

DATA VISUALIZATION

Lab_Assinment_3

Topic : Index Vs Match

| Product ID | Product | Category | Jan Sales | Feb Sales | Mar Sales |
|------------|-----------|-------------|-----------|-----------|-----------|
| 101 | Product A | Electronics | 120 | 130 | 140 |
| 102 | Product B | Furniture | 150 | 160 | 170 |
| 103 | Product C | Electronics | 200 | 210 | 220 |
| 104 | Product D | Clothing | 90 | 100 | 110 |
| 105 | Product E | Furniture | 220 | 230 | 240 |
| 106 | Product F | Electronics | 130 | 140 | 150 |

Questions :

1. Use INDEX and MATCH to find the sales for Product C in March.
2. Use INDEX and MATCH to find the category for Product E.
3. Use INDEX and MATCH to find the maximum sales for Product B across all months.
4. Use INDEX and MATCH to find the month with the maximum sales for Product A.
5. Use INDEX, MATCH, and SUMIF to sum the sales for all products in the "Electronics" category for April.
6. Use INDEX and MATCH to calculate the average sales for Product D across all months.
7. Use INDEX and MATCH to find the sales for Product ID 105 in May.
8. Use INDEX and MATCH to create a dynamic lookup where the user can input a product and a month, and the formula returns the corresponding sales

1. Use INDEX and MATCH to find the sales for Product C in March.

Solution :

Formula Syntax : =INDEX(B2:D4, MATCH("Product C", A2:A4, 0), MATCH("March", B1:D1, 0))

Formula Used : =INDEX(D2:F6,MATCH("Product C",B2:B6,0),3)

The screenshot shows the LibreOffice Calc application window. The spreadsheet has a table with the following data:

| Product ID | Product | Category | Jan Sales | Feb Sales | Mar Sales |
|------------|-----------|-------------|-----------|-----------|-----------|
| 101 | Product A | Electronics | 120 | 130 | 140 |
| 102 | Product B | Furniture | 150 | 160 | 170 |
| 103 | Product C | Electronics | 200 | 210 | 220 |
| 104 | Product D | Clothing | 90 | 100 | 110 |
| 105 | Product E | Furniture | 220 | 230 | 240 |
| 106 | Product F | Electronics | 130 | 140 | 150 |

The formula bar shows the formula: =INDEX(D2:F6,MATCH("Product C",B2:B6,0),3). A tooltip for this formula is visible over cell I4, which contains the value 220. The spreadsheet is titled 'Lab_3.ods' and the sheet is named 'Sheet1'.

2. Use INDEX and MATCH to find the category for Product E.

Solution :

Formula Syntax : =INDEX(B2:B6, MATCH("Product E", A2:A6, 0))

Formula Used : =INDEX(C2:C7,MATCH("Product E",B2:B7,0))

The screenshot shows the LibreOffice Calc application window titled "Lab_3.ods". The spreadsheet contains a table with the following data:

| Product ID | Product | Category | Jan Sales | Feb Sales | Mar Sales |
|------------|-----------|-------------|-----------|-----------|-----------|
| 101 | Product A | Electronics | 120 | 130 | 140 |
| 102 | Product B | Furniture | 150 | 160 | 170 |
| 103 | Product C | Electronics | 200 | 210 | 220 |
| 104 | Product D | Clothing | 90 | 100 | 110 |
| 105 | Product E | Furniture | 220 | 230 | 240 |
| 106 | Product F | Electronics | 130 | 140 | 150 |

The formula bar shows the formula: `=INDEX(C2:C7,MATCH("Product E",B2:B7,0))`. A tooltip for this formula is visible, showing the same text. The spreadsheet is currently displaying row 6, which contains the data for Product E. The status bar at the bottom indicates the language is English (USA) and the zoom level is 100%.

3. Use INDEX and MATCH to find the maximum sales for Product B across all months.

Solution :

Formula Used : =MAX(INDEX(D2:F7,MATCH("Product B",B2:B7,0),0))

The screenshot shows a LibreOffice Calc spreadsheet titled 'Lab_3.ods'. The spreadsheet has a table with the following data:

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|------------|-----------|-------------|-----------|-----------|-----------|---|---|---|---|---|---|---|---|---|
| 1 | Product ID | Product | Category | Jan Sales | Feb Sales | Mar Sales | | | | | | | | | |
| 2 | 101 | Product A | Electronics | 120 | 130 | 140 | | | | | | | | | |
| 3 | 102 | Product B | Furniture | 150 | 160 | 170 | | | | | | | | | |
| 4 | 103 | Product C | Electronics | 200 | 210 | 220 | | | | | | | | | |
| 5 | 104 | Product D | Clothing | 90 | 100 | 110 | | | | | | | | | |
| 6 | 105 | Product E | Furniture | 220 | 230 | 240 | | | | | | | | | |
| 7 | 106 | Product F | Electronics | 130 | 140 | 150 | | | | | | | | | |

The formula bar shows the formula: =MAX(INDEX(D2:F7,MATCH("Product B",B2:B7,0),0)). A tooltip for cell J2 displays the formula: =MAX(INDEX(D2:F7,MATCH("Product B",B2:B7,0),0)). The value 170 is visible in cell I3, which corresponds to the March sales for Product B.

4. Use INDEX and MATCH to find the month with the maximum sales for Product A.

Solution :

Formula Used : =INDEX(D1:F1, MATCH(MAX(INDEX(D2:F6, MATCH("PROD A", B2:B6, 0), 0)), INDEX(D2:F6, MATCH("PROD A", B2:B6, 0), 0), 0))

| Product ID | Product | Category | Jan Sales | Feb Sales | Mar Sales |
|------------|-----------|-------------|-----------|-----------|-----------|
| 101 | Product A | Electronics | 120 | 130 | 140 |
| 102 | Product B | Furniture | 150 | 160 | 170 |
| 103 | Product C | Electronics | 200 | 210 | 220 |
| 104 | Product D | Clothing | 90 | 100 | 110 |
| 105 | Product E | Furniture | 220 | 230 | 240 |
| 106 | Product F | Electronics | 130 | 140 | 150 |

5. Use INDEX, MATCH, and SUMIF to sum the sales for all products in the "Electronics" category for April.

Solution :

Formula Used : =SUMIF(C7:C12,"Electronics",E7:E12)

The screenshot shows a LibreOffice Calc spreadsheet with the following data:

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|------------|-----------|-------------|-----------|-----------|-----------|---|---|-----------------|---|---|---|---|---|---|
| 1 | Product ID | Product | Category | Jan Sales | Feb Sales | Mar Sales | | | Sum of Products | | | | | | |
| 2 | 101 | Product A | Electronics | 120 | 130 | 140 | | | 490 | | | | | | |
| 3 | 102 | Product B | Furniture | 150 | 160 | 170 | | | 350 | | | | | | |
| 4 | 103 | Product C | Electronics | 200 | 210 | 220 | | | 350 | | | | | | |
| 5 | 104 | Product D | Clothing | 90 | 100 | 110 | | | 140 | | | | | | |
| 6 | 105 | Product E | Furniture | 220 | 230 | 240 | | | 140 | | | | | | |
| 7 | 106 | Product F | Electronics | 130 | 140 | 150 | | | 140 | | | | | | |

The formula bar shows: =SUMIF(C7:C12,"Electronics",E7:E12)

A tooltip for the formula in cell I7 shows: =SUMIF(C2:C7,"Electronics",E2:E7)

6. Use INDEX and MATCH to calculate the average sales for Product D across all months.

Solution :

Formula Used : =AVERAGE(INDEX(D2:F7,MATCH("Product D",B2:B7,0),0))

The screenshot shows a LibreOffice Calc spreadsheet with the following data:

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|------------|-----------|-------------|-----------|-----------|-----------|---|---|---|---------------------|---|---|---|---|---|
| 1 | Product ID | Product | Category | Jan Sales | Feb Sales | Mar Sales | | | | Average of Products | | | | | |
| 2 | 101 | Product A | Electronics | 120 | 130 | 140 | | | | 100 | | | | | |
| 3 | 102 | Product B | Furniture | 150 | 160 | 170 | | | | | | | | | |
| 4 | 103 | Product C | Electronics | 200 | 210 | 220 | | | | | | | | | |
| 5 | 104 | Product D | Clothing | 90 | 100 | 110 | | | | | | | | | |
| 6 | 105 | Product E | Furniture | 220 | 230 | 240 | | | | | | | | | |
| 7 | 106 | Product F | Electronics | 130 | 140 | 150 | | | | | | | | | |

The formula bar shows the formula: =AVERAGE(INDEX(D2:F7,MATCH("Product D",B2:B7,0),0))

A tooltip for the formula in cell I2 shows: =AVERAGE(INDEX(D2:F7,MATCH("Product D",B2:B7,0),0))

7. Use INDEX and MATCH to find the sales for Product ID 105 in May.

Solution :

Formula Used : =INDEX(D2:F7,MATCH(105,A2:A7,0),2)

The screenshot shows a spreadsheet with the following data:

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|------------|-----------|-------------|-----------|-----------|-----------|---|---|---|---|---|---|---|---|---|
| 1 | Product ID | Product | Category | Jan Sales | Feb Sales | May Sales | | | | | | | | | |
| 2 | 101 | Product A | Electronics | 120 | 130 | 140 | | | | | | | | | |
| 3 | 102 | Product B | Furniture | 150 | 160 | 170 | | | | | | | | | |
| 4 | 103 | Product C | Electronics | 200 | 210 | 220 | | | | | | | | | |
| 5 | 104 | Product D | Clothing | 90 | 100 | 110 | | | | | | | | | |
| 6 | 105 | Product E | Furniture | 220 | 240 | 230 | | | | | | | | | |
| 7 | 106 | Product F | Electronics | 130 | 140 | 150 | | | | | | | | | |

The formula bar shows: =INDEX(D2:F7,MATCH(105,A2:A7,0),2)

A tooltip for the formula in cell I6 shows: =INDEX(D2:F7, MATCH(105,A2:A7,0),2)

The spreadsheet is titled "Lab_3.ods - LibreOffice Calc". The status bar at the bottom shows "Find", "Find All", "Formatted Display", "Match Case", "Default", "English (USA)", and "100%".

8. Use INDEX and MATCH to create a dynamic lookup where the user can input a product and a month, and the formula returns the corresponding sales

Solution :

Formula Used : `INDEX(D2:F7,MATCH(G2,B2:B7,0),MATCH(G3,D1:F1,0))`