EXCEL FOR INTERVIEWS

Sample table

Link :- https://github.com/vanshika230/Business_Analyst_Practice/blob/main/Excel/Employee_Data.xlsx

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Emp ID	First Nam	Last Nam	Gender	Departmen	SALARY	Start Dat	FTE Employee typ	Work locatio	Tenure	Work Type	Salary T	Bonus Elig	Full Name
2	PR0007	Torrance	Collier	Female	Training	96136	7/13/2020	0.3	Wellington, New	3.94	Part time	High	Not Eligible	Torrance Collier
3	PR0095	Devrat	Damarsingh	Male	Business Deve	70649	1/17/2020	1	Hyderabad, Indi	4.44	Full time	High	Eligible	Devrat Damarsingh
4	PR0113	Van	Tuxwell	Female	Business Deve	80696	9/17/2018	1	Columbus, USA	5.76	Permanent	High	Eligible	Van Tuxwell
5	PR0147	Minerva	Ricardot	Male	Engineering	120000	11/12/2018	1	Remote	5.61	Permanent	High	Not Eligible	Minerva Ricardot
6	PR0246	Husein	Augar	Female	Marketing	67906	12/29/2020	1	Remote	3.48	Permanent	Medium	Not Eligible	Husein Augar
7	PR0419	Billi	Fellgate	Female	Business Deve	68981	1/29/2019	0.8	Remote	5.4	Permanent	Medium	Eligible	Billi Fellgate
8	PR0576	Lalitchandra	Vadali	Female	Legal	63705	8/5/2019	1	Hyderabad, Indi	4.88	Full time	Medium	Not Eligible	Lalitchandra Vadali
9	PR0746	Hogan	Iles	Male	Accounting	114177	3/18/2020	1	Wellington, New	4.26	Full time	High	Not Eligible	Hogan Iles
10	PR0770	Beryl	Burnsyde	Male	Legal	29775	10/1/2020	1	Wellington, New	3.72	Full time	Low	Not Eligible	Beryl Burnsyde
11	PR0882	Jill	Shipsey	Male	Accounting	52964	4/2/2021	1	Columbus, USA	3.22	Part time	Medium	Not Eligible	Jill Shipsey
12	PR0893	Vasavi	Veeravasara	Female	Human Resou	50310	3/30/2021	0.4	Hyderabad, Indi	3.23	Part time	Medium	Not Eligible	Vasavi Veeravasarapu
13	PR0916	Inger	Chapelhow	Female	Research and	84310	11/1/2021	1	Remote	2.64	Full time	High	Not Eligible	Inger Chapelhow
14	PR1055	Devasree	Fullara	Male	Accounting	35936	5/21/2018	1	Chennai, India	6.09	Full time	Low	Not Eligible	Devasree Fullara
15	PR1159	Mollie	Hanway	Male	Engineering	112646	10/21/2019	1	Seattle, USA	4.67	Part time	High	Not Eligible	Mollie Hanway
16	PR1211	Enoch	Dower	Male	Accounting	91645	1/27/2021	0.6	Auckland, New	3.4	Full time	High	Not Eligible	Enoch Dower
17	PR1269	Eleonore	Airdrie	Female	Engineering	97105	8/17/2021	1	Columbus, USA	2.85	Full time	High	Not Eligible	Eleonore Airdrie
18	PR1306	Patti	Dradey	Female	Services	84743	9/24/2020	1	Auckland, New	3.74	Full time	High	Not Eligible	Patti Dradey
19	PR1346	Adolph	McNalley	Male	Business Deve	85919	2/5/2018	1	Columbus, USA	6.38	Full time	High	Eligible	Adolph McNalley
20	PR1383	Addi	Studdeard	Female	Product Mana	72503	4/28/2021	0.3	Wellington, New	3.37	Full time	High	Not Eligible	Addi Studdeard
21	PR1476	Jaishree	Atasi	Male	Services	12000	11/12/2018	1	Chennai, India	6.16	Full time	Low	Not Eligible	Jaishree Atasi
22	PR1662	Genevra	Friday	Female	Research and	50449	11/14/2018	0.8	Auckland, New	5.61	Part time	Medium	Not Eligible	Genevra Friday

I have named the table as hr. Press Ctrl+T and create the table. Name it in the table design option in excel.

1. EXCEL FUNCTIONS

➔ BASIC MATH

Function	Parameters	Purpose	Example Formula	Example Output Column
SUM()	range	Add values	=SUM(hr[salary])	Total of all salaries
AVERAGE()	range	Mean value	=AVERAGE(hr[age])	Average employee age
COUNT()	range	Count numeric cells	=COUNT(hr[salary])	No. of numeric salary entries
COUNTA()	range	Count non-empty cells	=COUNTA(hr[department])	Filled department rows
COUNTBLANK()	range	Count blank cells	=COUNTBLANK(hr[email])	Number of missing emails
PRODUCT()	range	Multiply values	=PRODUCT(B2:B4)	Product of 3 numbers
ROUND()	number, decimals	Round to decimals	=ROUND(89.678, 1)	89.7
ROUNDUP()	number, decimals	Always round up	=ROUNDUP(4.32, 0)	5
ROUNDDOWN()	number, decimals	Always round down	=ROUNDDOWN(4.99, 0)	4
INT()	number	Nearest lower integer	=INT(5.99)	5
TRUNC()	number, num_digits	Truncate decimals	=TRUNC(6.78)	6

- **Conditional Aggregation**

Function	Parameters	Purpose	Example Formula	Example Output Column
SUMIF()	range, criteria, sum_range	Sum with condition	=SUMIF(hr[department], "Finance", hr[salary])	Total salary in Finance
AVERAGEIF()	range, criteria, avg_range	Avg with condition	=AVERAGEIF(hr[gender], "Female", hr[salary])	Avg salary of female employees
COUNTIF()	range, criteria	Count matches	=COUNTIF(hr[gender], "Male")	No. of male employees
SUMIFS()	sum_range, criteria1, criteria2...	Sum with multiple filters	=SUMIFS(hr[salary], hr[gender], "Male", hr[department], "HR")	Salary of male HR employees
AVERAGEIFS()	avg_range, criteria1, criteria2...	Avg with multiple filters	=AVERAGEIFS(hr[salary], hr[gender], "Female", hr[department], "IT")	Avg salary of female IT staff
COUNTIFS()	criteria1, value1, ...	Count with multiple filters	=COUNTIFS(hr[gender], "Female", hr[department], "IT")	No. of female employees in IT

➔ **Lookup & Reference**

Function	Parameters	Purpose	Example Formula	Example Output
VLOOKUP()	Value to search, table, col_index to return, FALSE (exact match)	Search by row	=VLOOKUP(102, hr, 3, FALSE)	Salary of employee ID 102
HLOOKUP()	Value to search, table, row_index to return, FALSE (exact match)	Search by column	=HLOOKUP("Q1", A1:D2, 2, FALSE)	Value for Q1
XLOOKUP()	lookup_value, search_col, return_col	Best modern lookup	=XLOOKUP(102, hr[emp_id], hr[salary])	Salary for emp_id 102
INDEX()	range, row_num	Value by position	=INDEX(hr[name], 3)	3rd employee name
MATCH()	value, range, 0	Position of value	=MATCH("HR", hr[department], 0)	Row number where "HR" appears

➔ **Statistical Functions**

Function	Parametes	Purpose	Example Formula	Example Output
MEDIAN()	Range	Middle value	=MEDIAN(hr[salary])	Median salary
MODE.SNGL()	range	Most frequent value	=MODE.SNGL(hr[experience])	Most common years of experience
STDEV.S()	range	Std deviation (sample)	=STDEV.S(hr[salary])	Spread in salaries
VAR.S()	range	Sample variance	=VAR.S(hr[age])	Variability in age

RANK.EQ()	value, range, order	Rank of value	=RANK.EQ(72000, hr[salary], 0)	Rank of 72000 salary
CORREL()	range1, range2	Correlation	=CORREL(hr[experience], hr[salary])	Strength of relationship
PERCENTILE.INC()	range, k	Percentile	=PERCENTILE.INC(hr[salary], 0.9)	90th percentile salary
QUARTILE.INC()	range, quart	Quartile	=QUARTILE.INC(hr[salary], 3)	3rd quartile of salaries

➔ **Logical Functions**

Function	Parameters	Purpose	Example Formula	Example Purpose
IF()	condition, true, false	Basic logic	=IF(hr[salary]>50000, "High", "Low")	Categorize salary
IFS()	Multiple condition, value pairs	Multi-branch logic	=IFS(hr[salary]>70000,"High", hr[salary]>50000,"Med", TRUE,"Low")	Label salary tier
AND()	cond1, cond2	All conditions true	=IF(AND(hr[age]>25, hr[gender]="Male"), "Yes", "No")	Check multiple conditions
OR()	cond1, cond2	Any condition true	=IF(OR(hr[department]="HR", hr[age]<30), "Flag", "Clear")	Alert on multiple cases
NOT()	cond	Reverse logic	=NOT(hr[gender]="Male")	Is not male?
SWITCH()	value, match1, val1, ...	Multiple matching logic	=SWITCH(hr[grade], "A","Top", "B","Good", "C","Average")	Grade remark

➔ **Text Functions**

Function	Parameters	Purpose	Example Formula	Example Purpose
TEXTJOIN()	delimiter, ignore_empty, text1, text2	Join multiple columns	=TEXTJOIN(" ", TRUE, hr[first_name], hr[last_name])	Full name
CONCAT()	text1, text2	Merge strings	=CONCAT("Emp-", hr[emp_id])	ID like Emp-101
LEFT()	text, n	First n characters	=LEFT(hr[name], 3)	"Van" from "Vanshika"
RIGHT()	text, n	Last n characters	=RIGHT(hr[emp_id], 2)	"01" from "EMP01"
MID()	text, start, length	Middle substring	=MID(hr[email], 3, 4)	3rd to 6th chars
LEN()	text	Character count	=LEN(hr[name])	Length of name
TRIM()	text	Remove extra spaces	=TRIM(" hello ")	"hello"
UPPER() / LOWER()	text	Case change	=UPPER(hr[dept]) → "FINANCE"	
PROPER()	text	Title Case	=PROPER("vanshika mishra") → "Vanshika Mishra"	

TEXT()	value, format	Format dates or numbers	=TEXT(hr[joining_date],"yyyy-mm")	"2024-03"
SUBSTITUTE()	text, old, new	Replace value	=SUBSTITUTE(hr[dept], "IT", "InfoTech")	Replace dept names
FIND() / SEARCH()	find, within	Position of substring	=FIND("@", hr[email])	Where @ is in email

➔ **Date & Time**

Function	Parameters	Purpose	Example Formula	Example Output
TODAY()	None	Returns current date	=TODAY()	2025-07-10
NOW()	None	Returns current date & time	=NOW()	2025-07-10 02:12
DAY()	date	Extracts day from a given date	=DAY("26-01-2024")	26
MONTH()	date	Extracts month from a given date	=MONTH("26-01-2024")	1
YEAR()	date	Extracts year from a given date	=YEAR("26-01-2024")	2024
WEEKDAY()	date, [return_type]	Returns weekday number (1=Sunday, 2=Monday…)	=WEEKDAY("26-01-2024", 1)	6 *(Friday)*
WEEKNUM()	date, [return_type]	Returns the week number in the year	=WEEKNUM("26-01-2024")	4
ISOWEEKNUM()	date	Returns ISO week number (starts on Monday)	=ISOWEEKNUM("26-01-2024")	4
DATE()	year, month, day	Creates a date from year, month, and day	=DATE(2024, 1, 26)	26-01-2024
DATEVALUE()	text	Converts a text date into an actual Excel date	=DATEVALUE("01-Jan-2024")	01-01-2024
EDATE()	date, months	Adds or subtracts months	=EDATE("21-01-2024", 5)	21-06-2024
EDATE()	date, -months	Subtracts months	=EDATE("21-01-2024", -5)	21-08-2023
EDATE()	date, years*12	Adds or subtracts years by multiplying by 12	=EDATE("21-01-2024", 5*12)	21-01-2029
DATEDIF()	start, end, "Y"	Calculates years between dates	=DATEDIF("24-01-2023", "17-02-2024", "Y")	1
DATEDIF()	start, end, "M"	Calculates months between dates	=DATEDIF("24-01-2023", "17-02-2024", "M")	12
DATEDIF()	start, end, "D"	Calculates days between dates	=DATEDIF("24-01-2023", "17-02-2024", "D")	389
YEARFRAC()	start, end, [basis]	Returns fractional years between two dates	=YEARFRAC("01-Jan-2020", "26-Jan-2024")	4.07
NETWORKDAYS()	start, end	Returns business days excluding weekends	=NETWORKDAYS("01-01-	260

			2023", "31-12-2023")	
NETWORKDAYS()	start, end, holidays_range	Business days excluding holidays as well	=NETWORKDAYS("01-01-2023", "31-12-2023", F34:F35)	258
WORKDAY()	start, days, holidays_range	Returns date after n working days	=WORKDAY("01-01-2022", 10, F34:F35)	14-01-2022
EOMONTH()	date, 0	Returns last day of current month	=EOMONTH("01-01-2023", 0)	31-01-2023
EOMONTH()	date, -1	Returns last day of previous month	=EOMONTH("02-04-2023", -1)	31-03-2023
EOMONTH()	date, 2	Returns last day two months ahead	=EOMONTH("04-08-2023", 2)	31-10-2023
+ (Date + Days)	date + n	Adds n days to a date	="21-01-2024" + 5	26-01-2024
- (Date - Days)	date - n	Subtracts n days from a date	="21-01-2024" - 5	16-01-2024

➔ **Forecast**

Function	Parameters	Purpose	Example Formula	Example Purpose
FORECAST()	x, known_ys, known_xs	Predict value	=FORECAST(2025, hr[salary], hr[year])	Projected salary
TREND()	known_ys, known_xs, new_xs	Linear fit	=TREND(hr[salary], hr[year], {2025})	Estimate
LINEST()	y_range, x_range	Regression	=LINEST(Ys, Xs)	Slope and intercept
GROWTH()	Ys, Xs, newX	Exponential forecast	=GROWTH(Ys, Xs, 2025)	Non-linear growth

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➔ **Error Handling & Info**

Function	Parameters	Purpose	Example Formula	Example Purpose
IFERROR()	formula, fallback	Handle errors	=IFERROR(A1/B1, "Invalid")	Prevents crash
ISNUMBER()	value	Check if number	=ISNUMBER(hr[score])	TRUE/FALSE
ISBLANK()	value	Check empty cell	=ISBLANK(hr[email])	TRUE if missing
ISTEXT()	value	Check text	=ISTEXT(hr[dept])	TRUE if text
CLEAN()	text	Remove non-printable	=CLEAN(A1)	Text only
FORMULATEXT()	cell	Show formula	=FORMULATEXT(A1)	=SUM(A1:A10)

➔ **FILTER**

Use Case	Formula	Purpose	Example Output Column
1. Basic Filter by One Condition	=FILTER(hr[name], hr[department]="Finance")	Get names of employees in Finance department	List of Finance employees
2. Filter by Numeric Condition	=FILTER(hr[name], hr[salary]>60000)	Names with salary > 60K	High-salary employees
3. Filter by Date	=FILTER(hr[name], hr[joining_year]>2020)	Employees who joined after 2020	Post-2020 joiners
4. Filter by Month	=FILTER(hr[name], MONTH(hr[joining_date])=3)	Employees who joined in March	March joiners
5. Filter by Gender and Department (AND)	=FILTER(hr[name], (hr[department]="HR") * (hr[gender]="Female"))	Female employees in HR	Filtered HR females
6. Filter by Gender OR Department	=FILTER(hr[name], (hr[gender]="Female") + (hr[department]="Finance"))	Female or Finance dept	Union filter output
7. Filter Salaries by Department	=FILTER(hr[salary], hr[department]="IT")	Salaries in IT dept	IT salary list
8. Filter with Text Function	=FILTER(hr[name], LEFT(hr[name],1)="A")	Names starting with 'A'	A-name employees
9. Top 3 Salaries in a Dept	=TAKE(SORT(FILTER(hr[salary], hr[department]="IT"), , -1), 3)	Top 3 salaries in IT	Sorted descending
10. Filter with IFERROR (no match)	=IFERROR(FILTER(hr[name], hr[dept]="Admin"), "No records")	Handle no match cases	“No records” if none
11. Filter with ISNUMBER	=FILTER(hr[salary], ISNUMBER(hr[salary]))	Exclude errors/blanks	Valid salary values
12. Filter Employees with Length > 6 Letters	=FILTER(hr[name], LEN(hr[name])>6)	Long names	Names like "Vanshika"
13. Filter by Not Equal	=FILTER(hr[name], hr[department]<>"IT")	All non-IT employees	Exclude IT dept
14. Filter Top K by Condition	=LARGE(FILTER(hr[salary], hr[department]="HR"), 2)	2nd highest salary in HR	Top-K from filtered