Data Visualization

Lab Assignment: 03

Topic: INDEX AND MATCH

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

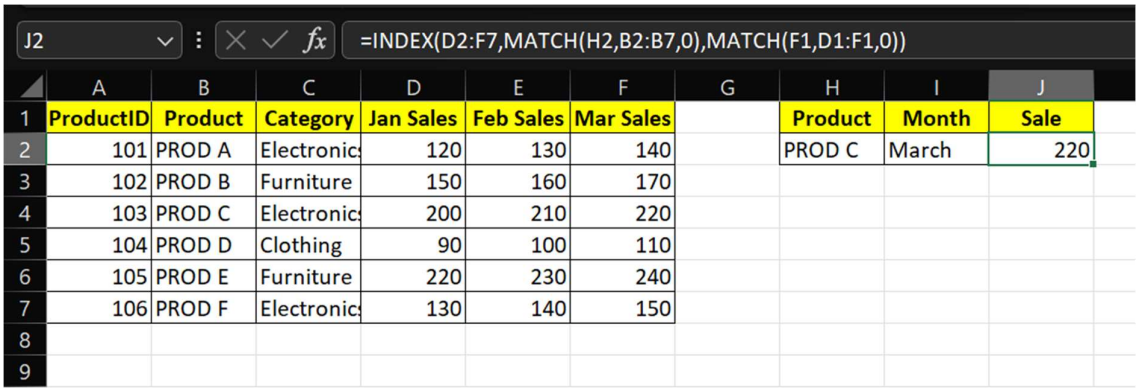
7. Use INDEX and MATCH to find the sales for Product ID 105 in May.

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

Solutions:

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

Formula: **=INDEX(D2:F7,MATCH(H2,B2:B7,0),MATCH(F1,D1:F1,0))**

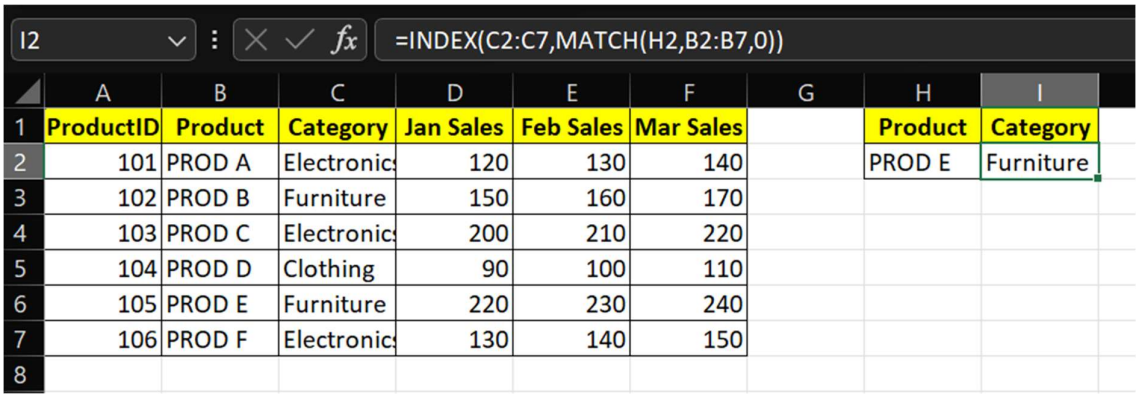


J2 =INDEX(D2:F7,MATCH(H2,B2:B7,0),MATCH(F1,D1:F1,0))

	A	B	C	D	E	F	G	H	I	J
1	ProductID	Product	Category	Jan Sales	Feb Sales	Mar Sales		Product	Month	Sale
2	101	PROD A	Electronic	120	130	140		PROD C	March	220
3	102	PROD B	Furniture	150	160	170				
4	103	PROD C	Electronic	200	210	220				
5	104	PROD D	Clothing	90	100	110				
6	105	PROD E	Furniture	220	230	240				
7	106	PROD F	Electronic	130	140	150				
8										
9										

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

Formula: **=INDEX(C2:C7,MATCH(H2,B2:B7,0))**

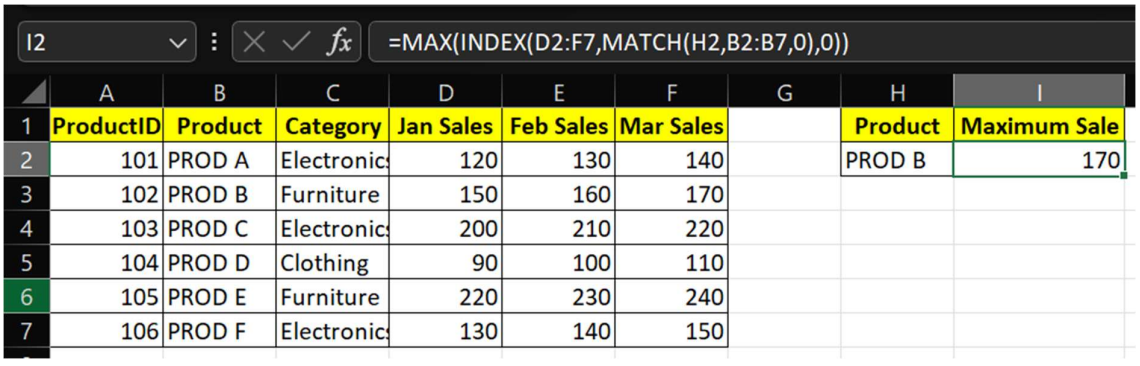


I2 =INDEX(C2:C7,MATCH(H2,B2:B7,0))

	A	B	C	D	E	F	G	H	I
1	ProductID	Product	Category	Jan Sales	Feb Sales	Mar Sales		Product	Category
2	101	PROD A	Electronic	120	130	140		PROD E	Furniture
3	102	PROD B	Furniture	150	160	170			
4	103	PROD C	Electronic	200	210	220			
5	104	PROD D	Clothing	90	100	110			
6	105	PROD E	Furniture	220	230	240			
7	106	PROD F	Electronic	130	140	150			
8									

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

Formula: **=MAX(INDEX(D2:F7,MATCH(H2,B2:B7,0),0))**

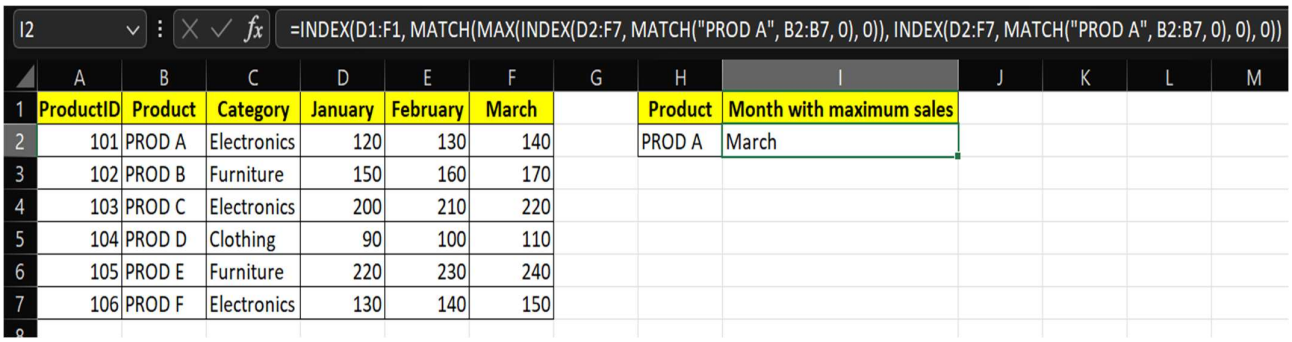


I2 =MAX(INDEX(D2:F7,MATCH(H2,B2:B7,0),0))

	A	B	C	D	E	F	G	H	I
1	ProductID	Product	Category	Jan Sales	Feb Sales	Mar Sales		Product	Maximum Sale
2	101	PROD A	Electronic	120	130	140		PROD B	170
3	102	PROD B	Furniture	150	160	170			
4	103	PROD C	Electronic	200	210	220			
5	104	PROD D	Clothing	90	100	110			
6	105	PROD E	Furniture	220	230	240			
7	106	PROD F	Electronic	130	140	150			

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

Formula: **=INDEX(D1:F1, MATCH(MAX(INDEX(D2:F7, MATCH("PROD A", B2:B7, 0), 0)), INDEX(D2:F7, MATCH("PROD A", B2:B7, 0), 0), 0))**



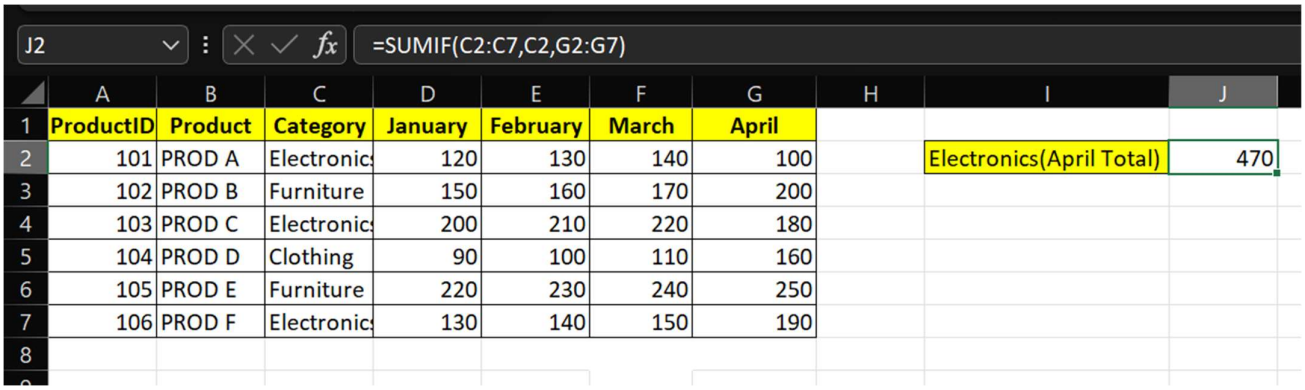
ProductID	Product	Category	January	February	March
101	PROD A	Electronics	120	130	140
102	PROD B	Furniture	150	160	170
103	PROD C	Electronics	200	210	220
104	PROD D	Clothing	90	100	110
105	PROD E	Furniture	220	230	240
106	PROD F	Electronics	130	140	150

Product	Month with maximum sales
PROD A	March

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

Formula: **=SUMIF(C2:C7,C2,G2:G7)**

Assuming "April" is an additional column

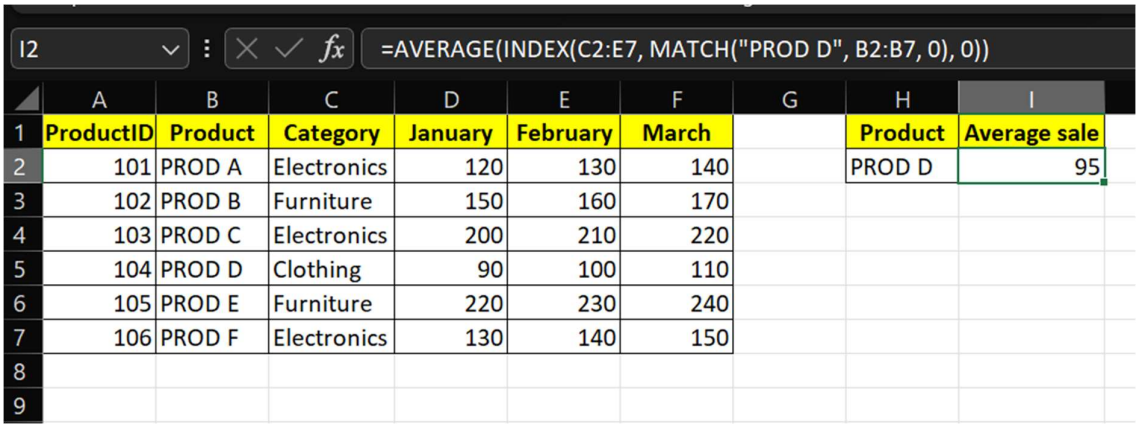


ProductID	Product	Category	January	February	March	April
101	PROD A	Electronics	120	130	140	100
102	PROD B	Furniture	150	160	170	200
103	PROD C	Electronics	200	210	220	180
104	PROD D	Clothing	90	100	110	160
105	PROD E	Furniture	220	230	240	250
106	PROD F	Electronics	130	140	150	190

Electronics(April Total)	470

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

Formula: **=AVERAGE(INDEX(C2:E7, MATCH("PROD D", B2:B7, 0), 0))**



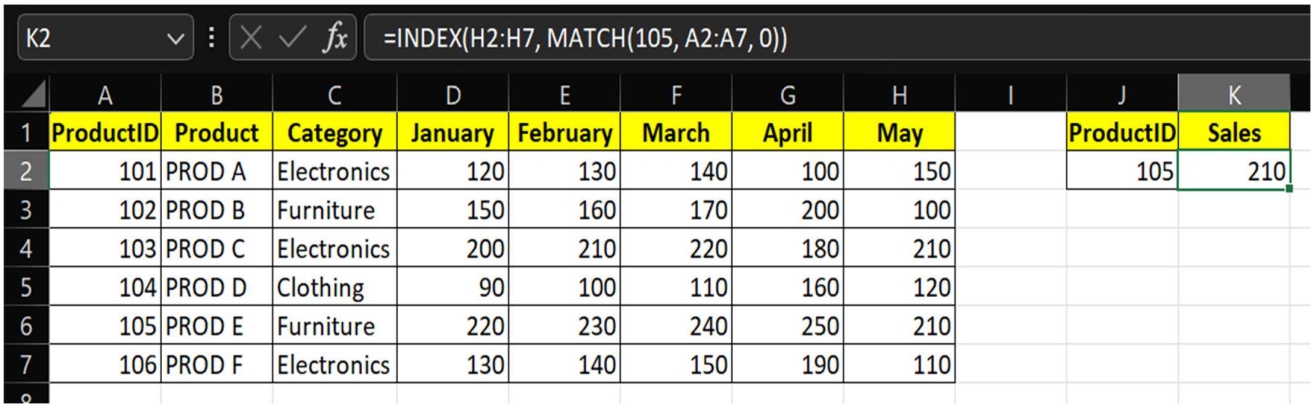
I2 | =AVERAGE(INDEX(C2:E7, MATCH("PROD D", B2:B7, 0), 0))

	A	B	C	D	E	F	G	H	I
1	ProductID	Product	Category	January	February	March		Product	Average sale
2	101	PROD A	Electronics	120	130	140		PROD D	95
3	102	PROD B	Furniture	150	160	170			
4	103	PROD C	Electronics	200	210	220			
5	104	PROD D	Clothing	90	100	110			
6	105	PROD E	Furniture	220	230	240			
7	106	PROD F	Electronics	130	140	150			
8									
9									

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

Formula: **=INDEX(H2:H7, MATCH(105, A2:A7, 0))**

Assuming "May" is an additional column

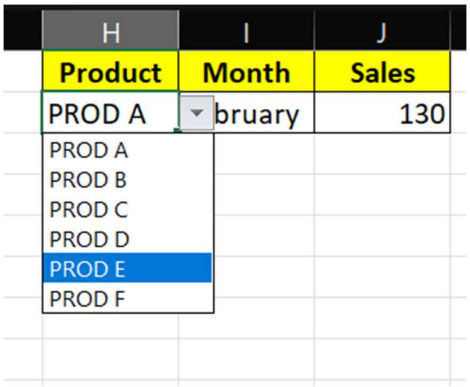


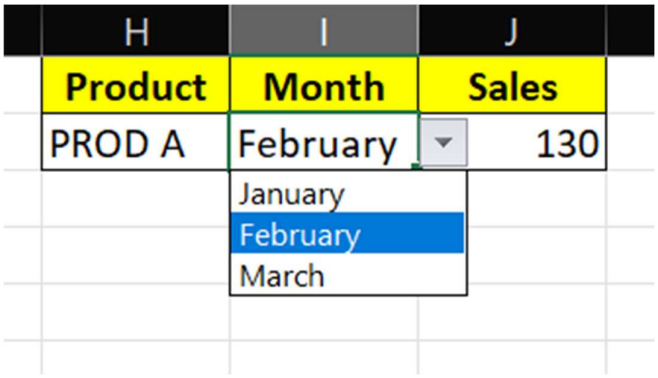
K2 | =INDEX(H2:H7, MATCH(105, A2:A7, 0))

	A	B	C	D	E	F	G	H	I	J	K
1	ProductID	Product	Category	January	February	March	April	May		ProductID	Sales
2	101	PROD A	Electronics	120	130	140	100	150		105	210
3	102	PROD B	Furniture	150	160	170	200	100			
4	103	PROD C	Electronics	200	210	220	180	210			
5	104	PROD D	Clothing	90	100	110	160	120			
6	105	PROD E	Furniture	220	230	240	250	210			
7	106	PROD F	Electronics	130	140	150	190	110			

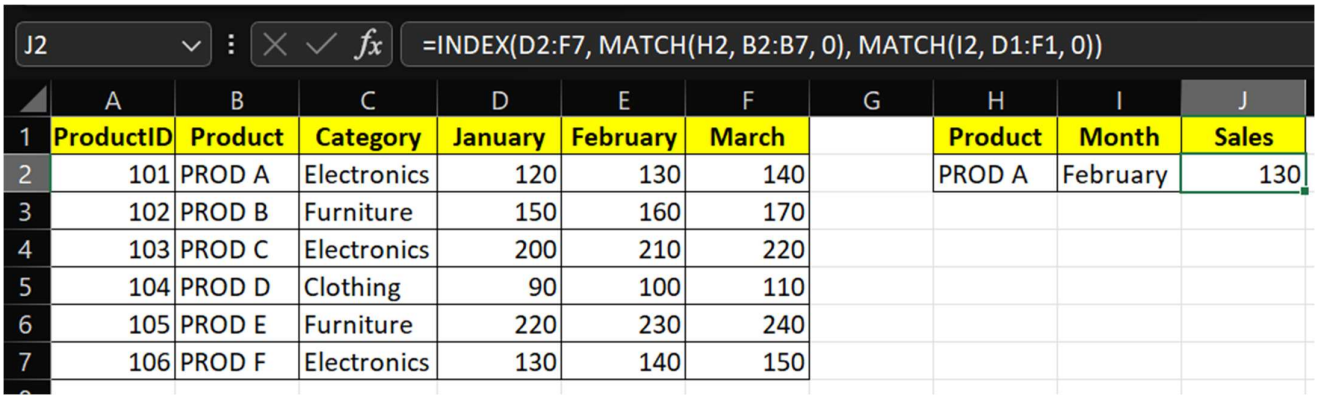
8. Use INDEX and MATCH to create a dynamic lookup where the user can input a product and a month, and the formula returns the corresponding sales.

Created drop down for both "Product" and "Month"





Formula: **=INDEX(D2:F7, MATCH(H2, B2:B7, 0), MATCH(I2, D1:F1, 0))**



	A	B	C	D	E	F	G	H	I	J
1	ProductID	Product	Category	January	February	March		Product	Month	Sales
2	101	PROD A	Electronics	120	130	140		PROD A	February	130
3	102	PROD B	Furniture	150	160	170				
4	103	PROD C	Electronics	200	210	220				
5	104	PROD D	Clothing	90	100	110				
6	105	PROD E	Furniture	220	230	240				
7	106	PROD F	Electronics	130	140	150				