON, 3 LEAGUE SERIES BOOKS	$ 9.70	$10	$ (0.30)	-3%
DARK HUNTER BOOKS THE COMPLETE SERIES, SHERRILYN KENY	$ 11.41	$85	$ (73.59)	-645%
Nora Roberts Cordina's Royal Family	$ 7.50	$8	$ (0.50)	-7%
One Second After by William R. Forstchen Hard Cover Bo...	Unavailable	$8	-----	-----
Glen Beck The Overton Window Thriller Book	Unavailable	$10	-----	-----
View Sonic E-Reader Brand New In Box**Must Sell**	Unavailable	$100	-----	-----
BRAND NEW Paperback "for one more day" by Mitch Albom	Unavailable	$5	-----	-----
Microsoft Office Excel 2007	$ 74.80	$10	$ 64.80	87%
Readers Digest condensed books	$ 32.60	$20	$ 12.60	39%
A series of unfortunate events & Chronicles of Narnia ...	$ 18.80	$25	$ (6.20)	-33%
Ellery Queen's "The 50 Best Stories" - Hardbound	Unavailable	$5	-----	-----
Hunger Games 2 & 3 Hardcover, New Unopened	$ 16.19	$15	$ 1.19	7%

Learning Review

This project forced me to think through code in the VBA "language," which has been very difficult for me to understand. However, this project did increase my ability to understand it a great deal. I found myself writing a procedure the way I thought it would work from remembering commands, but when it wouldn't work I had to think all the way through it. I had a lot more success when I thought through the process and determined how VBA would understand what I wanted.

One barrier I ran into was that I originally intended to use Nextag.com for all of my pricing comparisons. After building a large portion of the project, I connected the code to search Nextag and found it to be extremely slow. The website's search ability is just very slow and it often would not find the item I had searched, which added to the issues with this site. After some time working on trying to make this process faster, I determined to instead use Google Shopping as my pricing comparison. Google Shopping performs the same action as Nextag (searching many online retail outlets for the item) but with bigger reach and much faster speed. The time required to complete this step of the process dropped by at least 90%, if not more, and the ratio of found items increased.

Another piece of knowledge I gained from this project was how to control more of the functions of Excel by using VBA. I learned how to use vlookup formulas, show/hide objects, work with the copy and paste mode, and other functions. Learning these items will be very beneficial to me as I use Excel in the future.

Conclusion

After much difficulty mixed with lots of trial and error, I am happy with the result I was able to produce. The tool can be very useful for someone who is looking for a deal more than a specific product, and can help them see a deal where they may not have thought to look before. I can see a lot of potential ways to add to the program, such as expanding the number of sites it has capability to search for listings, increasing specificity in the price comparison search, and expanding its abilities after the results are found. I will continue working on the project in the future as I think of new ways to use it, and as I learn new ways to use VBA. I am excited to have learned so many ways VBA can be used to execute commands without being limited to Excel, as I thought it was when I enrolled for the class.