

Washington State Sales Tax VBA Project

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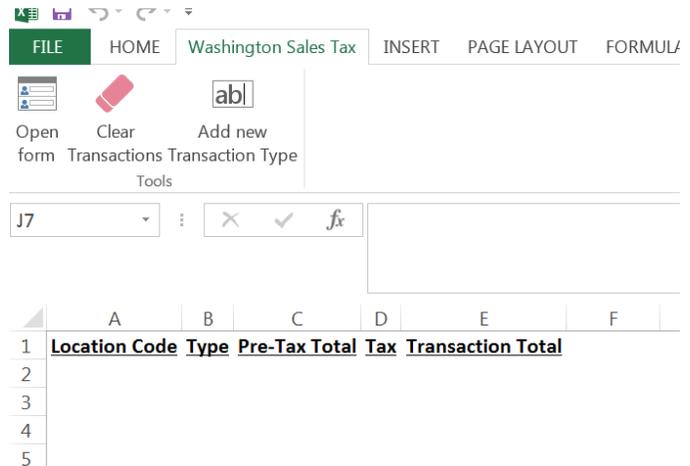
Executive Summary

This project focuses on calculating ever-changing Washington state sales tax for differing types of transactions. Recently, BYU and the LDS Church had to begin collecting tax for any items/services sold to anyone living in the state of Washington. This has been a big headache for lots of departments on campus because Washington State sales tax often changes every quarter and every city has a different rates. I currently work on in the Harold B. Lee Library and the individuals who do perform the sales don't understand how to look the tax up nor have the time. This spreadsheet allows then to do a quick calculation of the amount of tax that they should be charging on the transaction and allows the transactions to be recorded in the format that my office has to later convert it into to submit to the tax office. It is a made to be user friendly and so that anyone could use it and adapt it to the needs of their department quickly.

Implementation Documentation

Initial Page

The initial start page is a blank sheet that will be used to record the transaction that the user indicates at a later point. I created a set of buttons on the ribbon for simple user interaction under the "Washington Sales Tax" tab. As indicated in the picture. The Open Form button is the main button that allows the user to calculate the correct sales tax and record the transaction for reporting purposes. The clear transactions button clears the transaction tab because we report on a monthly basis it makes it simple to reset the data. The "add new transaction type" button, allows for new transaction types to be created. The transaction type is a determining factor of whether or not sales tax needs to be collected. We still have to report sales to the Tax department because they charge us a B&O tax but we don't collect this amount from the customer so it isn't factored into the final cost.



Open Form Button

The “Open Form Button” opens the “Washington State Sales Tax” form as shown off to the right. When this button is clicked it initially goes out to the web and downloads the sales tax rate table from the official Washington state government website. The data is hidden in a worksheet on the workbook.

As you can see you in the form it is pretty self-

Washington State Sales Tax

Transaction Type: Loan Replacement

Location (City): Seattle

Before Tax Total: 100.45

Calculate Tax Add Transaction to Spreadsheet

Tax Rate	0.095
Calculated Tax	\$9.54
Total	\$109.99

Washington State Sales Tax

Transaction Type: Book Loan Fees

Location (City): Aberdeen T.B.D.

Before Tax Total: |

Calculate Tax Add Transaction to Spreadsheet

Tax Rate

Calculated Tax

Total

explanatory, you initially select the transaction type that will determine whether or not we’ll need to collect sales tax or not . You’ll select the location (city) where the customer is located. Then you will enter the total of the transaction without any tax calculations having been added to it yet at this point. There a few very basic data validation checks on this field but they only checking to make sure that it is not blank and that it is a numeric value. Once the user Selects Calculate Tax it fills in the section below the buttons. This is indicated in the

screenshot below.

The tax rate has been pulled from the hidden data tab using the user’s inputs and has computed the tax that should be charged and the transactions total amount. At this point the transaction has not been recorded for reporting purposes. The user must click on the “Add Transaction to Spreadsheet” button for it to be added to report it to the tax office. The figure below is what the spreadsheet looks like after the button is clicked. You can see that the information provided is a little bit different then what was selected in the drop down menus, the tax office doesn’t really care about the city’s name it wants to know what its location code is that the government has designated, the type of transaction and the pre-tax total. The final two columns are just for additional information purposes.

Location Code	Type	Pre-Tax Total	Tax	Transaction Total
1726	Loan Replacement	100.45	\$9.54	\$109.99

The user is *not required* to click the calculate tax button first, by clicking on the add transaction to spreadsheet button it performs the same tasks as that calculate tax button prior to adding the transaction to the spreadsheet.

Add New Transaction Type

As was briefly mentioned previously the type of item that is being sold or the transaction type depends on whether or not sales tax must be collected from a customer. I wanted the user of the form to have the ability to add new types of transactions that the department or group may use so that they don't have to keep track of manually of which ones need to be collected or not. The HBLL only has four types of transactions but other departments may have too many to reasonably keep track of. The form below is what appears when the button is selected from the ribbon. The user then inputs the new Type of

Transaction into the provided text box, and selects the tax treatment of the new type using the radio buttons. There is no verification of the New name with previous types that have already been listed, the only verification is through the fact that one of the radio buttons must be selected in order for the new type to be created. Once the new type has been

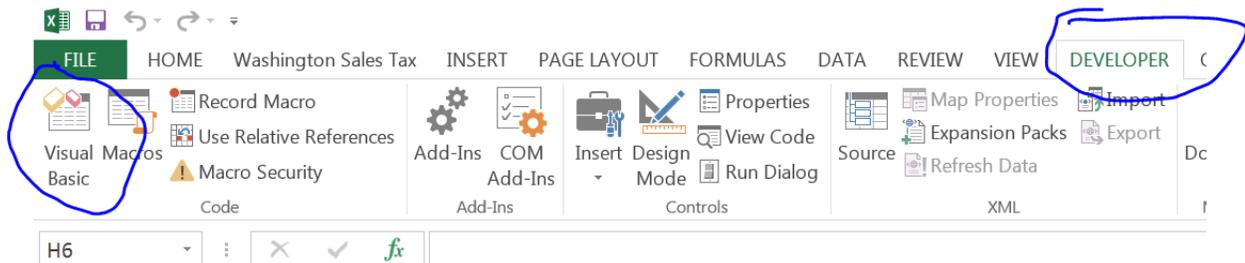
stored in the hidden type table the New Type Form closes and opens the main tax form for sales tax to be calculated and reported.

Clear Transactions

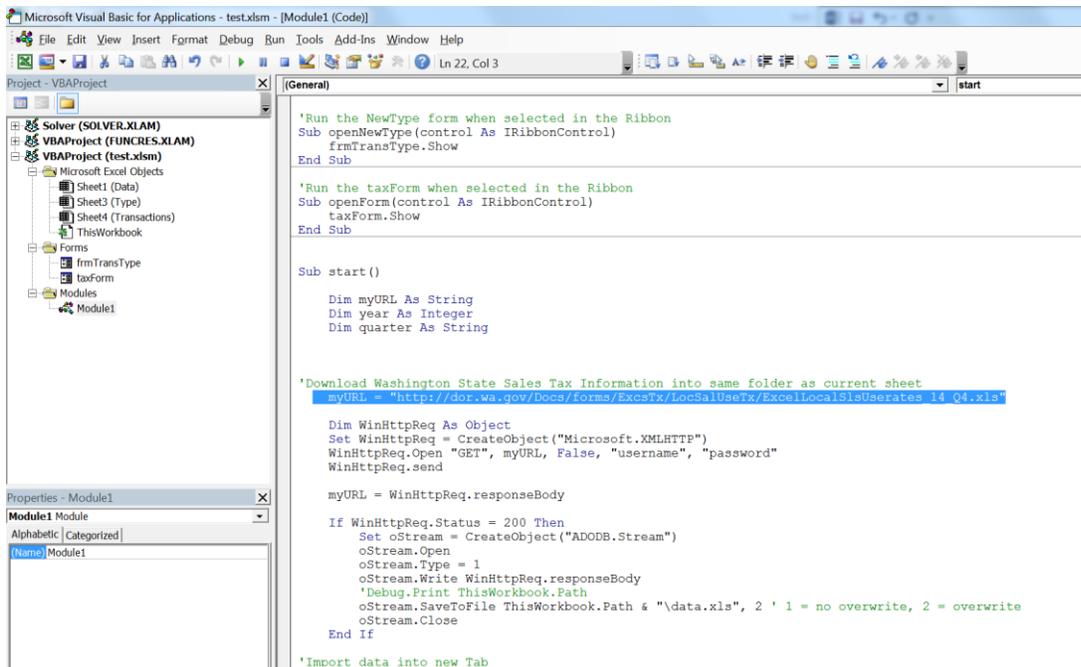
The clear transactions button does what you'd think it does, it clears all transactions that have been listed on the transaction sheet. At BYU these numbers are submitted to the Tax department on a monthly basis so there is no need to keep track of the information other than for the current month.

Updating Tax Information Link (MUST BE DONE QUARTERLY FOR ACCURATE CALCULATIONS)

Due to the fact that the naming conventions could change at any given quarter the link the Washington State Sales Tax Data must be updated on a quarterly basis (Jan, Apr, Jul, Oct) to ensure that proper tax rates are being used in the calculations. First, make sure to **save a backup copy** of the file somewhere in case this procedure does not work. In order to update the link you need to first go to the following website: http://dor.wa.gov/Content/GetAFormOrPublication/FormBySubject/forms_LSUExcel.aspx, right click on the link that will download the excel file and click "Copy link address." You now have the link to the excel file stored on clipboard ready to paste into the VBA code to use for download." Go the excel file, click on the developer tab and then click on the Visual Basic Button as seen below.



The visual basic window will appear, select the VBAProject("yourfilename.xlsm") on the menu on the left. Then click down into modules and double click Module1 to see the code behind the macro. You should have a screen similar to the one below:



The information highlighted in the screenshot above is where the link will be pasted to, you can see the link that was previously being used to download the data in parenthesis, highlight that information and delete it. Once you have the two parenthesis next to each other like "" click in between them and press ctrl + v or right click in between them and select paste. After you have done this your link should like

identical to above the only difference being the file will be named differently. Once you have done this click save at the top of the screen and close the VBA Window. You should now be able to run the macro without any issue.

Discussion of Learning and Conceptual Difficulties

This project allowed me to get a little more hands-on experience with user forms. They make data collection much easier, but I also realized how difficult it is to do data validation in a form. In actual excel doing data validation for a cell is a much simpler process and doesn't take much time to do at all. The same is true for other programming languages to create data validation like HTML it is pretty straight forward and allows you to specify how the data should be formatted and even mask the data to the correct format. I was unable to find such simple solutions for my project, most of the validation uses a number of if statements. I learned a lot and realized some that I needed to restructure my code to help validate the data so that it would perform the calculations correctly.

I also learned how easy it is to pull an excel file off the web and insert the data into an existing spreadsheet, although I did need the assistance of the internet to help with this principle it was much more straight forward and easier to customize then I had originally thought it would be. It has helped me to see future application of importing excel files from the internet in business settings in the future.

An issue that I faced and was never able resolve the time given me was how to pull the most up to date information from the internet for Washington State Sales Tax, the issue was that if they ever changed the name or their naming conventions of the spreadsheet it would not calculate correctly. So I just included how to update the link in the code in the implementation section so that others would have the ability to update it on their own. Overall this project was a great learning experience that helped piece together many things that we talked about in class into a final product.

Assistance

Other than the assistance received by googling how to download an excel file (not just a table) from the internet, this project was entirely done by me and no other help was received.