SCHOOL OF ACCOUNTING AND COMMERCIAL LAW

ACCY225: INTRODUCTION TO ACCOUNTING SYSTEMS

Trimester 3, 2020

Lab 2 & 3: Introduction to Excel

Objective of this cyber lab assessment:

At the end of this lab, students will:

1. Demonstrate high-level knowledge of the structure of Excel software as a tool for processing business transactions, and
2. Demonstrate an understanding of the limitations and the mitigating controls required to enhance transaction processing using Excel.

We expect that during the cyber lab:

1. The tutor will provide a brief demonstration of the software, and
2. Students will complete the required transactions as part of their assignment.

Note: This cyber lab assignment will *be submitted online via Blackboard as part of the individual lab assignment (by 5:00 pm on Friday, 29 January 2021)*. Marks will be given for satisfactory completion of the assignment.

Lab 2: Introduction to Excel

Lab Description

Assume that you are a new staff member in a small retail firm. The other employees have very limited technology skills, and the firm has no formal system for creating or recording purchases. Currently, they just scribble purchase orders on random pieces of paper. Over the past several years, the firm has made many errors when recording its payables, and many bills have not been paid on time.

Being an energetic and skilled new member of the firm, you offer to develop a purchases system. You suggest that this system could be constructed using Excel (a program that is currently in use on all of the firm's PCs and is used by most employees). The system will allow for easy entry of purchase orders, which can be mailed to vendors. The system will also keep track of payables and indicate when each account should be paid. You will also create some internal controls (general and application controls) for this new system and make it user friendly.

Part A: Prepare the purchase order form

1) To get an idea of the form's design before you begin, examine a previous finished form (Figure 1, at the end of this document). Do not copy the data in this form – make up your own.

2) Select cells B2-M9 and *Merge* the cells. Now go to the Insert menu and select *WordArt* to create a logo for the business name. Do not use all of the space in the merged cells. Now click on *Insert* and select *Text Box*. Put the text box in the free area in your merged cells. Type your own company name and address. On the last line of the text box, type *Purchase Order*. Format the text as you desire.

3) Merge cells B12-M14. Type the words "Vendor Information". Make the text centred, bold, and a large font.

4) Create the vendor information section according to the example. Underline cells using the border button in the Font sub-menu.

5) Enter the "Order Information" heading and format it the same as "Vendor Information." Enter the order information details as in the example.

Input Formulae to the Purchase Order and Create Vendor and Price Lists

1) You want the purchase order form to automatically fill in all the vendor information based on the name of the vendor input to the order form. This is your first input control, helping to prevent input errors on many parts of the purchase order. You will accomplish this by creating a valid vendor list on another sheet. This is a list of vendors that have been approved by management. We will only allow orders to be made to these vendors. Notice that this will prevent errors in order addresses and prevent fraudulent orders. Name a sheet "Vendors" and create a table that looks like the example in Figure 2. Also, create a few companies of your own and fill in their information in the vendor table. The vendor table is basically a list of all the vendors that sell products to the client company. Sort the table by vendor name.

2) Prices will also be filled in automatically when an item number is entered into the purchase order form. Name a sheet "Prices" and create a table with headings identical to those in Figure 3. Enter details for five products in your table with your own descriptions and prices. Choose products suitable to the company you named in Part A, step 2.

3) In order to automatically fill in data on the purchase order form, you will use *VLOOKUP* functions (which can be accessed in the *Formula* menu within the *lookup* and *reference* functions). Users will input the company name, and all other cells related to the company will have a *VLOOKUP* function.

   When you create the functions to fill in vendor information, refer to the cell where the company name is entered into the purchase order when you are asked for the lookup value. For the table array, choose all data from the vendor table, but not the headings. For the column

index number, type the column number (this is the column number in your table, not the column heading at the top of the sheet) where the specific data field you want to retrieve is located. For example, when you create a *VLOOKUP* function in the Contact cell, you would enter "2" for the column number, because the Contacts are listed in the second column of the data from the vendor table.

Notice that the only portion of the *VLOOKUP* function that changes for the various vendor information fields is the column number. Hint: this means that if you create absolute addresses for the other two references in the *VLOOKUP* function (i.e., the lookup value and the table array) you will be able to copy this formula to many cells, and you will only have to alter the column number.

4) Now make sure that these formulas are working. Simply type in a company name on the purchase order form (you must use a name that is in your vendor list) and all of the #N/A cells should be filled in with the correct data. (Note: your valid vendor list and product price lists must be sorted in alphabetical order). Notice that your cells will have #N/A in them before you input a company name, whilst they are blank in the example below. You will make this look better in the next step.

5) Filling in the order information items also requires VLOOKUP functions. The description and unit price fields will be filled in automatically when you enter an item number. So, for these VLOOKUP functions, you will refer to the cell where the item number is entered for the lookup value. The table array will be the prices table, and the column index number will again correspond to the column that matches the data you wish to pull out of the prices table.

Notice again that #N/A does not appear on the example sheet for the unit price and description. This is because it uses nested VLOOKUP function inside an IF function. This IF function tells Excel not to show anything into the description or unit prices cells when the item number cell is blank. When the item number cell is not blank, the IF function uses the VLOOKUP function to fill in the cells.
Hint: an IF function looks something like this
=IF(C33="","",VLOOKUP(C33,Prices!$B$4:$D$6,2))

In this example, C33 is a cell where the item number is entered, and the VLOOKUP function is retrieving information from the second column of the prices table. The double set of quotes is how Excel describes a blank space. So, this function says to leave the space blank if the item number field is blank, or fill in the space with the VLOOKUP value if it is filled in. Create similar nested IF functions on your sheet everywhere there is a VLOOKUP function.

6) The total and subtotal fields have *sum* formulas. The total price calculation is a sum function within an IF function similar to the IF function used for the description and unit price cells.

7) Now make an input control on the quantity field of the PO sheet. Let's assume that orders cannot be made for quantities greater than 100 without the owner's approval. Select the cells where the quantity ordered will be input. Go to Data, then Data Validation, and then set the restriction to whole numbers less than 101. Create an input message that tells the user about the restriction, and an error message that informs the users why an amount over 100 cannot be entered.

8) Make the date field automatically update to today's date. This is easily accomplished with an Excel function. Enter "=Today()" in the date cell, and you are done.

9) Now, you will add an access control that prevents any unauthorised changes to the valid vendor list. This is a control that prevents users from making unauthorised changes to the information system. Switch to the Vendor worksheet. Unlock any cells you want users to be able to change: select each cell or range, click *Format, Format Cells, Protection* (*Format* is found in the *Home* main menu). Clear the *Locked* check box. For this sheet, leave all cells locked. Next, you will set protection on the Purchase Order sheet. In this sheet, you will need to unlock any cells where users make inputs. Hide any formulas that you do not want to be visible. You do not need to unlock buttons or controls for users to be able to click and use them. Click *Protect Sheet* in the *Format* menu when you are ready to protect a sheet. Type a password for the sheet.

   Note: Make sure you choose a password you can remember, because if you lose the password, you cannot gain access to the protected elements on the worksheet again! Now, insert a New Comment in cell A1 of your purchase order sheet (comments can be found in the *Review* menu). Make sure to type your password here, or your tutor will not be able to mark your lab. Obviously, you would not want to type the password on this sheet in real life!

11) Now implement FOUR more internal controls on the PO sheet, Vendor sheet, and/or the Prices sheet. You choose your own controls, but you cannot implement the same control more than once. You will document these in part D.

Now the purchase order form is now done! Time to move on…

Lab 3: Excel Purchase register and Additional Controls

Part B: The Purchase Register

The Purchase Register is a sheet that keeps track of all purchase orders and determines when account balances should be paid. Your employer wants all payment dates and amounts to be automatically determined by the system. This is useful because the business will no longer miss any payments, and they can structure payments to always take advantage of any helpful discount terms.

1) Create a purchase register table with the same column headings as the example (see Figure 4). Name the sheet "Register".

2) The first seven items (columns) on the register will be automatically copied from the purchase order form. This will be discussed later.

3) The remaining items are calculated. The formulas are:

> **Cost of Credit** = (Net Days-Discount Days)/360*Interest rate. (You will assume an interest rate of 10%. Think about what this means. You are calculating your cost of paying a balance early).

> **Date to Pay** = This will require a nested IF function. If the cost of credit is less than the discount you receive, then you should pay the balance within the discount period because it saves you money. Pay on the last day of discount in this case. If you can earn more than you save, then pay off the balance on the last possible day.

> **Amount to Pay** = Also an IF function. If you pay within the discount period, then you should pay the balance minus the discount. If you pay after the discount period, you will have to pay the entire balance.

4) In cell A3, type in the function for today's date "=Today()".

5) Now, format the payment date different colours for payment dates before and after today's date by making a reference to the cell with today's date. Make the payment days that have already passed red and make the days that have not yet occurred blue. Use the *Conditional Formatting* option under the *Home* ribbon.

6) Do not protect this sheet – Excel cannot paste to a protected sheet, and you will not be able to move the information from a purchase order to this sheet without writing custom VBA code if you protect this sheet. We do not have time to learn VBA coding in this class, we will instead assume that the sheet is protected. (This means you cannot suggest this as an additional control in Part C!)

This completes the register.

Part C – Understand Your System and its Weaknesses

1) Create a new worksheet called "FourControls." On this worksheet, list the FOUR controls that you added to the PO form or other sheets and explain what each control accomplishes.

2) Now you need to take some time to understand how your system works. Study the purchase order system you have just created. Notice that it could still use many improvements and additional internal controls. Identify **FOUR <u>additional</u>** controls that should be included in this application. Write a brief explanation for each suggested control that explains why the control will be beneficial. Type these suggested controls and explanations on a new worksheet in your Excel file called "Improvements."

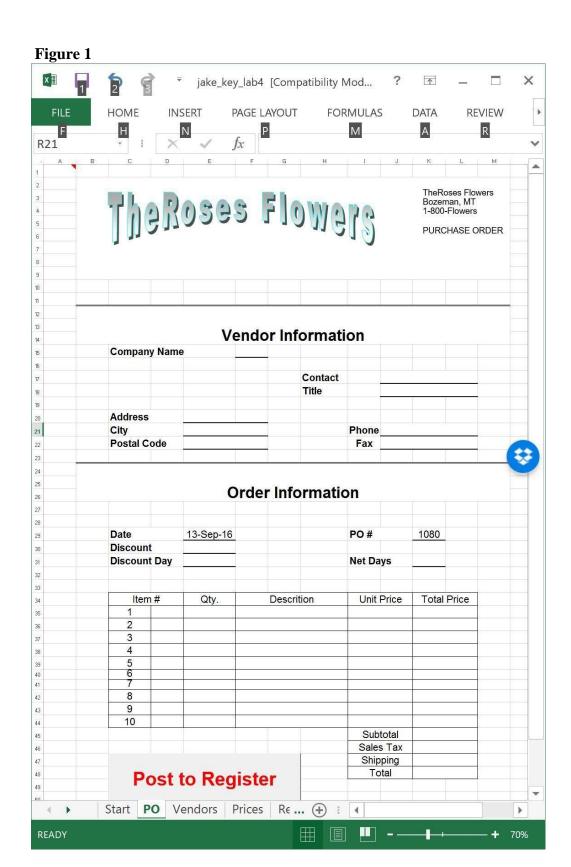These instructions form part of the Excel assignment.
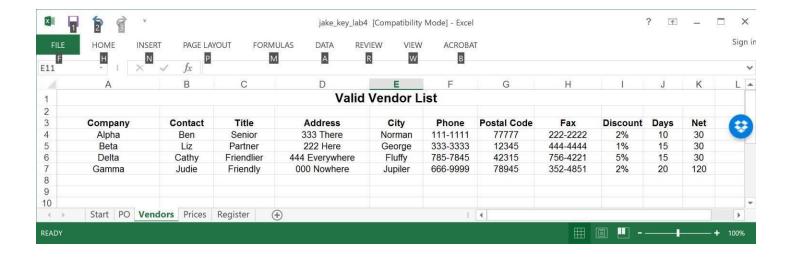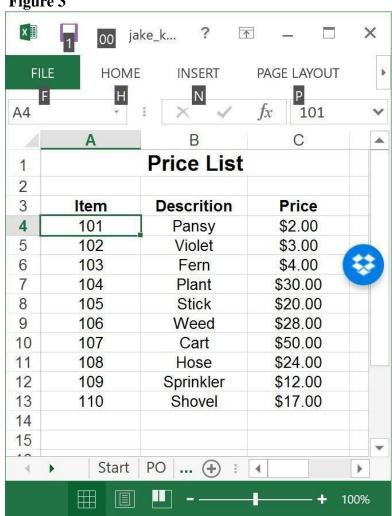
Figure 1

Figure 2

Figure 3

Figure 4

	PO #	Date	Amount	Company	Discount %	Days	Net	Cost of Credit	Date To Pay	Amount to Pay
					Headings for Payable Register					
1030										
13-Sep-16										
	1000	10-May-16	$200.00	Alpha	2%	10	100	2.50%	18-Aug-16	$200.00
	1010	04-Oct-16	$1,605.00	beta	1%	15	30	0.42%	19-Oct-16	$1,588.95
	1020	04-Oct-16	$1,465.90	delta	5%	15	30	0.42%	19-Oct-16	$1,392.61