

# MBA 614 Final Project

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Library Circulation and In-House Report Builder

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## Executive Summary

The BYU library uses software called SirsiDynix to manage their circulation of millions of books. While SirsiDynix has been managing this need very well for the library, one place the software falls short is in the generation of reports. SirsiDynix does have the ability to generate scheduled reports, which the library takes advantage of; however, to this point the reports have not been very flexible.

My client for this project is John Christensen, Dept. Chair of the science library. Because of a background in statistics John fell in to the roll of managing the reports generated by SirsiDynix. There are two areas of data the library administration is really interested in tracking, general circulation and in-house usage. SirsiDynix is used to generate reports of this information on hundreds of call number ranges. While it is nice that SirsiDynix can generate these reports, they are not very well formatted and there is a lot of unnecessary information in them. For the past several years, once a month John takes half a day to filter through over 60 unformatted txt reports, extract the information needed and add it to two yearly summary reports.

For my project, I added tools to John's excel report to automate the entire process. Through the ribbon John can now launch a user form that allows him to select and view information about the reports he intends to import. Once he has verified the correct reports he can then chose which month he is dealing with and launch the upload. The entire process takes a job that used to require 5 hours a month and obtains the same results (in fact more accurate in some cases!) in just a couple minutes.

## Implementation

There are two reports that John needs to generate each month. The reports are formatted almost identically; however, one reports circulation numbers and the other in-house usage (see figure 1).

LEE LIBRARY CIRCULATION REPORT 2011/12 BY CALL NUMBER AND COLLECTION																	
Description	Call Number	Budget	2011				2012				Total	Circulating Inventory Sep-11	Reshelving Rate				
			Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr				May	Jun	Jul	Aug
GENERAL STACKS																	
Collections, Encyclopedias, Dictionaries, Indexes, Etc	AC-AL	34101	78	12	14	10	10	4							128	5644	2.27%
Museums, Collectors and Collecting	AM	34217	32	32	2	16	15	14							111	688	16.13%
Newspapers, Periodicals, Societies, Yearbooks, Est	AN-AZ	34101	8	17	30	24	33	15							127	3940	3.22%
Philosophy: Periodicals, Societies, Con	B1-B68	34105	12	14	10	0	8	5							49	1535	3.19%
Philosophy: History and Systems	B69-B9999	34105	212	361	367	214	324	330							1808	20295	8.91%
Logic	BC	34105	15	7	12	5	13	23							75	1250	6.00%
Speculative Philosophy	BD	34105	23	36	31	27	31	49							197	3674	5.36%
Psychology	BF1-BF1000	34110	387	445	487	245	446	350							2360	19033	12.40%
Parapsychology, Occult Sciences	BF1001-BF9999	34110	60	76	87	48	75	67							413	3136	13.17%
Aesthetics	BH	34105	36	33	39	15	14	24							161	1038	15.51%
Ethics, Social Usages, Etiquette	BJ	34105	70	79	64	40	61	71							385	4757	8.09%
Religions: Mythology, Rationalism	BL	34107	338	418	529	264	363	424							2336	13559	17.23%
Humanism	BM	34136	103	64	104	37	69	75							462	6892	7.67%

Figure 1 – Circulation Report

SirsiDynix generates over 60 reports each month for circulation and in-house usage. Each report contains information on the section of the library and then call number ranges within that section. The reports vary in call number ranges each month. If there is no usage for a certain range in a month, it will not appear in the report. Because of this, the sample reports worked with to build this solution did not contain a complete listing of all the call numbers. Another problem is that a librarian may ask for a range to be divided up creating two new ranges to report on. The solution had to handle new ranges and report back to the user that it had detected new ranges so they can be added to the report (see figure 2).

```
Report Log for Lee Charge Statistics LC A-BX jan05
Report statistics scheduled as Lee Charges LC A-BX jan05
Lee Unicorn Charge Statistics

Symphony <transact> <selection> 3.3.1 <started_on> <thursday:u>, <march:u> 1, 2012, 3:19 AM
$(3130)
CV RV RY
$(3132)<wednesday:u>, <february:u> 1, 2012.
$(3133)<wednesday:u>, <february:u> 29, 2012, 11:59 PM.
$(3135)
<transacts:u> $(1315)<library> <is> LEE.
206769 <transact> $(1308)
36582 <transact> $(1309)
Symphony <transact> <selection> <finished_on> <thursday:u>, <march:u> 1, 2012, 3:19 AM
Symphony <transact> <statistics> 3.3.1 <started_on> <thursday:u>, <march:u> 1, 2012, 3:19 AM
$(1322)
$(11031)
<call_nums:u> AC <to> AL, AM, AN <to> AZ, B 000001 <to> B 000068, B 000069 <to> B 009999, BC, BD,
BF 000001 <to> BF 001000, BF 001001 <to> BF 009999, BH, BJ, BL, BM, BP, BQ, BR, BS, BT, BV, BX
000001 <to> BX 000799, BX 008000 <to> BX 004799, BX 004800 <to> BX 008599, BX 008600 <to> BX 008619, BX
008620 <to> BX 008629, BX 008630 <to> BX 008639, BX 008640 <to> BX 008649 <selected>
<item_libs:u> LEE <selected>
<all:u> <item_types:u> <selected>
<locns:u> CIRC-DESK, CIRC-MEDIA, CIRC-SFTWR, HOLDS, LEE-LIB, LOCKED, LOCKED-A, LOCKED-F, LOCKED-Q, MAP, MAP-
AREA, MAP-CASE, MAP-F, MAP-FILE, MAP-Q, ON-SHELF, ON-SHELF-J, ON-SHELF-R, OVERSIZE, OVERSIZE-F,
OVERSIZE-Q, STACKS, STACKS-O <selected>
<us_zlibcode>
$(11032)<item_types:u>, $(11033)<call_nums:u>
$(11036)
36582 $(11042)
1 $(11043)<call_num:u>
32903 $(11044)<call_num:u>
5 $(11044)<P539:u>
320 $(11044)<locn:u>
333 $(11045)
Symphony <transact> <statistics> <finished_on> <thursday:u>, <march:u> 1, 2012, 3:19 AM
.report
.col 421,13r
.title
Lee Charge Statistics LC A-BX jan05
<produced:u> <thursday:u>, <march:u> 1, 2012 <at> 3:19 AM

.end
.heading
<report_for:3u>
<call_nums:u> AC <to> AL, AM, AN <to> AZ, B 000001 <to> B 000068, B 000069 <to> B 009999, BC, BD,
BF 000001 <to> BF 001000, BF 001001 <to> BF 009999, BH, BJ, BL, BM, BP, BQ, BR, BS, BT, BV, BX 000001
<to> BX 000799, BX 008000 <to> BX 004799, BX 004800 <to> BX 008599, BX 008600 <to> BX 008619, BX 008620 <to>
BX 008629, BX 008630 <to> BX 008639, BX 008640 <to> BX 008649
<item_libs:u> LEE
<all:u> <item_types:u>
<locns:u> CIRC-DESK, CIRC-MEDIA, CIRC-SFTWR, HOLDS, LEE-LIB, LOCKED, LOCKED-A, LOCKED-F, LOCKED-Q, MAP, MAP-
AREA, MAP-CASE, MAP-F, MAP-FILE, MAP-Q, ON-SHELF, ON-SHELF-J, ON-SHELF-R, OVERSIZE, OVERSIZE-F,
OVERSIZE-Q, STACKS, STACKS-O

<call_num:u>
<item_type:u>
.end
.colhead
BK 2HR-CKOUT BOOK BOOK-2HR CIRC-MEDIA LOCKED NON-CIRC REF-BOOK RESERVE-
SAMPLER SERIAL <total:u> <pieces_circ:u>
.end
AC 0 4 0 0 0 0 0 0 0 0 0 4 4
-AL
AM 0 14 0 0 0 0 0 0 0 0 0 14 14
```

Figure 2 - SirsiDynix Generated Report

The reports John receives each month the come in a large batch of txt files. The files have non-descriptive names, and are not sorted by type (circulation or in-house). Using the ribbon (see figure 3) John can select the type of reports he wishes to process.

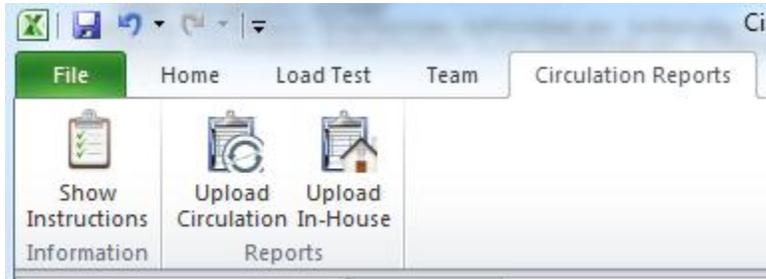


Figure 3 - Custom Ribbon

After selecting the type of reports to process the user will be presented a folder picker where he can choose the folder that contains all the reports for the month. Once the folder has been selected the VBA will parse information from all of them to determine the type of report, section, file name and title of the report. This information is then presented in the reports form (see figure 4).

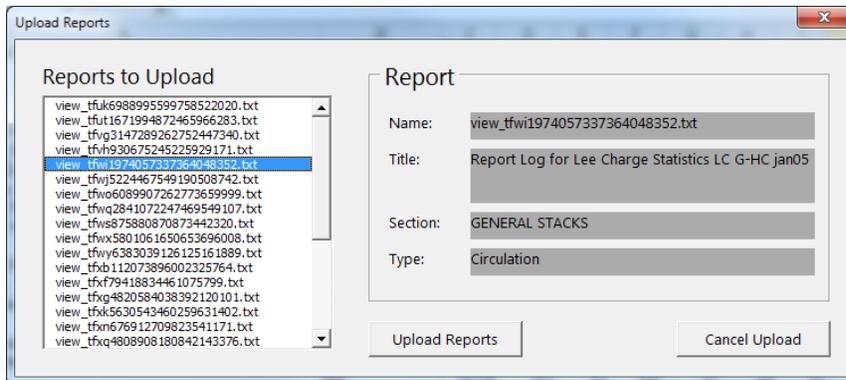


Figure 4 - Reports Form

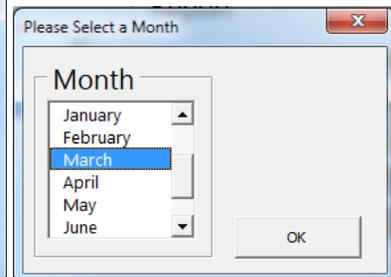


Figure 5 – Selecting a Month

The reports form is a good place for the user to validate whether or not the correct reports or all the reports are about to be processed.

Once the user has determined that the correct reports have been loaded and they select “Upload Reports”, they are presented with a form (figure 5) to select the month for which the reports represent. That’s it, after the user has selected the month the reports are processed and 5 hours of potential work is turned into two minutes of watching excel do its magic.

The above is a very simplistic explanation of how everything works. Another important element of the project is “Call Number Mappings”. Some of the call numbers that are presented in the txt reports were not formatted in the way John wanted to present them in his final report. For example, the txt report may have a call number range PQ000001-PQ009999. John would typically present this call number as PQ1-PQ9999 in the final report. In order for the VBA to know about these mappings there is

a spread sheet of mappings where the user can list how SirsiDynix refers to a range and then how they want to refer to a range. Because these call number mappings are rarely changed often, John decided a spread sheet of mappings would meet his needs. Now John can easily update, add and delete mappings as the SirsiDynix reports change in the future. If the upload process detects a call number that has not been listed in a mapping the user is presented with the following form (figure 6) informing them of mappings that need to be added. Selecting one of the mappings will let the user know which report the mapping was found in and what section it should be in.

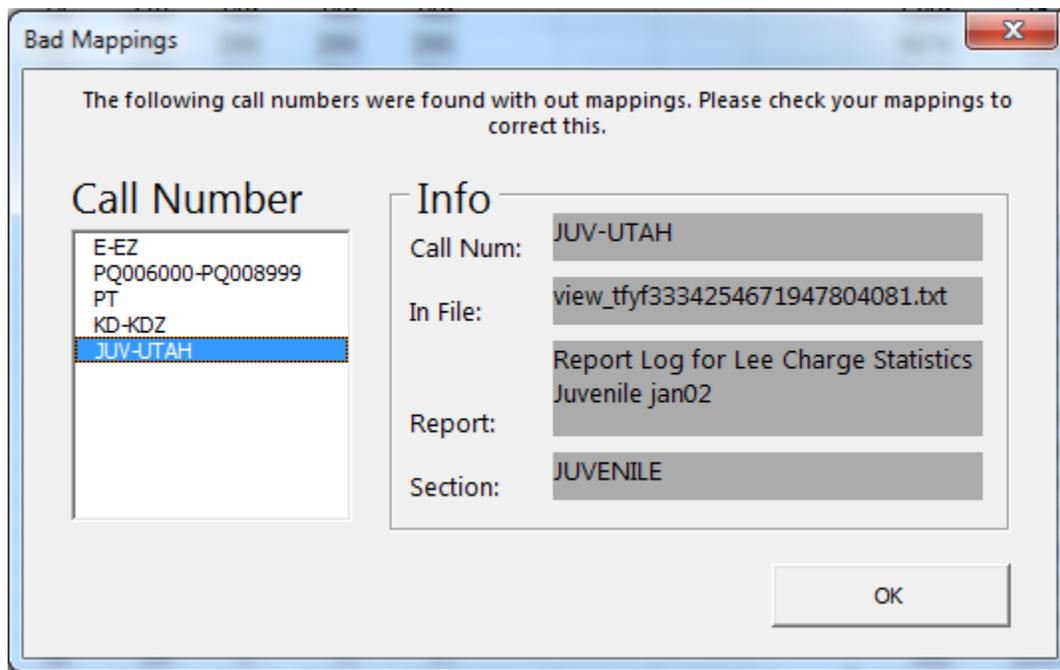


Figure 6 - Bad Mappings

## Lessons Learned

This was a good project for me to go through, there were many challenges that I ran into. The following are some of the concepts that I learned or gained a better understanding of in VBA:

- The scripting library, to take advantage of the dictionary structure.
- The file system library, to use streams to read lines of files and also to import the reports
- Macros! I had used macros in the past but I really found out how powerful they can be. I used them heavily to record skeleton code for importing and delimiting each of my txt reports and finding text with in the reports.
- Class modules. I used class modules to create my own objects allowing my program to be more object oriented.

The project was completed pretty thoroughly, the only other piece of functionality I considered adding was user forms to create the mappings. However, John decided that because the mappings are so rarely changed he didn't feel like the value add was large enough to justify the extra work.

Over all the project went well and the concepts learned will greatly help me in the event that I am able to use VBA again in my future career.

## **Assistance**

I was able to complete this project mostly on my own. Dr. Allen pointed me in the right direction with customizing the ribbon; however, all code was my own.