

Title of Liberty Press CRM

Executive Summary

My dad started a publishing company called Title of Liberty Press. He sells books through different distribution channels, mostly online websites. In order to make sure all orders are fulfilled in a timely manner, he regularly checks the different websites to see if new orders have arrived. Because he uses a variety of distribution channels (different websites), he does not have a master list of customers and there is no way to know how much money he is making or other important business information.

The program is designed to pull information from the internet and input the information in an Access database. The system will log in to Amazon's Seller central and pull all orders from the past 7 days. If these orders do not currently exist in the database or the status has changed since an order was entered into the database, my program will pull the customer and detailed order info put it in the database. Next, the program will pull orders from titleoflibertypress.com and insert new orders into the database.

With the database up-to-date, there are several queries that the user can run to facilitate decision making. There are 3 default queries available and the ability to create additional queries if desired. The 3 default queries are: 1. Orders to be Shipped, 2. Customer List, 3. Sales Data (with a pivot table created to make it easy to analyze the sales information). I recognize that the user may want to run other queries on the data, so the last button on the ribbon displays the list of available queries contained in the access database.

Implementation Documentation

The project has 5 major functions that correspond to the buttons included in the DB Tools tab in the ribbon (See Exhibit 1). As noted in the label for the group, all of these buttons interact with a database. This is an Access database that needs to be in the same location as the excel workbook. The data model for this database can be found in Exhibit 2. The database is a major part of this project because it is the only place where the user can query and get information about the business as a whole.

The Update DB button will connect to the different websites and update the access database with any changes having occurred since it was last updated. It is always smart to update the database before any of the subsequent queries are run to ensure the most current data is being used. The New Orders button will query the database for any orders that exist, but have not yet been fulfilled. This list serves as a to-do list for the user so they know which books have been ordered and where they need to be delivered. The third button queries the financial information and inputs the data into a pivot table for further analysis by the user.

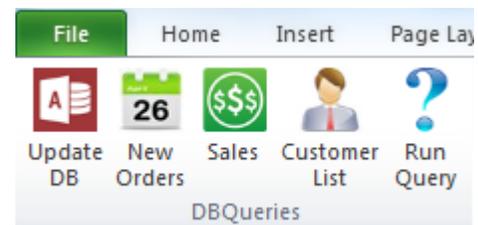


Exhibit 1

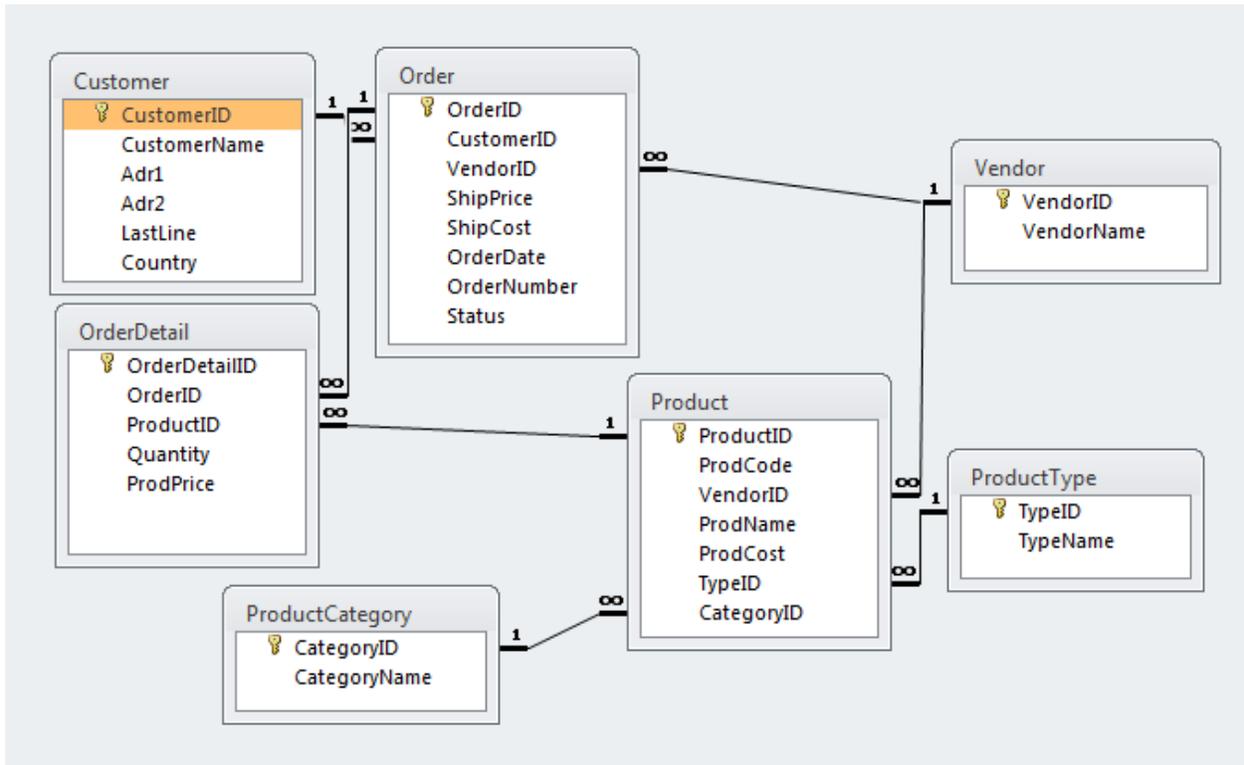


Exhibit 2

The Customer List button will pull a customer list that the user can use for marketing purposes when a new product comes out that might interest the customer. The last button allows the user the flexibility of pulling whatever information they want out of the database. The Run Query button pulls up a user form that has a combo box with all the saved queries in the Access database. This means if the user has the need for a query other than the defaults they can create it and then use this button to run the query.

A more technical explanation of each of the buttons follows:

UpdateDB

The program will first go to Amazon’s Seller Central website and login with the user-provided credentials (See Exhibit 3). After login is successful the program moves to the orders page which is set to pull all orders that have occurred in the last 7 days and are not pending. (This can be easily changed to fewer days if it appears that it is taking too long to process the orders.)

The form contains the following elements:

- Title: Sign in to your account
- Field: E-Mail address:
- Field: Password:
- Button: Sign in
- Links: [Forgot your password?](#) | [Help](#)

Exhibit 3

The program will pull the order number and status from the webpage (See Exhibit 4) and insert the information into a new worksheet for further reference. The order number and status will then be checked against the database to see if the order exists and if the status has changed since the database was last updated. If there has been a change to the status or the order is new then the program will pull

the order details so that all new information can be added to the database. The order details are in a separate site so the program uses the order number found on the order summary page to pull up the order details. This is done by inserting the order number after orderID in the URL of the details webpage (See Exhibit 5). The order details webpage contains the customer information and details about the products sold. This is the information that needs to be stored in the database. The information is pulled and also added to the worksheet.

All orders placed in the last 7 day(s) Clear all filters						
Orders 1 to 5						
Print packing slips for selected orders 60						
Order Date	Order ID/Product Details	Contact Buyer	Billing Country	Shipping Service	Status	Delivery Date
Apr 13, 2013 1:44:42 PM PDT	110-0184432-7641876 The Covenant, Lincoln, and the War (The Covenant) [Paperback] [2012] Ballard, Ti... QTY: 1 ASIN: 0988375109 SKU: N1-55WW-XU1P	Bradi Saunders	US	Standard	Unshipped (1)	Apr 19, 2013 to May 6, 2013
Apr 7, 2013 4:56:33 PM PDT	112-4021367-1028244 The Covenant, Lincoln, and the War (The Covenant) [Paperback] [2012] Ballard, Ti... QTY: 1 ASIN: 0988375109 SKU: N1-55WW-XU1P	Michelle Pack	US	Standard	Shipped	Apr 12, 2013 to Apr 29, 2013
Apr 7, 2013 12:45:13 PM PDT	109-0564309-3675412 The Covenant, Lincoln, and the War (The Covenant) [Paperback] [2012] Ballard, Ti... QTY: 1 ASIN: 0988375109 SKU: N1-55WW-XU1P	Patricia Glenn	US	Standard	Shipped	Apr 12, 2013 to Apr 29, 2013
Apr 7, 2013 12:11:09 PM PDT	108-5592546-9972215 The Covenant - (2 Volume Set) V1 The Founding; V2 Lincoln and the War (The Coven... QTY: 1 ASIN: 193773546X SKU: A5-OXSK-L2HT	Elizabeth J Buebe	US	Standard	Shipped	Apr 12, 2013 to Apr 29, 2013
Apr 7, 2013 11:29:12 AM PDT	111-8144545-1128209 The Covenant - (2 Volume Set) V1 The Founding; V2 Lincoln and the War (The Coven... QTY: 1 ASIN: 193773546X SKU: A5-OXSK-L2HT	ATHENA WARDLE	US	Standard	Shipped	Apr 12, 2013 to Apr 29, 2013

Exhibit 4

Product Details						
https://sellercentral.amazon.com/gp/orders-v2/details/ref=ag_orddet_cont_myoi?ie=UTF8&orderID=110-0184432-7641876						
Order ID: # 110-0184432-7641876 Print order packing slip						
Your Merchant Order ID: # none saved Edit						
Shipping Address: Bradi Saunders 215 N 375 W Morgan, Utah 84050		Purchase Date: April 13, 2013 1:44:42 PM PDT		Order Totals		
Expected Ship Date: Apr 15, 2013 to Apr 16, 2013		Estimated Delivery: Apr 19, 2013 to May 6, 2013		Items total:		\$21.49
Shipping Service: Standard		Contact Buyer: Bradi Saunders		Shipping total:		\$3.99
Billing Country: US				Grand total:		\$25.48
The Covenant, Lincoln, and the War (The Covenant) [Paperback] [2012] Ballard, Ti...		Status Unshipped		Quantity Ordered 1		Quantity Shipped 0
Quantity: 1 Merchant SKU: N1-55WW-XU1P ASIN: 0988375109 Listing ID: 1029MLEGJ8K Order-Item ID: 44466549841626 Condition: New Comments: New direct from Publisher.				Price \$21.49		Total Subtotal: \$21.49 Shipping: \$3.99 Total: \$25.48
Total Charged to Customer:						\$25.48

Exhibit 5

A similar organization exists for the Title of Liberty Press website and it will be formatted the same way on a different worksheet allowing for one process to upload the data to the database (See Exhibits 6-8). Now that the data is in the correct format to be entered into the database, the customer information is imported to the customer table if they don't already exist in the database. With the customer info imported, the order can be entered and a relationship is built between that customer and the order. Now that the order exists, the last piece of information to be input is the details of products purchased in that particular order. The quantity, sale price, and product are each entered with a connection to the order so that all of the information from

the website is accurately collected in the database. To make sure that the user is kept aware that the program has not crashed, a progress bar is displayed that shows the status of the update (See Exhibit 9).



Exhibit 6

Orders

All Orders (14) | Pending (6) | Completed (8)

14 Orders \$0.00 Total Sales \$0.00 Average Sale Search Orders

Delete Pending Update Show All Orders Filter 14 items

Order	Name	Destination	Transaction	Date	Total
<input type="checkbox"/> Order #201200047	Kathleen Johnson	Moline, IL — US	PayPal Advanced	2013/04/11 Pending	\$51.25 Invoiced
<input type="checkbox"/> Order #201200046	Margie Schuler	Moline, IL — US	PayPal Advanced	2013/04/11 Pending	\$25.63 Purchase Order
<input type="checkbox"/> Order #201200045	Phyllis McMurray St. Mary Monastery	Rock Island, IL — US	PayPal Advanced	2013/04/10 Pending	\$25.63 Invoiced
<input type="checkbox"/> Order #201200044	CHARVET CIRAOLO	santee, CA — US	PayPal Advanced	2013/04/04 Pending	\$76.88 Invoiced
<input type="checkbox"/> Order #201200043	James A Castrey	Bettendorf, IA — US	PayPal Advanced	2013/04/04 Pending	\$25.63 Purchase Order
<input type="checkbox"/> Order #201200042	JILL HUGHES	Decatur, IL — US	PayPal Advanced	2013/04/03 Pending	\$102.51 Invoiced
<input type="checkbox"/> Order #201200041	Todd Reynolds	La Canada, CA — US	PayPal Advanced	2013/03/19 Completed	\$128.08 Invoiced
<input type="checkbox"/> Order #201200040	David Jones	Menasha, WI — US	PayPal Advanced	2013/02/26 Completed	\$25.62 Purchase Order

Exhibit 7

Sales

The program will run a query that calculates the profit on each order by summing the revenues and subtracting the costs. The output of this query will then be displayed in a new worksheet labeled "Sales Data." The headers will be the same as the database headers. A progress bar will display the progress of the import in case there are many sales that take a long time to import. Once these sales are imported into the worksheet a pivot table is created from the data that will default to the profit received from shipped orders. The data is displayed by month and year columns, with products by vendor for the rows. The pivot table allows for quick analysis of how the company is performing (See Exhibit 10).

Status		Shipped						
Sum Profits	Column Labels	2012		2013			Grand Total	
		Nov	Dec	Jan	Feb	Mar		Apr
Amazon		348.82	332.93	129.61	223.57	53.61	78.71	1167.25
The Covenant - 2 Volume Set			33.17	94.21			60.48	187.86
The Covenant, Lincoln, and the War		327.99	224.6		38.92	35.38		626.89
The Covenant: One Nation Under God		20.83	75.16	35.4	184.65	18.23	18.23	352.5
ToLP			17.54	14.47	17.44	97.67		147.12
The Covenant, Lincoln, and the War			17.54	14.47	17.44	97.67		147.12
Grand Total		348.82	350.47	144.08	241.01	151.28	78.71	1314.37

Exhibit 10

Customer List

The program will create a new worksheet labeled "Customer" and put the information pulled from the customer table. This will create a list that can then be used for direct marketing about future products that are on their way.

Run Query

The database contains information that has the potential to be displayed in many useful ways. However, during the current early stages of the company, it is difficult to predict which information displays will be the most relevant going forward. To help deal with the uncertainty of future needs the program will show a user form containing a combo box populated with the queries contained in the Access database (See Exhibit 11). This allows the user to create any query desired, save it with an appropriate name, and run it from this program.

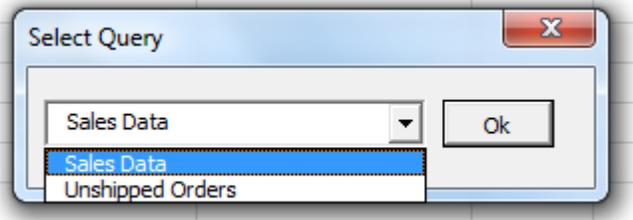


Exhibit 11

Learning and Conceptual Difficulties

I have done a few programming projects for work, but never anything involving the internet or databases. I wanted to do something that would challenge my abilities and I feel that this project did that for me. I learned a lot about the way the internet works with this project. I also learned a lot about designing a database and the importance of developing a correct data model before going forward with the project. I originally just had an order table, but I quickly ran into a lot of complications dealing with orders that had multiple products. I was really struggling to capture any order with multiple products until I showed my data model to a professor who explained that I needed an order details table to capture these transactions properly. I also learned that most problems can be solved with a quick Google search.

When I first accomplished the task of pulling orders from Amazon I pulled in the whole web page into an excel worksheet and then formatted the worksheet. Then I used the information obtained to pull the rest of the customer information and detailed order information. After all of the information was obtained I then checked the database to see if the order existed and added new or altered data to the database. I thought this was the most logical way to approach pulling the data into the database, but after showing the project to my dad his reaction was that it took too long to update the database.

With this criticism, I decided to find a way to make the program faster and changed the order of the procedures. I checked the database against the order before pulling the customer and detailed order info because I realized that loading websites was the slow part of the process taking several seconds for every webpage loaded. Connecting and running a query on the database only took fractions of a second so this change greatly reduced the time it takes to check for new information to upload to the database.

I ran into a roadblock when trying to pull queries that exist in Access into a combo box for the user to select. I was trying to access the msysobjects table which contains information about all the objects in the access table, but for security reasons I was restricted from reading the values in that table. I came up with a workaround that would require the user to click a button to run a macro to recreate a table, after they added a query to the access database. I did not like this solution and so I kept searching for a better solution. Eventually I found an explanation about using ADOX.Catalog to query the table names contained in the database and modified it to retrieve the queries. This removed the need for the user to click the button to update the table containing all the query names.

Assistance

I borrowed heavily from Professor Allen's Internet Explorer agent to pull information from websites, and used the code provided in the database project to run queries on the access database and to create the pivot table. The modified ribbon was created using the ribbon wizard workbook provided by Professor Allen. I received some help from Professor Summers (my database class teacher) for help with my data model and understanding how the database should be arranged. There are some parts of code that I found on the internet and modified to

meet my needs. Besides these explicitly stated instances the rest of the code was completed through my effort and understanding gained throughout the course of the semester.