**ACIS 2504 – Instructions for Spreadsheet Homework Assignment**

**Due Friday, April 9, 2021 at 11:59 PM**

The manager of Draper Office Supply, Inc. uses a spreadsheet to display inventory data, customer data, and sales transaction data for January 2021. The spreadsheet is also used to analyze sales and conduct a break-even analysis.

| **Step** | **Instructions** |
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| **1** | Start Excel. Open the downloaded Excel file named *ACIS 2504 Spreadsheet Homework Spring 2021 LastFirst.xlsm*. Make sure you enable the macros when you open the file. Save the file with the name **ACIS 2504 Spreadsheet Homework Spring 2021 LastFirst.xlsm** replacing *LastFirst* with your last and first name. Note that this file must be saved as a macro-enabled file with a file extension of .xlsm. |
| **2** | Enter your first and last name in the box for name on the **Honor Code** worksheet. Read the honor code policy and put your initials in the appropriate box. A unique file ID should automatically appear after you enter your first and last name in the box for name. If it does not appear, that means you did not enable the macros when you opened the file. You must close the file, re-open it, enable the macros and re-enter your name. (You can also enable macros by going to File > Options > Trust Center. Under Macro Settings select Enable all Macros.) Note that the homework file for each student should have a different file ID. |
| **3** | The manager of Draper Office Supply, Inc. imported product data on February 1, 2021. This data appears on the **Inventory** worksheet. Enter a formula in cell B6 of the Inventory worksheet that uses two functions to remove any nonprintable characters and extra spaces from the data in cell A6. Copy the formula in cell B6 down to cell B44. Resize the column as needed to fit the contents. |
| **4** | In cell C6 of the **Inventory** worksheet, use the LEFT and FIND functions to extract the Product\_ID from cell B6. The Product\_ID should include the letter and numbers on the left side of the text in cell B6. (For example, the Product\_ID for the first item should be AT932060.) Copy the formula down the column to cell C44. Resize the column as needed to fit the contents. |
| **5** | In cell D6 of the **Inventory** worksheet, use the PROPER, MID and FIND functions to extract the category from cell B6. (The category for the first item is Office Machines.) Copy the formula down the column to cell D44. Resize the column as needed to fit the contents. |
| **6** | In cell E6 of the **Inventory** worksheet, use the RIGHT, LEN and FIND functions to extract the Brand from cell B6. (For example, the Brand for the first item is AT.) Some Brands are abbreviated using 2 letters and some are abbreviated using 3 letters. Copy the formula down the column to cell E44. |
| **7** | Place a formula in cell B5 of the **Find Inventory** sheet that will display the Product\_ID for the Description that appears in the combo box in cell B4. The formula should be able to find any valid Description displayed in the combo box and return the Product\_ID associated with that Description. The Descriptions and Product\_Ids appear on the **Inventory** sheet. Use the INDEX and MATCH functions to do this.  Copy the formula from B5 to cell range B6:B10 so that the Category, Brand, Cost, Price, and Quantity\_On\_Hand are displayed for the Description displayed in the combo box. The Category, Brand, Cost, Price and Quantity\_On\_Hand associated with each product Description appear on the **Inventory** sheet. Hint: You will need to make certain cell references absolute before you copy the formula so that it displays the correct information. Note: Do NOT use a lookup function for any part of this step. |
| **8** | Customers can choose to become members of the Draper Office Supply Discount Club. Members of the club receive a percentage discount on their purchases. This percentage depends on the type of membership that a customer has. Membership discount percentages appear on the **MiscInfo** sheet. Use *Create from Selection* to name cells B3:B5 on the **MiscInfo** sheet. The cells should be named based on the labels in the left column (i.e., the labels in cells A3:A5).  Note: If you do not use *Create from Selection* to name the cells, you may end up with incorrect range names. Points will be deducted from your grade if the range names are incorrect. |
| **9** | The company charges customers payment fees when products are purchased using a credit or debit card or are purchased on account. Purchases made on account are referred to as “Credit Line” purchases. Payment fee percentages appear on the **MiscInfo** sheet. Use *Create from Selection* to name cells E12:E15 on the **MiscInfo** sheet. The cells should be named based on the labels in cells D12:D15.  Note: If you do not use *Create from Selection* to name the cells, you may end up with incorrect range names. Points will be deducted from your grade if the range names are incorrect. |
| **10** | The sales tax rate appears in cell B8 of the **MiscInfo** sheet. Name cell B8 as follows: SalesTaxRate. (Make sure the name is properly capitalized and spelled correctly; otherwise, points will be deducted from your grade.) |
| **11** | The **SalesTrans** worksheet contains a list of sales transactions that occurred during January 2021. Create a Transaction\_ID for each of the transactions on the **SalesTrans** sheet. Place a formula in cell A5 of the **SalesTrans** sheet that will use the TEXT, LEFT, RIGHT, and VLOOKUP functions to create a transaction code/ID. You must also use a function or operator that joins the text to create the ID.  The Transaction\_ID should begin with the last four characters of the Customer\_ID. These characters should be followed by a dash (-). The dash should be followed by the date in YYDDMM format. The date should be followed by the first 3 characters of the Product\_ID. These characters should be followed by a dash (-). The dash should be followed by the Payment\_Code. The Payment\_Code and the Payment\_Type appear on the MiscInfo sheet. Use a VLOOKUP function to return the Payment\_Code based on the Payment\_Type displayed in the SalesTrans sheet. (For example, the Transaction\_ID for the first transaction is 8509-210201BOI-CC.)  Copy the formula in cell A5 to cell range A6:A82. |
| **12** | Enter a formula in cell D5 of the **SalesTrans** sheet that will return the correct Category for the Product\_ID displayed in cell C5. Use a VLOOKUP function to do this. Obtain the category from the **Inventory** sheet.  Copy the formula from cell D5 to cells D6:D82 without making changes to it. It should return the correct category for each Product\_ID. |
| **13** | Some products on the SalesTrans sheet are purchased by Draper Office Supply Discount Club members and some are not. If products are not purchased by club members, then the Customer\_ID in cells E5:E82 is specified as “XXXXXXX”. If products are purchased by club members, then the Customer\_ID for the appropriate club member is displayed in cells E5:E82.  Enter a formula in cell F5 of the **SalesTrans** sheet, that will display N/A if the Customer\_ID is XXXXXXX. If the Customer\_ID is not XXXXXXX, the formula will find the Customer\_ID on the **Customer Data** sheet and return the Member\_Type associated with that customer. Use an IF function and a VLOOKUP function to do this.  Copy the formula from cell F5 to cells F6:F82 without making changes to it. It should return the correct Member\_Type for each customer. |
| **14** | Enter a formula in cell H5 of the **SalesTrans** sheet that will return the correct Price for the Product\_ID displayed in cell C5. Use a VLOOKUP function to do this. Obtain the price from the **Inventory** sheet.  Copy the formula from cell H5 to cells H6:H82 without making changes to it. It should return the correct price for each Product\_ID. |
| **15** | Customers who are not Discount Club Members do not receive a discount. Customers who are Discount Club Members receive a discount based on their Member\_Type. The discount percentage appears on the **MiscInfo** sheet.  Use an IFS function in cell J5 of the **SalesTrans** sheet to calculate the discount. If the Member\_Type is N/A, then the discount is 0. If the Member\_Type is Elite Plus multiply the Sales\_Before\_Discount amount times the Discount\_Percentage for Elite Plus members. If the Member\_Type is Elite multiply the Sales\_Before\_Discount amount times the Discount\_Percentage for Elite members. If the Member\_Type is Basic multiply the Sales\_Before\_Discount amount times the Discount\_Percentage for Basic members. Use the range name for the Discount\_Percentage in the formula. Do not use a VLOOKUP function for this step.  Copy the formula from cell J5 to cells J6:J82 without making changes to it. It should return the correct Discount for each customer. |
| **16** | Enter a formula in cell L5 of the **SalesTrans** sheet that calculates Sales\_Taxes. Sales taxes equal Sales\_After\_Discount times the sales tax rate that appears on the MiscInfo sheet. Use the range name for the sales tax rate in your formula. Use the ROUND function to round Sales\_Taxes to two decimal places.  Copy the formula from cell L5 to cells L6:L82 without making changes to it. |
| **17** | Draper Office Supply charges payment fees if customers pay with a credit or debit card or use their credit line. No fees are charged if customers pay with cash or check. Payment\_Fees equal Sales\_Plus\_Taxes times the Payment\_Fee\_Percentage. The Payment\_Fee\_Percentage appears on the **MiscInfo** sheet. Enter a formula in cell O5 of the **SalesTrans** sheet that calculates the Payment\_Fees based on the payment type. Use a nested IF function and an OR function. Use the range names for the Payment\_Fee\_Percentages in your formula. Do not use an IFS function. The payment fee equals Sales\_Plus\_Taxes times the appropriate Payment\_Fee\_Percentage.  Copy the formula from cell O5 to cells O6:O82 without making changes to it. |
| **18** | The manager of Draper Office Supply, Inc. would like to randomly assign a customer service representative to each customer on the **Customer Data** sheet. Each representative should be assigned to 10 customers.  Place a formula in cell G4 of the **Customer Data** sheet that returns one of the customer service representative IDs that appears in cells A12:A15 of the **MiscInfo** sheet. Use the RAND, ROUNDUP, RANK.EQ and INDEX functions to do this. The intermediate steps should be displayed in cells E4 and F4. Appropriate column headings should be placed in cells E3 and F3.  Copy the formulas in cells E4:G4 down the column to row 43 without making changes to the formulas. |
| **19** | Use the WORKDAY function in cell K4 of the **Customer Data** sheet to calculate the Payment\_Due\_Date. The Payment\_Due\_Date is 20 days from the Last\_Payment\_Date. There is one holiday in February that must be considered. That holiday appears on the **MiscInfo** sheet.  Copy the formula from cell K4 to cells K5:43 without making changes to it |
| **20** | Use a VLOOKUP function in cell M4 of the **Customer Data** sheet that will look up Credit\_Remaining and, based on that number, display a message. The first step is to create a lookup table. The top left corner of the lookup table must be in cell P5 of the **Customer Data** sheet and the table must be named MessageLookup. Following are the messages that should be displayed based on the amount of credit remaining: (The following table must be re-arranged. It is not in the correct format to be used with a VLOOKUP function.)   |  |  | | --- | --- | | **Message** | **Credit Remaining** | | No issues | >=100 | | Monitor credit limit | >=50 and <100 | | Approaching credit limit | >=10 and <50 | | Credit limit reached | >=0 and <10 |   Use the name of the lookup table in your VLOOKUP formula and make sure the messages are spelled and capitalized correctly. You will not receive credit if the lookup table is not named correctly and the messages are misspelled and/or improperly capitalized. Copy the formula in cell M4 down the column to cell M43. |
| **21** | Enter a SUBTOTAL function in cell O4 of the **Sales by Member Type** sheet. This function should sum Sales\_After\_Discount. Use AutoFilter to display only transactions with a Category of Elite Plus. The SUBTOTAL function should automatically recalculate. |
| **22** | The manager of Draper Office Supply, Inc. would like to know how much furniture must be sold for the company to break-even. A break-even analysis has been prepared on the **Break-Even Analysis** sheet. The break-even analysis should calculate the break-even point for different products within the furniture category. Place a combo box in cells C3:D3 of the **Break-Even Analysis** sheet. The combo box should allow the user to select one of the 6 furniture Product IDs shown in range M4:M9. The combo box should also be linked to cell C3.  Hide column M so the Product\_IDs are not visible. |
| **23** | Use a VLOOKUP function in cell D6 of the **Break-Even Analysis** sheet to return the selling price per unit for the Product ID displayed in the combo box. The selling price per unit should be obtained from the **Inventory** sheet. Use an INDEX function to return the lookup\_value for the VLOOKUP function. |
| **24** | Use a VLOOKUP function in cell C15 of the **Break-Even Analysis** sheet to return the cost per unit for the Product ID displayed in the combo box. The cost per unit should be obtained from the **Inventory** sheet. Use an INDEX function to return the lookup\_value for the VLOOKUP function. |
| **25** | Place a scroll bar on the **Break-Even Analysis** sheet that can be used to change the number of units sold in cell D5. Place the scroll bar in cells F5:F17. The minimum number of units sold should be 0 and the maximum number of units sold should be 70. The scroll bar should change the number of units by one when the ends are clicked. When the scroll bar is clicked in the center, the number of units sold should change by 4. Use the scroll bar to find the break-even point for Product ID SAU576868. The break-even number of units should be displayed on the sheet. |
| **26** | The manager of Draper Office Supply would like to calculate forecasted sales for February, March, and April. The manager assumes that February sales will be 1% higher than January sales, March sales will be 2% higher than January sales and April sales will be 3% higher than January sales. Go to the **Forecasted Sales** sheet and use an **array** formula with constants to calculate forecasted sales for each category for February, March, and April. The array formula should appear in cells C4:E9. |
| **27** | The manager of Draper Office Supply would like to smooth out fluctuations in sales by calculating a moving average of monthly sales. Go to the **Monthly Sales** sheet and use the Analysis ToolPak to create a 3-month moving average of sales for 5/31/2019 through 1/31/21. Place the moving averages in cells D4:D24. Use the Analysis Toolpak to create a chart with the Moving Averages. Move and resize the chart so that the top left corner is in cell G3 and the bottom right corner is in cell Q24. Edit the horizontal axis labels so that the dates shown in range A4:A24 are displayed. Change the chart title to: 3-Month Moving Averages for Sales  (Make sure the title is spelled and capitalized correctly.) |
| **28** | Use the Analysis ToolPak to create descriptive (summary) statistics for the monthly sales amounts on the **Monthly Sales** sheet. The top left corner of the descriptive statistics should be in cell T3 of the **Monthly Sales** sheet. |
| **29** | Go to the **Documentation** worksheet and update the Change Log. Briefly describe at least four changes made to four different worksheets. Each modification should be described on a separate row of the Change Log. Enter the modification date and your name along with a description of each modification. If necessary, wrap the text in the cell containing the description. You do not need to enter a Last Version Backup Name. |

Submit your completed file on Canvas by 11:59 pm on Friday, April 9.