Lab Assignment 4

Dataset Given

	A	B	C	D	E	F	G	H
1	ProductID	Product	Category	Jan Sales	Feb Sales	March Sales	Apr Sales	May Sales
2	101	PRODA	Electronics	120	130	140	150	160
3	102	PRODB	Furniture	150	160	170	180	190
4	103	PRODC	Electronics	200	210	220	230	240
5	104	PRODD	Clothing	90	100	110	120	130
6	105	PRODE	Furniture	220	230	240	250	260
7	106	PRODF	Electronics	130	140	150	160	170
8								

Q1. Use INDEX and MATCH to find the sales for Product C in March.

Ans. Formula Used: =INDEX(D2:H7,MATCH("PRODC",B2:B7,0),3)
Output Obtained: Sales for Product C in March = 220

	A	B	C	D	E	F	G	H
1	ProductID	Product	Category	Jan Sales	Feb Sales	March Sales	Apr Sales	May Sales
2	101	PRODA	Electronics	120	130	140	150	160
3	102	PRODB	Furniture	150	160	170	180	190
4	103	PRODC	Electronics	200	210	220	230	240
5	104	PRODD	Clothing	90	100	110	120	130
6	105	PRODE	Furniture	220	230	240	250	260
7	106	PRODF	Electronics	130	140	150	160	170
8								
9			Q1					
10			Sales for Product C in March.					
11			220					

Q2. Use INDEX and MATCH to find the category for Product E.

Ans. Formula Used: =INDEX(C2:H7,MATCH("PRODE",B2:B7,0),1)
Output Obtained: Category for Product E = Furniture

	A	B	C	D	E	F	G	H
1	ProductID	Product	Category	Jan Sales	Feb Sales	March Sales	Apr Sales	May Sales
2	101	PRODA	Electronics	120	130	140	150	160
3	102	PRODB	Furniture	150	160	170	180	190
4	103	PRODC	Electronics	200	210	220	230	240
5	104	PRODD	Clothing	90	100	110	120	130
6	105	PRODE	Furniture	220	230	240	250	260
7	106	PRODF	Electronics	130	140	150	160	170
8								
9		Q2						
10		Category for Product E						
11		Furniture						

Q3. Use INDEX and MATCH to find the maximum sales for Product B across all months.

Ans. Formula Used:
=MAX(INDEX(D2:H7,MATCH("PRODB",B2:B7,0),1),INDEX(D2:H7,MATCH("PRODB",B2:B7,0),2),INDEX(D2:H7,MATCH("PRODB",B2:B7,0),3),INDEX(D2:H7,MATCH("PRODB",B2:B7,0),4),INDEX(D2:H7,MATCH("PRODB",B2:B7,0),5))

Output Obtained: Max Sales for Product B across all months = 190

	A	B	C	D	E	F	G	H
1	ProductID	Product	Category	Jan Sales	Feb Sales	March Sales	Apr Sales	May Sales
2	101	PRODA	Electronics	120	130	140	150	160
3	102	PRODB	Furniture	150	160	170	180	190
4	103	PRODC	Electronics	200	210	220	230	240
5	104	PRODD	Clothing	90	100	110	120	130
6	105	PRODE	Furniture	220	230	240	250	260
7	106	PRODF	Electronics	130	140	150	160	170
8								
9		Q3						
10		Maximum sales for Product B across all months.						
11		190						

Q4. Use INDEX and MATCH to find the month with the maximum sales for Product A.

Ans. Formula Used:
=MAX(INDEX(D2:H7,MATCH("PRODA",B2:B7,0),1),INDEX(D2:H7,MATCH("PRODA",B2:B7,0),2),INDEX(D2:H7,MATCH("PRODA",B2:B7,0),3),INDEX(D2:H7,MATCH("PRODA",B2:B7,0),4),INDEX(D2:H7,MATCH("PRODA",B2:B7,0),5))

Output Obtained: Maximum sales were made in the month of May for PRODA = 160

	C	D	E	F	G	H
1	Category	Jan Sales	Feb Sales	March Sales	Apr Sales	May Sales
2	Electronics	120	130	140	150	160
3	Furniture	150	160	170	180	190
4	Electronics	200	210	220	230	240
5	Clothing	90	100	110	120	130
6	Furniture	220	230	240	250	260
7	Electronics	130	140	150	160	170
8						
9	Q4					
10	Month with the maximum sales for Product A.					
11	160	May				

Q5. Use INDEX, MATCH, and SUMIF to sum the sales for all products in the "Electronics" category for April.

Ans. Formula Used: =SUMIF(C2:C7,"Electronics",G2:G7)
Output Obtained: Sales of Electronics category = 540

	C	D	E	F	G	H
1	Category	Jan Sales	Feb Sales	March Sales	Apr Sales	May Sales
2	Electronics	120	130	140	150	160
3	Furniture	150	160	170	180	190
4	Electronics	200	210	220	230	240
5	Clothing	90	100	110	120	130
6	Furniture	220	230	240	250	260
7	Electronics	130	140	150	160	170
8						
9		Q5				
10		Sales for all products in the "Electronics" category for April.				
11		540				

Q6. Use INDEX and MATCH to calculate the average sales for Product D across all months.

Ans. Formula Used:
=AVERAGE(INDEX(D2:H7,MATCH("PRODD",B2:B7,0),1),INDEX(D2:H7,MATCH("PRODD",B2:B7,0),2),INDEX(D2:H7,MATCH("PRODD",B2:B7,0),3),INDEX(D2:H7,MATCH("PRODD",B2:B7,0),4),INDEX(D2:H7,MATCH("PRODD",B2:B7,0),5))

Output Obtained: Average sales for product D across all months = 110

	C	D	E	F	G	H
1	Category	Jan Sales	Feb Sales	March Sales	Apr Sales	May Sales
2	Electronics	120	130	140	150	160
3	Furniture	150	160	170	180	190
4	Electronics	200	210	220	230	240
5	Clothing	90	100	110	120	130
6	Furniture	220	230	240	250	260
7	Electronics	130	140	150	160	170
8						
9		Q6				
10		Average sales for Product D across all months.				
11		110				

Q7. Use INDEX and MATCH to find the sales for Product ID 105 in May.

Ans. Formula Used: =INDEX(D2:H7,MATCH(105,A2:A7,0),5)
Output Obtained: Sales in May for Product ID 105 = 260

	C	D	E	F	G	H
1	Category	Jan Sales	Feb Sales	March Sales	Apr Sales	May Sales
2	Electronics	120	130	140	150	160
3	Furniture	150	160	170	180	190
4	Electronics	200	210	220	230	240
5	Clothing	90	100	110	120	130
6	Furniture	220	230	240	250	260
7	Electronics	130	140	150	160	170
8						
9		Q7				
10		Sales for Product ID 105 in May				
11		260				

Q8. 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.

Ans. To make the lookup dynamic, we use the data validation feature to allow various inputs without manually changing the formula again and again.

Formula Used: =INDEX(D2:H7,MATCH(C12,B2:B7,0),MATCH(D12,D1:H1,0))
Output Obtained: Example = PRODD Apr Sales = 120

	C	D	E	F	G	H
1	Category	Jan Sales	Feb Sales	March Sales	Apr Sales	May Sales
2	Electronics	120	130	140	150	160
3	Furniture	150	160	170	180	190
4	Electronics	200	210	220	230	240
5	Clothing	90	100	110	120	130
6	Furniture	220	230	240	250	260
7	Electronics	130	140	150	160	170
8						
9		Q8				
10						
11		Product	Month	Sales		
12		PRODD	Apr Sales		120	