

## EXCEL NOTES

Business Question:		Function(s) you'll learn:
1	Total Salary and headcount by department	SUMIFS, COUNTIFS
2	All employees with more than \$100k salary	FILTER
3	All female employees with more than \$100k salary	FILTER, *
4	Lowest, highest and top 5 salary values	MIN, MAX, LARGE, SORT + TAKE
5	List of all departments	UNIQUE, COUNTA, #
6	Employee details lookup	VLOOKUP, INDEX + MATCH
7	Employee details lookup	XLOOKUP, IFERROR
8	Complex formula: Highest salary person	XLOOKUP + MAX
9	Complex formula: All employees joined in March	FILTER + MONTH
10	Complex formula: Department report of headcounts, salaries and % diff from overall average	UNIQUE, SUMIFS, COUNTIFS, #, CONDITIONAL FORMATTING

## Sample table

Emp ID	First Name	Last Name	Gender	Department	Salary	Salary Bucket	Start Date	FTE	Employee type	Work location	Tenure	Work Type
PR00007	Torrance	Collier	Female	Training	\$96,136	50k to 100k	13-Jul-20	0.3	Permanent	Wellington, New Zealand	3.94	Part time
PR00095	Devrat	Damarsingh	Female	Business Development	\$70,649	50k to 100k	13-Jan-20	1	Permanent	Hyderabad, India	4.44	Full time
PR00113	Van	Tuxwell	Female	Business Development	\$80,696	50k to 100k	17-Sep-18	1	Permanent	Columbus, USA	5.76	Full time
PR00113	Van	Tuxwell	Female	Business Development	\$80,696	50k to 100k	17-Sep-18	1	Permanent	Columbus, USA	5.76	Full time
PR00147	Minerva	Ricardot	Male	Engineering	\$120,000	Above 100k	12-Nov-18	1	Permanent	Remote	5.61	Full time
PR00246	Husein	Augar	Female	Marketing	\$67,906	50k to 100k	29-Dec-20	1	Permanent	Remote	3.48	Full time
PR00419	Billi	Fellgate	Female	Business Development	\$68,981	50k to 100k	29-Jan-19	0.8	Permanent	Remote	5.40	Part time
PR00576	Lalitchandra	Vadali	Female	Legal	\$63,705	50k to 100k	5-Aug-19	1	Permanent	Hyderabad, India	4.88	Full time
PR00746	Hogan	Iles	Female	Accounting	\$114,177	Above 100k	18-Mar-20	1	Permanent	Wellington, New Zealand	4.26	Full time
PR00770	Beryl	Burnsyde	Male	Legal	\$29,775	Under 50k	1-Oct-20	1	Permanent	Wellington, New Zealand	3.72	Full time
PR00882	Jill	Shipsey	Male	Accounting	\$52,964	50k to 100k	2-Apr-21	0.3	Permanent	Columbus, USA	3.22	Part time
PR00893	Vasavi	Veeravasrapu	Male	Human Resources	\$50,310	50k to 100k	30-Mar-21	0.4	Permanent	Hyderabad, India	3.23	Part time
PR00916	Inger	Chapelhow	Female	Research and Development	\$84,310	50k to 100k	1-Nov-21	1	Permanent	Remote	2.64	Full time
PR01055	Devasree	Fullara	Male	Accounting	\$35,936	Under 50k	21-May-18	1	Permanent	Chennai, India	6.09	Full time
PR01159	Mollie	Hanway	Male	Engineering	\$112,646	Above 100k	21-Oct-19	0.6	Permanent	Seattle, USA	4.67	Part time
PR01211	Enoch	Dowrey	Male	Accounting	\$91,645	50k to 100k	27-Jan-21	1	Permanent	Auckland, New Zealand	3.40	Full time
PR01269	Eleonore	Airdrie	Female	Engineering	\$97,105	50k to 100k	17-Aug-21	1	Permanent	Columbus, USA	2.85	Full time
PR01306	Patti	Dradey	Male	Services	\$84,743	50k to 100k	24-Sep-20	1	Permanent	Auckland, New Zealand	3.74	Full time
PR01346	Adolph	McNalley	Male	Business Development	\$85,919	50k to 100k	5-Feb-18	1	Permanent	Columbus, USA	6.38	Full time
PR01383	Addi	Studdeard	Female	Product Management	\$72,503	50k to 100k	8-Feb-21	1	Permanent	Wellington, New Zealand	3.37	Full time
PR01476	Jaishree	Atasi	Male	Services	\$77,096	50k to 100k	27-Apr-18	1	Permanent	Chennai, India	6.16	Full time
PR01662	Genevra	Friday	Female	Research and Development	\$50,449	50k to 100k	14-Nov-18	0.8	Permanent	Auckland, New Zealand	5.61	Part time
PR01943	Rameshwari	Chikodi	Male	Human Resources	\$48,526	Under 50k	13-Jun-18	1	Permanent	Hyderabad, India	6.03	Full time
PR01956	Jamesy	O'Ferris	Male	Accounting	\$36,548	Under 50k	12-Nov-18	1	Permanent	Remote	5.61	Full time
PR01956	Jamesy	O'Ferris	Male	Accounting	\$36,548	Under 50k	12-Nov-18	1	Permanent	Remote	5.61	Full time
PR02010	Prerana	Nishita	Male	Product Management	\$115,191	Above 100k	22-Jun-20	1	Permanent	Hyderabad, India	4.00	Full time
PR02016	Iris	Wagg	Female	Engineering	\$58,861	50k to 100k	8-Jul-19	1	Permanent	Columbus, USA	4.96	Full time

## Queries

UNIQUE(hr[department]) == jiska unique value chahiye

List all departments and count them

Department:

=UNIQUE(staff[Department])

COUNTA =

Count:	=counta(B4#)
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COUNTIFS → COUNTIFS(criteria, cell value jisme naam likha ho criteria ka )  
COUNTIFS(hr[department], A14)

Department	Headcount	Total Salary
Training	=COUNTIFS(staff[Department],B3:B14)	
Business Development	26	
Engineering	26	
Marketing	12	
Legal	21	
Accounting	26	
Human Resources	22	
Research and Development	18	
Services	21	
Product Management	29	
Support	17	
Sales	18	

SUMIFS → SUMIFS(hr[salary],hr[department], naam criteria ka) kaunse col ka sum chahiye,  
criteria col kya hai, naam kya hai

Department	Headcount	Total Salary
Training	24	=SUMIFS(staff[Salary],staff[Department],B3:B14)
Business Development	26	
Engineering	26	
Marketing	12	
Legal	21	
Accounting	26	
Human Resources	22	
Research and Development	18	
Services	21	
Product Management	29	
Support	17	
Sales	18	

AVERAGEIFS → kaunse col ka avg chahiye, criteria col kya hai, naam kya hai

Department	Headcount	Total Salary	Avg. Salary
Training	24	\$ 2,013,215	=AVERAGEIFS(staff[Salary],staff[Department],B3:B14)
Business Development	26	\$ 2,074,327	
Engineering	26	\$ 2,131,387	
Marketing	12	\$ 773,296	
Legal	21	\$ 1,412,093	
Accounting	26	\$ 1,814,981	
Human Resources	22	\$ 1,608,406	
Research and Development	18	\$ 1,204,394	
Services	21	\$ 1,568,153	
Product Management	29	\$ 2,180,193	
Support	17	\$ 1,129,352	

FILTER → RETURN COL KYA CHAHIYE, CRITERIA KYA HAI

All Employees with >100k Salary
=FILTER(staff,staff[Salary]>100000)

<b>All Employees with &gt;100k Salary</b>						115000		
Columns 1, 2, 3, 5, 6								
=CHOOSECOLS(FILTER(staff, staff[Salary]>F67),1,2,3,5,6)						Above 100		
PR02010	Prerana	Nishita	Male	Product M	115191.4	Above 100		
PR03886	Edd	MacKnock	Male	Accountin	119022.5	Above 100		
SQ00144	Collen	Dunbleton	Male	Engineerir	118976.2	Above 100		
SQ02174	Sidoney	Yitzhok	Female	Engineerir	118442.5	Above 100		
SQ04612	Mick	Spraberry	Female	Services	120000	Above 100		
VT04093	Prasanna	Lakshmi	Female	Training	116767.6	Above 100		
VT04093	Baruna	Ogale	Female	Training	116767.6	Above 100		

## MULTIPLE FILTER CONDITIONS

Kya return chahiye, (kya criteria hai) \* (kya criteria hai)

F	G	H	I	J	K	L	M	N
			3					
108000			<b>All such "Female" Employees</b>					
			Columns 1, 2, 3, 5, 6					
Salary								
120000			=FILTER(staff, (staff[Salary]>F67)*(staff[Gender]="Female"))					
114177.2								
112646								

MIN(column name), max(column name)

MINIFS → kis col ka min chahiye, kya criteria hai, naam kya hai criteria ka

<b>Lowest, highest and top 5 salary values</b>			
	All emps	Male	Female
Lowest salary	=MINIFS(staff[Salary], staff[Gender], D3)		
Highest salary	=MAXIFS(staff[Salary], staff[Gender], D3)		
Top 5 Salaries	\$120,000.00		
	\$120,000.00		

MAXIFS → kis col ka max chahiye, kya criteria hai, naam kya hai criteria ka

LARGE → kis col ka largest chahiye, kth value

Lowest, highest and top 5 salary	
	All emps
Lowest salary	\$28,160.79
Highest salary	\$120,000.00
Top 5 Salaries	\$120,000.00
=LARGE(staff[Salary],2)	
LARGE(array, k)	

Large with condition → large(filter(kya chahiye, criteria kya hai), kth value)

	All emps	Male	Female
Lowest salary	\$28,160.79	\$28,160.79	\$28,305.08
Highest salary	\$120,000.00	\$120,000.00	\$120,000.00
Top 5	=LARGE(FILTER(staff[Salary], staff[Gender]=D\$3),g6)		
	\$120,000.00	\$29,774.76	
	\$119,022.49	\$52,963.65	
	\$118,976.16	\$50,310.09	
	\$118,442.54	\$35,936.31	
		112645.99	

Sort+take →

SORT → kis col ko sort karna, , -1 for desc 1 for asc

Top 5 Salaries	=SORT(staff[Salary],,-1)
with SORT + TAKE	SORT(array, [sort_index], [sort_order], [by_col])
	\$28,329.77
	\$28,481.16
	\$28,481.16
	28481.16

TAKE → Jiski top k values chahiye , kth value

Top 5 Salaries	=TAKE(SORT(staff[Salary],,-1),5)
with SORT + TAKE	\$120,000.00
	\$119,022.49
	\$118,976.16
	\$118,442.54

VLOOK UP → value jo doondhni hai, kidhar milegi, kaunsa col chahiye uska no. , exact match  
=false

Employee Lookup	
Employee ID	PR03886
First name:	=VLOOKUP(C4,staff,2,FALSE)
Last name:	VLOOKUP(lookup_value, table_array, col_index_num, [range_lock])

MATCH → value jo doondhni hai, kaunse col mein milegi , exact match=0 yeh row number de dega

Last name:	Scad
	=MATCH(C17,staff[Last Name],0)

INDEX → kya doondhna hai, kis row mein hai

Last name:	Scad
	43
Employee ID	=INDEX(staff[Emp ID],43)

iss wale row num mein jake emp id le aao

Last name:	Scad
	43
Employee ID	=INDEX(staff[Emp ID],MATCH(C17,staff[Last Name],0))
Department:	<small>MATCH(lookup_value, lookup_array, [match_type])</small>
Salary:	

XLOOKUP → kya value doondhni hai, kis mein doondhna hai, kya return chahiye

Employee ID	PR03886	With XLOOKUP
2 First name:	Edd	=XLOOKUP(C4,staff[Emp ID], staff[First Name])
3 Last name:	MacKnockiter	

### Complex formula: Highest salary person

One person:	=XLOOKUP(MAX(staff[Salary]), staff[Salary], staff[First Name]&" "&staff[Last Name])
	<small>XLOOKUP(lookup_value, lookup_array, return_array, [if_not_found], [match_mode], [search_mode])</small>

All persons:	=FILTER(staff[First Name]&" "&staff[Last Name], staff[Salary]=MAX(staff[Salary]))
	Mick Spraberry

LEFT → Kaunse col se chahiye, kitne character left se

All names starting with H

Emp ID	First Name	Last Name
=FILTER(staff, LEFT(staff[First Name],1)="H")		
FILTER(array, include, {if_empty})		

Emp joined after 2020

Emp ID	First Name	Last Name
=FILTER(staff, staff[Start Date]>=DATE(2020,1,1))		
FILTER(array, include, {if_empty})		

Emp joined in march

<b>Complex formula: All employees joined in March</b>		
Emp ID	First Name	Last Name
=FILTER(staff, MONTH(staff[Start Date])=3)		

Forecasting → kis year ka forecast karna, sales figure, year trend

YEARWISE SALES FIGURE	
Financial Year	Sales Figure in Crore
2017	200
2018	190
2019	205
2020	222
2021	218
2022	228
2=FORECAST(A12,B5:B10,A5:A10)	