

DATA VISUALIZATION

Lab Assignment-1

Assume you have the following dataset in an Excel worksheet starting from cell

A1: Worksheet: Sales Data

ProductID	Product	Sales	Target	Region
101	Product A	120	150	North
102	Product B	150	140	South
103	Product C	200	200	East
104	Product D	90	100	West
105	Product E	220	210	North
106	Product F	130	160	South

1. Use the IF function to evaluate whether each product met its sales target.

Ans. 

	A	B	C	D	E	F
1	ProductID	Product	Sales	Target	Region	Met Target
2	101	Product A	120	150	North	No=IF(C2>=D2,"Yes","No")
3	102	Product B	150	140	South	Yes=IF(C3>=D3,"Yes","No")
4	103	Product C	200	200	East	Yes=IF(C4>=D4,"Yes","No")
5	104	Product D	90	100	West	No=IF(C5>=D5,"Yes","No")
6	105	Product E	220	210	North	Yes=IF(C6>=D6,"Yes","No")
7	106	Product F	130	160	South	No=IF(C7>=D7,"Yes","No")

2. Use the IF function to determine if a product is eligible for a regional bonus. Products in the "North" region with sales over 200 are eligible.

Ans. 

	A	B	C	D	E	F	G
1	ProductID	Product	Sales	Target	Region	Met Target	Eligible for Bonus
2	101	Product A	120	150	North	No	No=IF(AND(E2="North", C2>200), "Yes", "No")
3	102	Product B	150	140	South	Yes	No=IF(AND(E3="North", C2>200), "Yes", "No")
4	103	Product C	200	200	East	Yes	No=IF(AND(E4="North", C2>200), "Yes", "No")
5	104	Product D	90	100	West	No	No=IF(AND(E5="North", C2>200), "Yes", "No")
6	105	Product E	220	210	North	Yes	Yes=IF(AND(E6="North", C2>200), "Yes", "No")
7	106	Product F	130	160	South	No	No=IF(AND(E7="North", C2>200), "Yes", "No")

3. Use nested IF functions to assign a commission rate based on sales. Sales ≥ 200 get a 10% commission, sales ≥ 150 get a 7% commission, and others get a 5% commission.

Ans. 

	A	B	C	D	E	F	G
1	ProductID	Product	Sales	Target	Region	Commission Rate	
2	101	Product A	120	150	North	0.05	Formula: =IF(C2>=200, "0.1", IF(C2>=150, "0.07", "0.05"))
3	102	Product B	150	140	South	0.07	
4	103	Product C	200	200	East	0.1	
5	104	Product D	90	100	West	0.05	
6	105	Product E	220	210	North	0.1	
7	106	Product F	130	160	South	0.05	

4. Use the IF function to calculate a bonus amount. If sales met or exceeded the target, the bonus is 10% of the sales; otherwise, it's 5%.

Ans. 

	A	B	C	D	E	F	G	H
1	ProductID	Product	Sales	Target	Region	Commission Rate	Bonus Amount	
2	101	Product A	120	150	North	0.05	6	Formula: =IF(C2 >= D2, C2 * 0.10, C2 * 0.05)
3	102	Product B	150	140	South	0.07	15	
4	103	Product C	200	200	East	0.1	20	
5	104	Product D	90	100	West	0.05	4.5	
6	105	Product E	220	210	North	0.1	22	
7	106	Product F	130	160	South	0.05	6.5	

5. Use the IF function to categorize sales performance as "Excellent" (≥ 200), "Good" (≥ 150), or "Needs Improvement" (< 150).

Ans. 

	A	B	C	D	E	F	G	H	I	J
1	ProductID	Product	Sales	Target	Region	Commission Rate	Bonus Amount	Performance Category		
2	101	Product A	120	150	North	0.05	6	Needs Improvement	Formula: =IF(C2 >= 200, "Excellent", IF(C2 >= 150, "Good", "Needs Improvement"))	
3	102	Product B	150	140	South	0.07	15	Good		
4	103	Product C	200	200	East	0.1	20	Excellent		
5	104	Product D	90	100	West	0.05	4.5	Needs Improvement		
6	105	Product E	220	210	North	0.1	22	Excellent		
7	106	Product F	130	160	South	0.05	6.5	Needs Improvement		