INDEX AND MATCH FUNCTIONS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ProductID** | **Product** | **Category** | **Jan Sales** | **Feb Sales** | **Mar Sales** | **Apr Sales** | **May Sales** |
| **101** | **PRODA** | **Electronics** | **120** | **130** | **140** | **150** | **160** |
| **102** | **PRODB** | **Furniture** | **150** | **160** | **170** | **180** | **190** |
| **103** | **PRODC** | **Electronics** | **200** | **210** | **220** | **230** | **240** |
| **104** | **PRODD** | **Clothing** | **90** | **100** | **110** | **120** | **130** |
| **105** | **PRODE** | **Furniture** | **220** | **230** | **240** | **250** | **260** |
| **106** | **PRODF** | **Electronics** | **130** | **140** | **150** | **160** | **170** |

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

Stp1:- Product C (PRODC) in March using the INDEX and MATCH functions

1. **INDEX: Use this function to pull data from a specific cell within a specified range.**
2. **MATCH: Use this function to locate the position of a specified value within a range.**

**Step2:- Formula**

**=INDEX(D2:H7, MATCH("PRODC", B2:B7, 0), MATCH("Mar Sales", D1:H1, 0))**

| **Product** | **Month** | **Sales** |
| --- | --- | --- |
| PRODC | March | 220 |

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

**Stp 1:- To find the Category for Product E (PRODE) using the INDEX and MATCH functions**

Stp2:- Column B and Categories are in Column C, the formula this

**=INDEX(C2:C7, MATCH("PRODE", B2:B7, 0))**

| **Product** | **Category** |
| --- | --- |
| PRODE | Furniture |

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

**Step1:- maximum sales for Product B across all months using the INDEX and MATCH functions.**

**Step2:- Product Names are in Column B ,Sales for each month (Jan, Feb, Mar, Apr, May) are in Columns D to H.**

### Stp3:-Formula

**=MAX(INDEX(D2:H7, MATCH("PRODB", B2:B7, 0), 0))**

* **INDEX(D2:H7, MATCH("PRODB", B2:B7, 0), 0) returns the entire row of sales data for Product B.**
* **MAX(...) finds the maximum value across that row**.

| **Product** | **Max Sales** |
| --- | --- |
| PRODB | 190 |

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

**Stp1:- find the month with the maximum sales for Product A (PRODA) using the INDEX and MATCH functions**

**Stp 2:- Formula**

**1.Find the sales data for Product A.**

**2.Identify the maximum sales value.**

**3.Use MATCH to find the position of that maximum value.**

=**INDEX(D1:H1, MATCH(MAX(INDEX(D2:H7, MATCH("PRODA", B2:B7, 0), 0)), INDEX(D2:H7, MATCH("PRODA", B2:B7, 0), 0), 0))**

| **Product** | **Month with Max Sales** |
| --- | --- |
| PRODA | May |

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

**Stp1:- To sum the sales for all products in the "Electronics" category for April using INDEX, MATCH, and SUMIF**

**Stp2:- Formula**

**=SUMIF(C2:C7, "Electronics", D2:D7) + SUMIF(C2:C7, "Electronics", E2:E7) + SUMIF(C2:C7, "Electronics", F2:F7) + SUMIF(C2:C7, "Electronics", G2:G7) + SUMIF(C2:C7, "Electronics", H2:H7)**

| **Category** | **Total April Sales** |
| --- | --- |
| Electronics | 540 |

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

**Stp1:- To calculate the average sales for Product D (PRODD) across all months using INDEX and MATCH,**

### Step2:-Formula

**=AVERAGE(INDEX(D2:H7, MATCH("PRODD", B2:B7, 0), 0))**

| **Product** | **Average Sales** |
| --- | --- |
| PRODD | 110 |

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

**Stp1:- To find the sales for Product ID 105 in May using the INDEX and MATCH functions**

### Stp2:-Formula

=INDEX(G2:H7, MATCH(105, A2:A7, 0), 1)

| **Product ID** | **Month** | **Sales** |
| --- | --- | --- |
| 105 | May | 260 |

1. **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.**

**Stp 1:- Setup**

* + **Designate Cell J1 for the Product Name (e.g., PRODA).**
  + **Designate Cell J2 for the Month (e.g., Mar Sales).**
  + **Designate Cell J3 for displaying the Sales Result.**

### Stp 2:- Sales Data Table

| **ProductID** | **Product** | **Category** | **Jan Sales** | **Feb Sales** | **Mar Sales** | **Apr Sales** | **May Sales** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 101 | PRODA | Electronics | 120 | 130 | 140 | 150 | 160 |
| 102 | PRODB | Furniture | 150 | 160 | 170 | 180 | 190 |
| 103 | PRODC | Electronics | 200 | 210 | 220 | 230 | 240 |
| 104 | PRODD | Clothing | 90 | 100 | 110 | 120 | 130 |
| 105 | PRODE | Furniture | 220 | 230 | 240 | 250 | 260 |
| 106 | PRODF | Electronics | 130 | 140 | 150 | 160 | 170 |

Step 3:- Dynamic Lookup Formula

| **Input** | **Cell Reference** | **Value** |
| --- | --- | --- |
| Product Name | J1 | PRODA |
| Month | J2 | Mar Sales |
| **Sales Result** | J3 | =INDEX(D2  , MATCH(J1, B2  , 0), MATCH(J2, D1  , 0)) |

**=INDEX(D2:H7, MATCH(J1, B2:B7, 0), MATCH(J2, D1:H1, 0))**

| **Output** | **Cell Reference** | **Value** |
| --- | --- | --- |
| Sales | J3 | 140 |