

### **Executive Summary**

The goal of this project was to create a tool that would simplify the process of collecting the data for month-end journal entries for the small business my wife does the accounting for. The business is called Sky Technologies and they are a retailer of Directv and Dish Network products. They have two locations, one in American Fork, UT and another in Las Vegas, NV. They specialize in doing large satellite installations and repairs. Some of their biggest clients include several Intermountain hospitals throughout Utah, Sundance Ski Resort, as well as several casinos in Las Vegas.

Currently in order to collect the data for month-end journal entries my wife downloads four different excel spreadsheets from the company's point of sale system, Agemni, performs some calculations and then combines the information from each of the spreadsheets into a single table. She then uses the numbers in this table to create the journal entries that go into Quickbooks. This journal entry records the Sales Revenue from Invoices billed to customers, Commissions received from both Directv and Dish Network, and the labor and equipment portions of Cost of Goods Sold. The system that I created pulls each of these reports from her password-protected account for the Point of Sale system, called Agemni. It then sums the necessary data from each of these reports and outputs it into a table that she can use to input the month-end journal entry into Quickbooks.

### **The Solution**

The solution I created is made up of three parts. The first is a user form that collects inputs from the user. This is information that is used to generate reports on the website. The

second part of the solution is the web automation. This is a program that runs completely in the background and that goes to the website, automates some navigation and processes and downloads the four essential reports. The third aspect of the solution is the compilation of the files and calculations to create the month end journal entries for the user.

### The User Form

Figure 1

To access the user form the first thing to do is click on the custom “Month End” tab that has been created on the ribbon (see



figure 1). Once on that tab there is a custom button called “Retrieve Entries” (See figure 2). By clicking this button, the user form will appear. This ribbon and button were

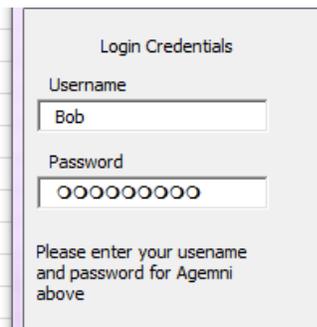
Figure 2

designed into the solution to make the retrieval of data user friendly and simple. The website and POS system that generates the reports requires various inputs. It requires first of all a username and password (see figure 3). It also requires a date range for which the reports will be generated. This information is inputted into the form



(see figure 4). The field for the password have a shape that covers the actual text being typed.

Figure 3 This hides the password for security reasons. Another feature of the form is that if



the username or password field are left blank then the user will be notified that they need to put in a username or password as pictured in figure 5. The portion of the form that has the user enter the date range also has controls in place. The style property of the combo boxes was set to “2” so the only options the user can choose are the ones in the

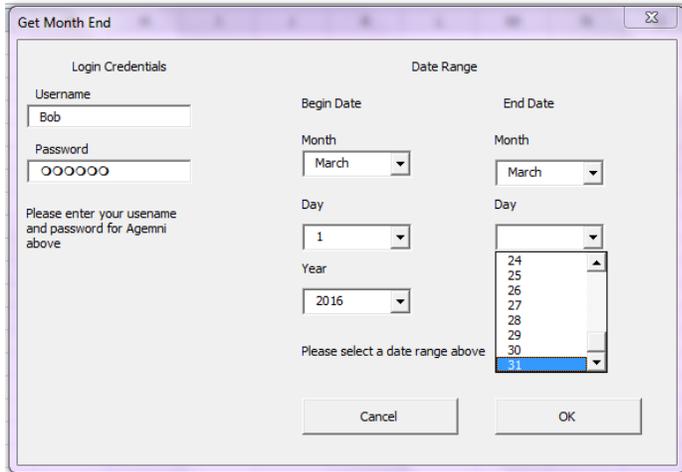


Figure 4

drop down. Behind the “Ok” button of the user form is the rest of the code which automates the gathering of data. The user form was chosen because it made inputting the necessary data easy for the user and the whole point of the project was to save time and trouble.

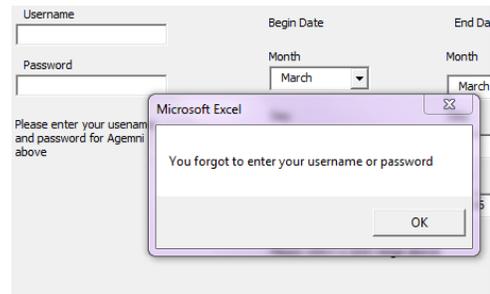


Figure 5

## Website Automation and Report Download

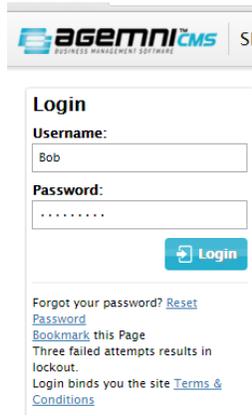


Figure 6

Because the POS system was

password protected and because once on the site fields needed to be inputted to collect the necessary information the web query tool was not going to work for this project. So I used the Agent class. After the user clicks ok on the user form and has entered the necessary data, the rest of my program takes over. It runs in the background but it is worth explaining what exactly

it does. The first thing that happens is all the sheets in the workbook are cleared of

data so it can be replaced

with the new information.

It then goes to the proper

website URL. It then uses the username and password from the user form and logs into



Figure 8

the website (see figure 6). From there it navigates through the site to the reports

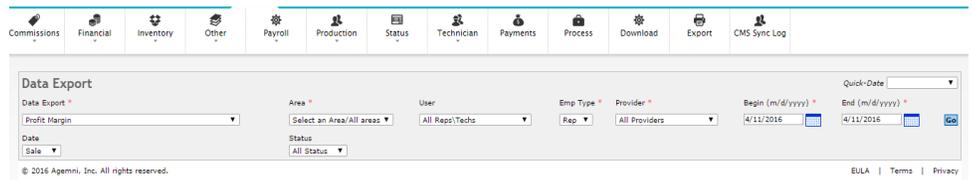


Figure 7

page (see figure 7). Once on the reports page it enters part of the data and reloads the page to get the other fields to show up. It then enters in the

data from the user form for the proper date



range. It also fills out the other various fields to generate the report (see figure 8). It

Figure 9

then downloads the report, opens it and then copies the information, no matter how large the range, and puts it into the project workbook on the proper tab for each supplier (see figure 9).

The program does this four times for the four different suppliers. This process would usually take my wife 20-30 minutes but this program reduces that time to about one minute. The automation tool was ideal for controlling a website and moving through a repetitive process like gathering these four reports.

### Calculations

Once each report has been placed onto each tab the program sums up various

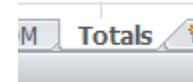


Figure 10

columns no matter their length and outputs the various journal entries for each supplier on the

totals tab (see figure 10). The user then puts these journal entries into QuickBooks for the month-

A	B	C	D	E
	WO Expected	Comm Exp	Pay(Lead,Rep,Tech)	COGS
DirectTV	\$150.00	\$955.00	\$250.00	\$896.98
DirectTV Commercial	\$8,287.96	\$300.00	\$0.00	\$12,239.96
Dish	\$1,318.69	\$2,698.00	\$125.00	\$1,890.97
Dish Commercial	\$9,064.20	\$1,189.00	\$0.00	\$1,329.00

end to record the sales and cost of goods sold for the month (see figure 11).

Figure 11

### Learning and Difficulties

The first thing I learned is that if you want to make a program for a particular task make sure you have plenty of time. There will naturally be roadblocks and things that come up that will slow

you down and a substantial amount of time is needed even for the simplest of programs. There were many small aspects of the project that were small mistakes but I ended up spending hours on them. Likely because I felt rushed and the stress made me forget simple things. I spent a long time on figuring out an “OR” statement only to figure out once I put my work in front of Dr. Allen that I actually just needed an “AND” statement. So time is key both to avoid stress and to give time to figure out the small bugs.

I also was able to get even more familiar with the Agent class which is a major reason why I chose this particular problem to solve. I learned how to read html better and how to find various things in the code. The web pages I was working on also had some JavaScript so I ended up learning a few things about how to work with a page that has some JavaScript.

I found that working with files, downloading them, copying their content and closing them can significantly slow down the program. Though my program takes less than a minute to run I still think it could be faster if I did not have to work with opening and closing files. In the future I will attempt to avoid that if I can.

It was difficult to think through where code should go in working with user forms. It was also difficult to make sure variable were defined in the correct place. I eventually figured it out but it took some time. It was also difficult to get my ribbon to work but it was mostly because I built my program in the workbook of a homework assignment (just so I could have the agent class in the workbook) and there was some leftover code hanging around that was messing up the code I had added. In the future I plan on starting fresh.

### **Assistance**

I did receive assistance from Dr. Allen but those parts are mentioned above, mainly the “OR” & “AND” problem and the problem with the ribbon not working.

## **Conclusion**

This was a great learning experience. A lot of practice with VBA is the only real way to learn all the small moving pieces and tools. I'm very glad I did this project and got more familiar with user forms, Web automation and working with worksheets and workbooks. I am also glad I was able to help my wife save some time. She is extremely busy and so even shaving off a little time here and there counts.