TOP 40 EXCEL FORMULAE FOR DATA ANALYTICS BY ANKIT KUMAR

1. SUM
- Formula: =SUM(A1:A10)
- Description: Adds up all the numbers in a specified range.

2. AVERAGE
- Formula: =AVERAGE(A1:A10)
- Description: Calculates the average of numbers in a range.

3. IF
- Formula: =IF(A1>10, "Yes", "No")
- Description: Returns one value if a condition is true, and another value if it's false.

4. VLOOKUP
- Formula: =VLOOKUP(A1, B1:C10, 2, FALSE)
  VLOOKUP ek Excel function hai jo kisi list mein diya gaya data dhoondhne aur uske aage ka related data dikhane ke liye use hota hai.
  VLOOKUP Excel ka ek function hai jo ek column mein di gayi value ko doosre column ki corresponding value ke saath match karta hai.

5. HLOOKUP
- Formula: =HLOOKUP(A1, A1:D4, 2, FALSE)
- Description: Similar to VLOOKUP but searches horizontally.

7. MATCH
- Formula: =MATCH(A1, B1:B10, 0)
- Description: Returns the relative position of an item in a range.

8. CONCATENATE (or CONCAT)
- Formula: =CONCATENATE(A1, " ", B1)
- Description: Combines multiple values into one string.

9. COUNTIF
- Formula: =COUNTIF(A1:A10, ">5")
- Description: Counts the number of cells in a range that meet a single criterion.

10. SUMIF
- Formula: =SUMIF(A1:A10, ">5")
- Description: Adds the cells in a range that meet a specified condition.

11. COUNTIFS
- Formula: =COUNTIFS(A1:A10, ">5", B1:B10, "<10")
- Description: Counts the number of cells that meet multiple criteria.

12. SUMIFS
- Formula: =SUMIFS(A1:A10, B1:B10, ">5")
- Description: Adds the cells that meet multiple conditions.

I6		fx	=SUMIFS(F5:F15,C5:C15,"red",D5:D15,"TX")			

	A	B	C	D	E	F	G	H	I	J	K
1											
2		**SUMIFS function**									
3											
4		Date	Color	State	Qty	Total		Criteria	Result		
5		9-Jan	Red	TX	1	$18.00		Red	$175.00		
6		23-Jan	Blue	CO	2	$34.00		Red and TX	$88.00		
7		3-Feb	Red	NM	2	$36.00					
8		18-Feb	Blue	TX	1	$17.00					
9		2-Mar	Blue	AZ	3	$51.00					
10		15-Mar	Red	AZ	1	$17.00					
11		25-Mar	Red	NV	2	$34.00					
12		3-Apr	Blue	AZ	1	$17.00					
13		11-Apr	Red	TX	2	$34.00					
14		30-Apr	Blue	CO	1	$17.00					
15		1-May	Red	TX	2	$36.00					
16											

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13. LEFT
   ● Formula: =LEFT(A1, 3)
   ● Description: Returns a specified number of characters from the start of a text string.

D5		fx	=LEFT(B5,5)	

	A	B	C	D	E
1					
2		**LEFT Function**			
3					
4		**Text given**	**Formula**	**Result**	
5		84111-10001	=LEFT(A5,5)	84111	
6		91-98123-45632	=LEFT(B6,2)	91	
7		Original Text	=LEFT(B7,5)	Origi	

14. RIGHT
   ● Formula: =RIGHT(A1, 3)
   ● Description: Returns a specified number of characters from the end of a text string.
15. LEN
   ● Formula: =LEN(A1)
   ● Description: Returns the number of characters in a text string.
16. TRIM
   ● Formula: =TRIM(A1)
   ● Description: Removes all extra spaces from text except for single spaces between words.
17. TEXT
   ● Formula: =TEXT(A1, "dd/mm/yyyy")
   ● Description: Formats a number or date into a text string with a specified format.

18. PROPER
   - Formula: =PROPER(A1)
   - Description: Capitalizes the first letter of each word in a text string.
19. NOW
   - Formula: =NOW()
   - Description: Returns the current date and time.
20. RANK
   - Formula: =RANK(A1, A1:A10)
   - Description: Returns the rank of a number in a list of numbers.

E5			×	✓	fx	=RANK(D5,$D$5:$D$12)				

	A	B	C	D	E	F	G	H	I	J
1										
2		**RANK function**								
3										
4		City	State	Population	Rank					
5		Houston	TX	2,100,263	4					
6		Phoenix	AZ	1,445,632	6					
7		New York	NY	8,175,133	1					
8		Philadelphia	PE	1,526,006	5					
9		Los Angeles	CA	3,792,621	2					
10		San Antonio	TX	1,327,407	7					
11		San Diego	CA	1,307,402	8					
12		Chicago	IL	2,695,598	3					
13										
14										
15								EXCELJET		
16										

21 textsplit
Excel mein, `TEXTSPLIT` function kisi text ko alag-alag parts mein tod ke alag cells mein daalne ke kaam aata hai, jaise agar words ko comma ya space se alag karna ho.

Formula bar: `=TEXTSPLIT(B5,",")`

TEXTSPLIT function

Text
Jim,Brown,33,Seattle,WA
Aya,Shizuoka,27,Portland,OR
Janice,Drexel,41,Alta,WY
Steve,Malloy,37,Moab,UT
Timothy,Sanders,50,Austin,TX
Jordan,Smith,31,St. Paul,MN
Jason,Chang,40,Atlanta,GA
Emily,Harris,38,Denver,CO
Yuki,Nomura,35,Boise,ID
Kelly,Grady,29,El Paso,TX
Walter,Brown,55,Santa Fe,NM

First	Last	Age	City	State
Jim	Brown	33	Seattle	WA
Aya	Shizuoka	27	Portland	OR
Janice	Drexel	41	Alta	WY
Steve	Malloy	37	Moab	UT
Timothy	Sanders	50	Austin	TX
Jordan	Smith	31	St. Paul	MN
Jason	Chang	40	Atlanta	GA
Emily	Harris	38	Denver	CO
Yuki	Nomura	35	Boise	ID
Kelly	Grady	29	El Paso	TX
Walter	Brown	55	Santa Fe	NM

22. EXACT

Formula bar: `=EXACT(B6,C6)`

EXACT function

EXACT (text1, text2)

Text 1	Text 2	Result
Apple	Apple	TRUE
Apple	apple	FALSE
ABC123	ABC123	TRUE
123	123	TRUE
A stitch in time	A stitch in time	TRUE
A stitch in time	A stitch in Time	FALSE

23. SUM PRODUCT

I5   fx   =SUMPRODUCT(--(C5:C14="red"),F5:F14)

SUMPRODUCT function

State	Color	Quantity	Price	Total
TX	Red	10	$15.00	$150.00
UT	Blue	6	$18.00	$108.00
CO	Red	14	$15.00	$210.00
NV	Green	9	$16.00	$144.00
TX	Blue	11	$18.00	$198.00
CO	Blue	10	$18.00	$180.00
TX	Red	8	$15.00	$120.00
UT	Green	9	$16.00	$144.00
NV	Blue	11	$18.00	$198.00
CO	Green	10	$16.00	$160.00

Filter	Total
Red	$480.00
TX and Red	$270.00
CO and Blue	$180.00

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24. SUBSTITUDE

C6   fx   =SUBSTITUTE(B6,"t","b")

SUBSTITUTE function

SUBSTITUTE (text, old_text,new_text, [instance_num])

Input	Output	Formula	Notes
tuttle	bubble	=SUBSTITUTE(B6,"t","b")	All instances replaced
tuttle	buttle	=SUBSTITUTE(B7,"t","b",1)	First instance only replaced
Cat, cat	Cat, dog	=SUBSTITUTE(B8,"cat","dog")	Substitute IS case sensitive
##cash##	cash	=SUBSTITUTE(B9,"#","")	Replace with nothing

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25. IF ERROR

26. XLOOKUP

27. COUNTA()

=COUNTA(B5:B15)

	A	B	C	D	E	F	G	H	I	J
1										
2		**COUNTA function**								
3										
4		Value								
5	1	puppy								
6	2	apple		Count	9					
7	3	100								
8				// empty cell ignored						
9	4	30%								
10				// empty cell ignored						
11	5	0.5								
12	6	28-Oct-2022								
13	7	8:30 AM								
14	8	#N/A		// error included						
15	9	00120								
16										

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28. INDEX()J

=INDEX(E3:E9,5)

	A	B	C	D	E	F	G	H	I	J
1										
2			ID	First Name	Last Name	Salary		ID		
3			72	Emily	Smith	$64,901		Salary	$58,339	
4			66	James	Anderson	$70,855				
5			14	Mia	Clark	$188,657				
6			30	John	Lewis	$97,566				
7			53	Jessica	Walker	$58,339 ←				
8			56	Mark	Reed	$125,180				
9			79	Richard	Lopez	$91,632				
10										

29. MID()

| D5 | : × ✓ fx ∨ | =FORMULATEXT(C5) |

	A	B	C	D	E	F	G
1							
2		**MID function**					
3							
4		Value	Result	Formula			
5		ABC	A	=MID(B5,1,1)			
6		ABC	AB	=MID(B6,1,2)			
7		ABC	ABC	=MID(B7,1,3)			
8		The cat in the hat	cat	=MID(B8,5,3)			
9		The cat in the hat	hat	=MID(B9,16,3)			
10		Las Vegas, NV 88901	Las Vegas	=MID(B10,1,9)			
11		Las Vegas, NV 88901	NV	=MID(B11,12,2)			
12		Las Vegas, NV 88901	88901	=MID(B12,15,5)			
13		303-512-4271	303	=MID(B13,1,3)			
14		303-512-4271	512	=MID(B14,5,3)			
15		303-512-4271	4271	=MID(B15,9,4)			
16		https://exceljet.net	exceljet.net	=MID(B16,9,100)			
17							

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30. PMT(B4/12, B3,-B2)

| File | Home | Insert | Draw | Page Layout | Formulas | Data | Review |

| B6 | : × ✓ fx | =PMT(B4/12,B3,-B2) |

	A	B
1	**Automobile**	**Amounts**
2	Loan Amt	38,000
3	Months	60
4	Int Rate	4.25%
5		
6	**Payment (PMT Function)**	$704.12
7		

31. Textjoin

F5	:	× ✓ fx	=TEXTJOIN(", ",TRUE,B5:E5)

	A	B	C	D	E	F	G	H
1								
2		**TEXTJOIN function**						
3								
4		Value 1	Value 2	Value 3	Value 4	Result		
5		1	2	3	4	1, 2, 3, 4		
6		One	Two	Three	Four	One, Two, Three, Four		
7		limes	figs	pears	plums	limes, figs, pears, plums		
8		limes		pears		limes, pears		
9			mangos			mangos		
10		10%	15%	20%	25%	0.1, 0.15, 0.2, 0.25		
11		1-Jul-21	2-Jul-21	3-Jul-21	4-Jul-21	44378, 44379, 44380, 44381		
12		$29.95	$49.50	$9.95	$75.00	29.95, 49.5, 9.95, 75		
13								
14								
15						EXCELJET		
16								

32. Upper

C5	:	× ✓ fx	=UPPER(B5)

	A	B	C	D	E	F	G
1							
2		**UPPER function**					
3							
4		Input	Output				
5		Apple	APPLE				
6		APPLE	APPLE				
7		Ben Franklin	BEN FRANKLIN				
8		apples, pears	APPLES, PEARS				
9		xyz-001	XYZ-001				
10		def-202-yyt	DEF-202-YYT				
11		12345	12345	// number unaffected			
12		$1,000.00	1000	// number formatting lost			
13		25-Jun-21	44372	// date formatting lost			
14							
15				EXCELJET			
16							

33. Lower

	C5	▼	:	×	✓	fx	=LOWER(B5)		

◢	A	B	C	D	E	F	G
1							
2		**LOWER function**					
3							
4		Input	Output				
5		Apple	apple				
6		APPLE	apple				
7		Ben Franklin	ben franklin				
8		Apples, Pears	apples, pears				
9		XYZ-001	xyz-001				
10		DEF-202-YYT	def-202-yyt				
11		12345	12345	// number unaffected			
12		$1,000.00	1000	// number formatting lost			
13		25-Jun-21	44372	// date formatting lost			
14							
15							
16							

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34. Proper

	C5	▼	:	×	✓	fx	=PROPER(B5)		

◢	A	B	C	D	E	F	G
1							
2		**PROPER function**					
3							
4		Input	Output				
5		apple	Apple				
6		APPLE	Apple				
7		ben franklin	Ben Franklin				
8		apples, PEARS	Apples, Pears				
9		def-202-yyt	Def-202-Yyt				
10		to be or not to be	To Be Or Not To Be	// all words capitalized			
11		12345	12345	// number unaffected			
12		$1,000.00	1000	// number formatting lost			
13		25-Jun-21	44372	// date formatting lost			
14							
15							
16							

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35. Round/

ROUND function

Number	Digits	Result	
5.7845	1	5.8	// round to 1 decimal place
5.7845	2	5.78	// round to 2 decimal places
5.7845	3	5.785	// round to 3 decimal places
23542.5	0	23543	// round to nearest whole number
23542.5	-1	23540	// round to nearest 10
23542.5	-2	23500	// round to nearest 100
23542.5	-3	24000	// round to nearest 1000
23542.5	-4	20000	// round to nearest 10000

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36. Roundup

ROUNDUP function

Number	Digits	Result	
5.1242	0	6	Round up to nearest whole number
5.1242	1	5.2	Round up to 1 decimal place
5.1242	2	5.13	Round up to 2 decimal places
5.1242	3	5.125	Round up to 3 decimal places
5.1242	4	5.1242	Round up to 4 decimal places
23242.3	-1	23250	Round up to the nearest 10
23242.3	-2	23300	Round up to the nearest 100
23242.3	-3	24000	Round up to the nearest 1000
23242.3	-4	30000	Round up to the nearest 10000

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37. Roundown

D5 | =ROUNDDOWN(B5,C5)

ROUNDDOWN function

Number	Digits	Result	
5.7899	0	5	Round down to nearest whole number
5.7899	1	5.7	Round down to 1 decimal place
5.7899	2	5.78	Round down to 2 decimal places
5.7899	3	5.789	Round down to 3 decimal places
5.7899	4	5.7899	Round down to 4 decimal places
27842.5	-1	27840	Round down to the nearest 10
27842.5	-2	27800	Round down to the nearest 100
27842.5	-3	27000	Round down to the nearest 1000
27842.5	-4	20000	Round down to the nearest 10000

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38. dateif

E5 | =DATEDIF(B5,C5,"y")

DATEDIF function

Start date	End date	Unit	Result	
1-Jan-2022	1-Mar-2024	y	2	// difference in complete years
1-Jan-2022	1-Mar-2024	m	26	// difference in complete months
1-Jan-2022	1-Mar-2024	d	790	// difference in days
1-Jan-2022	1-Mar-2024	md	0	// difference in days, ignoring months and years
1-Jan-2022	1-Mar-2024	ym	2	// difference in months, ignoring days and years
1-Jan-2022	1-Mar-2024	yd	59	// difference in days, ignoring years

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39. Now

| B5 | fx | =NOW() | | | | | |

NOW function

Result	Formula	
31-May-21 17:39	=NOW()	// current date and time
24-May-21 17:39	=NOW()-7	// last week same time
7-Jun-21 17:39	=NOW()+7	// next week same time
29-Aug-21 17:39	=NOW()+90	// 90 days from now
29-Aug-21 18:00	=MROUND(NOW()+90,"1:00")	// 90 days from now, rounded to nearest hour
31-Aug-21 0:00	=EDATE(NOW(),3)	// 3 months from now, time removed
31-May-22 0:00	=EDATE(NOW(),12)	// 12 months from now, time removed
1-May-21 0:00	=EOMONTH(NOW(),-1)+1	// first day of current month
1-Dec-21 17:39	=EDATE(NOW(),6)+MOD(NOW(),6)	// 6 months from now, time preserved

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40. Today

| B5 | fx | =TODAY() | | | | | |

TODAY function

Result	Formula	
31-May-21	=TODAY()	// current date
24-May-21	=TODAY()-7	// one week in past
7-Jun-21	=TODAY()+7	// one week in future
29-Aug-21	=TODAY()+90	// 90 days from today
31-Aug-21	=EDATE(TODAY(),3)	// 3 months from today
31-May-22	=EDATE(TODAY(),12)	// 1 year from today
31-May-20	=EDATE(TODAY(),-12)	// 1 year in the past
1-May-21	=EOMONTH(TODAY(),-1)+1	// first day of current month
31-May-21 18:00	=TODAY()+TIME(18,0,0)	// today at 6:00 PM
1-Jun-21 12:00	=TODAY()+1+TIME(12,0,0)	// tomorrow at noon

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41. Ifs

| D5 | ▼ | : | × | ✓ | f_x | =IFS(C5<60,"F",C5<70,"D",C5<80,"C",C5<90,"B",C5>=90,"A") |

	A	B	C	D	E	F	G	H	I
1									
2		**IFS function**							
3									
4		Name	Score	Grade		Score	Grade		
5		Hannah	91.0	A		0	F		
6		Edward	82.8	B		60	D		
7		Miranda	91.3	A		70	C		
8		William	76.0	C		80	B		
9		Joanna	71.2	C		90	A		
10		Collin	80.6	B					
11		Mallory	85.0	B					
12		Oscar	79.2	C					
13		Arturo	76.6	C					
14		Annie	78.4	C					
15		Weston	68.2	D					
16		Joshua	71.6	C					