VBA – Final Project

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Executive Sumary

I wrote this project for a real world business problem using actual data (only a few lines have been modified as so to trigger at least one instance of each kind of error) from the Michael Foods Inc. (MFI) Blocked Billing Documents (BBD) process. BBD's are billing documents within SAP that are not clearing properly, when I worked at MFI I inherited the BBD's and they were a mess. There was no process improvement or education, through my hard work there was a 30% reduction, but they remained for a number of various reasons. I contacted a co-worker and asked for some live data and the documented standard reasons (this will not cover all instances of BBD's). The BBD's are supposed to be cleared every day, but there is a tendency to skip clearing BBD's as some of them hit the BBD list due to timing of behind the scenes process or individuals will catch their own mistakes and correct them. However, once a month all of the BBD's must be cleared in the accounting process known as "month end close," before lunch. Failure to close out the month before lunch results in having the comptroller, VP of finance or CFO make a personal introduction to you. Additionally, once a year there is a hard close on a Sunday. This is a time consuming process, and I wanted to automate the process to help cut the time to process BBD's.

Overview of System

I built three subs to accomplish this; the first two subs were built to hit a specific worksheet that contained a table with BBD errors and their reasons and actions to correct. I had to build the different tables as the second class of problem is where multiple conditions must be met for the error to be true, in this case if the values for three of the columns are blank, then we know what the error is. I have also built in a loop to run through this so MFI employees could add reasons in the future. I made it so if conditions for multiple errors existed it would check first to see if a reason had already been printed and if it was, it would ignore all subsequent matching error conditions. This is so the MFI employee can control the hierarchy of errors, although it is unlikely that multiple error conditions could co-exist, I had this built in as a failsafe. The third sub exists only to call the first two subs.

Learning and Conceptual Difficulties

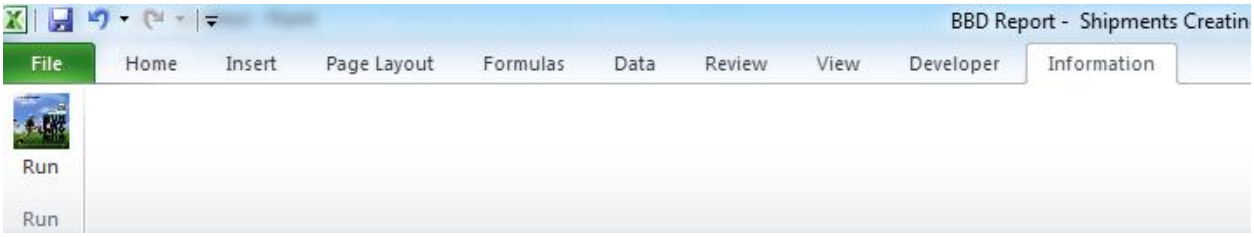
I think everything I used in this was used on earlier homework or project work. It was just trying it all together. I did have some trouble with Dimensioning, I wound up having to "nest" all the string Dims and I had row1 as an integer and I needed something that could hold a larger value so I used Long instead. I also had some mix ups with parentheses and if I needed quote marks within them. It just took a really, really long time.

Assistance

I got some advice from Alex Fuller who was able to help me understand which concepts were better (ie the code would have been much longer and uglier without his advice.) His total advice was less than 2 hours.

User's Guide

The user will first have to download the data from SAP (I didn't have access to an actual SAP system, so this first part is manual) into the tab named "BBD Report." Once that is done they click on the Information ribbon tab. In the Then click on the icon for the movie poster of "Run Fatboy Run", staring Simon Pegg, which you can see below.



This will cause sub BBD3 to run, which calls subs BBDSolver and BBD2Solver.

Step 1: BBDSolver will look at the worksheet "Problem Table" and start with the problem outlined in row 2. The hierarchy of identifying issues will be controlled by the order they are in on this worksheet, meaning if you want to update the hierarchy you just change the order on the worksheet, no change to the coding is needed. In addition it will run on a loop so adding to the issue list will generate addition reasons and actions.

	A	B	C	D	E
1	Column	Find 1	Up to	Reason	Action
2	Shipment	2440000	2449999	Suspended/Not Closed Out	To perform a Confirmation Reversal you need to do the following. Inform the shipping warehouse that you will be performing a Confirmation Reversal and that the bills might re-print and that any notes might be whiped out. ********** OR ********** Contact the warehouse and ask them why the shipment is not closed out. On Mondays you may have a number of Hall's not closed out (Sioux City may be an issue as well) because they are not on the system.
3	Shipment	480000	489999	CARTage shipment	Log into SAP, VT02n, enter the shipment number, look at the Spec. Process. And see if it states "CART". If it doesn't state CART you will need to
4	Carrier	600000	600000	Customer Pick Up	Manual processing as CPU, BBD email
5	Carrier	600097	600097	UPS	Log into SAP, VL03N, type in the delivery number, click GOTO up top, select Header, select Texts, click on Pick/Pack/Load Instructs (MGW), find the $ amount. Manual processing with the cost, BBD email.

The technical breakdown has the code looking at the first column to identify which column it is going to be looking in, and then the second and third columns to identify the range it is looking for in said column. The fourth and fifth columns are the reason code and the actions needed to resolve the issue. You will notice on the issue there are two reasons listed in the cell and two actions listed in the action cell. This is because the two different reasons share the same symptoms.

Setp 2: BBD2Solver will look at the worksheet "Problem Table 2" and start with the problem outlined in row 2. The hierarchy will run exactly the same way as in step 1. The reason for the separate worksheet

is that this kind of problem has a common symptom, but it needs to be present in multiple fields. In this case if the fields Shipment, Tran Plg Pt and Carrier are all blank the issue is Shell Egg. If only one of the fields being blank was symptomatic of the issue, I could have just created 3 new lines in the Problem Table worksheet. Therefore I created a separate sub to run this tab.

	A	B	C	D	E	F
1	Field1	Field2	Field3	Value	Reason	Action
2	Shipment	Tran Plg Pt	Carrier		Shell Egg	Log into SAP, VL03N, type in the delivery number and hit enter, look at the items, if they are all shell eggs then this goes to manual processing as SHELL EGG. Manual processing as Shell Eggs, BBD email.

While Steps 1 & 2 are running the columns “Reason” and “Action” are populated with the reason code and how to correct the issue that is found.