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**BATCH B1**

**BN/23B/1046**

**QUESTION 1:**

**DICOVERY:**

* **Based on the data, the delivery status is positive, with more of order being shipped out.**
* **There is decline in sales and order for the recent year (2005), therefore there should be appropriate advertisement to improve sales in the coming year.**
* **The data shows that the countries with the most sales, there should be a reward system to as to encourage the sales person and also cause others to perform better in sales.**

**Question 2**

**a. Data Validation:**

Data validation is a process used to ensure that data entered into a system meets a certain set of criteria before it is accepted. This helps maintain data integrity and consistency. For example, you can set up validation rules in a spreadsheet to only allow numerical values between 1 and 100 in a certain column.

b. **Big Data**:

Big data refers to extremely large datasets that may be too complex or large to be processed using traditional data processing applications. Big data often involves high volume, velocity, and variety of data. It requires specialized tools and techniques for storage, processing, and analysis.

c. **Data Consolidation:**

Data consolidation involves combining data from different sources or across multiple datasets into a single dataset. This process helps in creating a comprehensive view of the data for analysis or reporting purposes. For example, consolidating sales data from different regions into one dataset for company-wide analysis.

d**. Data Modelling:**

Data modeling is the process of creating a conceptual representation of data and its relationships. It helps in understanding the structure of the data and designing databases or systems accordingly. Data modeling can involve techniques such as entity-relationship diagrams or schema design.

**e. Functions in Excel**:

Functions in Excel are pre-built formulas designed to perform specific calculations or tasks. Examples include SUM for adding numbers, AVERAGE for calculating the average of a range, and VLOOKUP for looking up values in a table.

f**. Data Wrangling/Cleaning**:

Data wrangling, also known as data cleaning or data munging, involves the process of cleaning and transforming raw data into a usable format for analysis. This may include removing duplicates, correcting errors, handling missing values, and formatting data appropriately.

g. **Conditional Formatting**:

Conditional formatting is a feature in Excel that allows you to format cells based on certain conditions. For example, you can highlight cells that contain values greater than a certain threshold or cells that meet specific criteria with different colors or styles.

Question 3.

a**.Write out 30 Excels functions and state each of them uses with practical examples (attach just screenshots**

1. SUM: Adds up all the numbers in a range.

Example: =SUM(A1:A10) adds up the numbers in cells A1 through A10.

1. AVERAGE: Calculates the average of a range of numbers.

Example: =AVERAGE(B1:B20) calculates the average of numbers in cells B1 through B20.

1. MAX: Returns the largest number in a range.

Example: =MAX(C1:C15) returns the largest number in cells C1 through C15.

1. MIN: Returns the smallest number in a range.

Example: =MIN(D1:D12) returns the smallest number in cells D1 through D12.

1. VLOOKUP: Looks for a value in the first column of a table and returns a value in the same row from a specified column.

Example: =VLOOKUP(E1, A1:B10, 2, FALSE) looks for the value in E1 in column A, and returns the corresponding value from column B.

1. HLOOKUP: Similar to VLOOKUP but looks for a value in the first row of a table and returns a value in the same column from a specified row.
2. INDEX: Returns the value of a cell in a specific row and column of a range.

Example: =INDEX(A1:D10, 3, 2) returns the value in the third row and second column of the range A1:D10.

1. MATCH: Searches for a value in a range and returns the relative position of that item.

Example: =MATCH(F1, G1:G20, 0) searches for the value in F1 within the range G1:G20 and returns its position.

1. IF: Performs a logical test and returns one value if the condition is TRUE and another if FALSE.

Example: =IF(G1>10, "Pass", "Fail") checks if the value in G1 is greater than 10 and returns "Pass" if true, otherwise "Fail".

1. COUNT: Counts the number of cells in a range that contains numbers.

Example: =COUNT(A1:A100) counts the number of cells in the range A1:A100 that contain numbers.

1. COUNTIF: Counts the number of cells within a range that meet a single condition.

Example: =COUNTIF(B1:B50, ">50") counts the number of cells in the range B1:B50 that are greater than 50.

1. COUNTIFS: Counts the number of cells that meet multiple criteria.

Example: =COUNTIFS(C1:C50, ">50", D1:D50, "<100") counts the number of cells in range C1:C50 that are greater than 50 and cells in range D1:D50 that are less than 100.

1. SUMIF: Adds the cells specified by a given condition or criteria.

Example: =SUMIF(E1:E50, ">100", F1:F50) adds the values in cells F1:F50 where the corresponding value in E1:E50 is greater than 100.

1. SUMIFS: Adds the cells in a range that meet multiple criteria.

Example: =SUMIFS(G1:G50, H1:H50, "Apples", I1:I50, "Oranges") adds the values in cells G1:G50 where the corresponding cells in H1:H50 contain "Apples" and I1:I50 contain "Oranges".

1. CONCATENATE: Joins several text strings into one string.

Example: =CONCATENATE("Hello", " ", "World") returns "Hello World".

1. LEFT: Returns the leftmost characters from a text string.

Example: =LEFT("Excel", 3) returns "Exc".

1. RIGHT: Returns the rightmost characters from a text string.

Example: =RIGHT("Excel", 2) returns "el".

1. MID: Returns a specific number of characters from a text string, starting at the position you specify.

Example: =MID("Excel", 2, 3) returns "xce".

1. TRIM: Removes extra spaces from text, except for single spaces between words.

Example: =TRIM(" Excel ") returns "Excel".

1. LEN: Returns the length of a text string.

Example: =LEN("Excel") returns 5.

1. UPPER: Converts text to uppercase.

Example: =UPPER("excel") returns "EXCEL".

1. LOWER: Converts text to lowercase.

Example: =LOWER("EXCEL") returns "excel".

1. PROPER: Capitalizes the first letter of each word in a text string.

Example: =PROPER("excel is fun") returns "Excel Is Fun".

1. TEXT: Converts a value to text in a specific number format.

Example: =TEXT(TODAY(), "mm/dd/yyyy") returns today's date in the format MM/DD/YYYY.

1. DATE: Returns the serial number of a particular date.

Example: =DATE(2024, 3, 19) returns the serial number for March 19, 2024.

1. NOW: Returns the current date and time.

Example: =NOW() returns the current date and time.

1. TODAY: Returns the current date.

Example: =TODAY() returns today's date.

1. IFERROR: Returns a value you specify if a formula evaluates to an error; otherwise, it returns the result of the formula.

Example: =IFERROR(A1/B1, "Error") returns "Error" if there's an error in the division, otherwise the result of A1/B1.

1. ROUND: Rounds a number to a specified number of digits.

Example: =ROUND (3.14159, 2) rounds pi to 2 decimal places, returning 3.14.

1. RAND: Returns a random number.

Example: =RAND() generates a random number

b. Write out 45 Excel Short Cut Keys and state their uses

1. Ctrl + C: Copy selected cells or text.
2. Ctrl + X: Cut selected cells or text.
3. Ctrl + V: Paste copied or cut cells or text.
4. Ctrl + Z: Undo the last action.
5. Ctrl + Y: Redo the last undone action.
6. Ctrl + S: Save the current workbook.
7. Ctrl + N: Create a new workbook.
8. Ctrl + O: Open an existing workbook.
9. Ctrl + P: Print the current sheet.
10. Ctrl + F: Find text or value within the sheet.
11. Ctrl + H: Replace text or value within the sheet.
12. Ctrl + A: Select the entire worksheet.
13. Ctrl + B: Bold selected cells or text.
14. Ctrl + I: Italicize selected cells or text.
15. Ctrl + U: Underline selected cells or text.
16. Ctrl + 1: Format cells (opens Format Cells dialog box).
17. Ctrl + 2: Apply bold formatting to selected cells or text.
18. Ctrl + 3: Apply italic formatting to selected cells or text.
19. Ctrl + 4: Apply underline formatting to selected cells or text.
20. Ctrl + 5: Apply strikethrough formatting to selected cells or text.
21. Ctrl + 6: Show or hide objects.
22. Ctrl + 7: Show or hide the standard toolbar.
23. Ctrl + 8: Toggle the display of outline symbols.
24. Ctrl + 9: Hide selected rows.
25. Ctrl + 0: Hide selected columns.
26. Ctrl + Shift + +: Insert a new row or column.
27. Ctrl + -: Delete selected cells, rows, or columns.
28. Ctrl + Shift + L: Turn on or off Autofilter.
29. Ctrl + Shift + $: Apply currency format.
30. Ctrl + Shift + %: Apply percentage format.
31. Ctrl + Shift + #: Apply date format.
32. \*\*Ctrl + Shift + &: Apply border outline.
33. Ctrl + Shift +\_: Remove border.
34. Ctrl + Shift + ~: Apply general number format.
35. Ctrl + Shift + !: Apply comma format.
36. Ctrl + Shift + @: Apply time format.
37. Ctrl + Shift + Arrow Keys: Extend the selection to the last nonblank cell in the same column or row as the active cell.
38. Ctrl + Page Up: Move to the previous worksheet.
39. Ctrl + Page Down: Move to the next worksheet.
40. Ctrl + Home: Move to the beginning of the worksheet.
41. Ctrl + End: Move to the last cell of the worksheet.
42. Ctrl + Tab: Switch between open workbooks or worksheets.
43. Ctrl + Shift + Tab: Navigate backward through tabs.
44. Alt + E + S + V: Paste Special.
45. Alt + Enter: Insert a new line within a cell.

b. Benefits of Tables in Data Analysis in Excel:

Structured Data Organization: Tables provide a structured format for organizing and managing data, making it easier to analyze and interpret.

Dynamic Range Expansion: When new data is added to a table, Excel automatically expands the table range, ensuring that all data is included in analysis without manual adjustments.

Column Filtering: Tables allow easy filtering of data by column headers, enabling users to focus on specific subsets of data for analysis.

Sorting: Tables enable sorting of data based on column values, facilitating identification of trends or patterns.

Data Validation: Tables support data validation rules, ensuring that only valid data is entered, thus enhancing data integrity.

Formulas Auto-fill: Formulas entered in one row of a table are automatically filled down to subsequent rows, simplifying calculations and reducing errors.

Structured References: Tables use structured references, which are more intuitive and easier to understand compared to traditional cell references, improving formula readability.

Built-in Total Row: Tables include a built-in total row that provides quick access to commonly used summary functions such as SUM, AVERAGE, COUNT, etc.

Conditional Formatting: Tables support conditional formatting, allowing users to visually highlight important data points or trends.

Data Analysis Tools Integration: Tables seamlessly integrate with Excel's data analysis tools such as PivotTables and PivotCharts, enhancing the analytical capabilities of Excel.

c. Pivot Table:

A Pivot Table is a powerful data analysis tool in Excel that allows users to summarize and analyze large datasets. It enables users to rearrange, summarize, and manipulate data, providing insights into the underlying patterns and trends. Pivot Tables offer the following functionalities:

Data Summarization: Pivot Tables can summarize large datasets by aggregating values based on various criteria such as sum, count, average, min, max, etc.

Data Filtering: Users can filter data in Pivot Tables based on specific criteria to focus on relevant information.

Dynamic Data Reorganization: Pivot Tables allow users to pivot, rearrange, and reorganize data dynamically by dragging and dropping fields to different areas within the Pivot Table.

Data Comparison: Pivot Tables facilitate comparing data across different categories or groups, enabling users to identify trends, patterns, and outliers easily.

Data Visualization: Pivot Tables can be used to create visualizations such as PivotCharts, which provide graphical representations of summarized data for better interpretation and presentation.

d. Simple Chart Using Slicer for a Demo Data:

Unfortunately, as a text-based AI model, I am unable to create graphical representations directly. However, I can guide you on how to create a simple chart using slicers in Excel.

Assuming you have a dataset with some sample data and you want to create a chart with a slicer, follow these steps:

Prepare Your Data: Ensure your data is organized properly in Excel.

Select Your Data: Highlight the data range you want to include in your chart.

Insert a Chart: Go to the "Insert" tab on the Excel ribbon, choose the desired chart type (e.g., column chart, line chart, etc.).

Create Slicers: Once your chart is created, go to the "Insert" tab again, and click on "Slicer." Select the field(s) you want to use as slicers (e.g., category, region, etc.).

Connect Slicer to Chart: Right-click on the slicer and choose "Connect to PivotTable" (if you haven't already created a PivotTable, Excel will prompt you to do so). Then, select the PivotTable fields you want to filter with the slicer.

Interact with Slicer: Now, you can interact with the slicer to filter data in your chart dynamically.

By following these steps, you can create a simple chart with a slicer in Excel to visually explore and analyze your data.