

# HR DATA ANALYSIS


In our project, we explored how to use SQL, a powerful tool for managing data in databases. We learned how to write about 20 different types of queries. These queries helped us do things like find specific information, do calculations, and organize data neatly.

We saw how SQL can be used for simple tasks, like finding a name in a list, to more complex tasks, like analyzing large amounts of data. This project helped us understand how important it is to know SQL in today's world where handling lots of data efficiently is crucial for businesses

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# 1. Retrieve the total number of employees in the dataset

```
3 • SELECT COUNT(*) AS total_employees
4   from general_data;
5
```

Result Grid |   Filter Rows:  | Export:  | Wrap Cell Content: 

total_employees
4410

## 2. List all unique job roles in the dataset.

```
11 select distinct jobrole
12 from general_data;
```

result Grid	Filter Rows:	Export:	Wrap Cell Content:
jobrole			
Healthcare Representative			
Research Scientist			
Sales Executive			
Human Resources			
Research Director			
Laboratory Technician			
Manufacturing Director			
Sales Representative			
Manager			

### 3. Find the average age of employees

```
14 • Select round(avg(age),2) as Avg_age  
15 from general_data;  
16  
17
```

Result Grid



Filter Rows:

Export:



Wrap Cell Content:



Avg_age
36.92

4. Retrieve the names and ages of employees who have worked at the company for more than 5 years.

```
17 • select `emp name`,age
18 from general_data
19 where yearsatcompany >5;
20
21
```

Result Grid |  Filter Rows:  | Export:  | Wrap Cell Cont

emp name	age
RENEE MARQUARDT	38
HARVEY ELWIN	32
LEON WHITE	46
NATHAN HARDY	31
SUSAN BUCHBINDER	25
KIRSTEN BARASH	45
DENNIS SUTTER	36



## 5. Get a count of employees grouped by their department.

```
21 • select department, count(*) as count_employees  
22     from general_data  
23     group by department;
```

Result Grid |  Filter Rows:  | Export:  | Wrap Cell Content: 

department	count_employees
Sales	1338
Research & Development	2883
Human Resources	189

## 6. List employees who have 'High' Job Satisfaction

```
25 • select employeeid
26     from employee_s
27     where jobsatisfaction = 3;
28
29
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

employeeid
7
17
23
24
29
39
44

employee\_s 20 x

7. Find the highest Monthly Income in the dataset.

```
25 • select max(monthlyincome) as Max_salary  
26 from general_data;  
27  
28  
29  
30  
31
```

Result Grid |  Filter Rows:  | Export:  Wrap Cell Co



Max_salary
------------




199990
--------



## 8. List employees who have 'Travel\_Rarely' as their BusinessTravel type.

```
28 • select *
29 from general_data
30 where BusinessTravel = 'Travel_Rarely';
31
```

Result Grid   Filter Rows:

Export:  Wrap Cell Content:  Fetch rows: 

Emp Name	Age	Attrition	BusinessTravel	Department	DistanceFromHome	Education	EducationField	EmployeeCount	EmployeeID	Gender	JobLevel	JobRole	MaritalStatus	Mo
ALBERTO PEDRUCO	51	No	Travel_Rarely	Sales	6	2	Life Sciences	1	1	Female	1	Healthcare Representative	Married	131
HARVEY ELWIN	32	No	Travel_Rarely	Research & Development	10	1	Medical	1	5	Male	1	Sales Executive	Single	234
LEON WHITE	46	No	Travel_Rarely	Research & Development	8	3	Life Sciences	1	6	Female	4	Research Director	Married	407
DENNIS HERRERA	28	Yes	Travel_Rarely	Research & Development	11	2	Medical	1	7	Male	2	Sales Executive	Single	581
DONALD BRYANT	29	No	Travel_Rarely	Research & Development	18	3	Life Sciences	1	8	Male	2	Sales Executive	Married	314
NATHAN HARDY	31	No	Travel_Rarely	Research & Development	1	3	Life Sciences	1	9	Male	3	Laboratory Technician	Married	204

## 9. Retrieve the distinct MaritalStatus categories in the dataset

```
32 • select distinct MaritalStatus
33     from general_data;
34
35
36
37
38
```

Result Grid | Filter Rows:  Export: Wrap Cell Content:

MaritalStatus
Married
Single
Divorced

10. Get a list of employees with more than 2 years of work experience but less than 4 years in their current role.

```
35 • select *
36 from general_data
37 where totalworkingyears < 2 and yearsatcompany < 4;
38
39
40
41
42
```

Emp Name	Age	Attrition	BusinessTravel	Department	DistanceFromHome	Education	EducationField	EmployeeCount	EmployeeID	Gender	JobLevel	JobRole	MaritalStat
ALBERTO PEDRUCO	51	No	Travel_Rarely	Sales	6	2	Life Sciences	1	1	Female	1	Healthcare Representative	Married
CROCE CASCIATO	18	Yes	Travel_Rarely	Research & Development	1	4	Life Sciences	1	39	Male	1	Sales Executive	Single
GERARDO PINTO	18	No	Travel_Rarely	Sales	7	3	Life Sciences	1	44	Male	1	Research Scientist	Single
MELISSA LERMA	33	Yes	Travel_Rarely	Human Resources	28	2	Human Resources	1	106	Female	5	Manager	Single
JAMES MILLER	21	Yes	Travel_Rarely	Human Resources	10	2	Human Resources	1	113	Male	1	Laboratory Technician	Single
DAVID LAZAR	30	No	Travel_Rarely	Research & Development	3	3	Life Sciences	1	124	Female	2	Manager	Married

11. List employees who have changed their job roles within the company (JobLevel and JobRole differ from their previous job).

```
43 • select *
44   from general_data
45   where jobrole<> joblevel and joblevel<>jobrole;
46
```

Result Grid														
Filter Rows:		Export:		Wrap Cell Content:		Fetch rows:								
Emp Name	Age	Attrition	BusinessTravel	Department	DistanceFromHome	Education	EducationField	EmployeeCount	EmployeeID	Gender	JobLevel	JobRole	MaritalStatu	
ALBERTO PEDRUCO	51	No	Travel_Rarely	Sales	6	2	Life Sciences	1	1	Female	1	Healthcare Representative	Married	
LAWRENCE LEE	31	Yes	Travel_Frequently	Research & Development	10	1	Life Sciences	1	2	Female	1	Research Scientist	Single	
DWAYNE CURRY	32	No	Travel_Frequently	Research & Development	17	4	Other	1	3	Male	4	Sales Executive	Married	
RENEE MARQUARDT	38	No	Non-Travel	Research & Development	2	5	Life Sciences	1	4	Male	3	Human Resources	Married	
HARVEY ELWIN	32	No	Travel_Rarely	Research & Development	10	1	Medical	1	5	Male	1	Sales Executive	Single	
LEON WHITE	46	No	Travel_Rarely	Research & Development	8	3	Life Sciences	1	6	Female	4	Research Director	Married	

12. Find the average distance from home for employees in each department.

```
47 • select department, round(avg(distancefromhome),2) as avg_distance
48 from general_data
49 group by department;
50
```

Result Grid   Filter Rows:  Export:  Wrap Cell Content: 

department	avg_distance
Sales	9.23
Research & Development	9.24
Human Resources	8.25



### 13. Retrieve the top 5 employees with the highest MonthlyIncome.

```
56 • select `emp name`,monthlyincome
57 from general_data
58 order by 2 desc
59 limit 5 ;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

	emp name	monthlyincome
▶	LAWRENCE LAU	199990
	DAVID KUCIA	199990
	KEVIN LABANOWSKI	199990
	NATHAN SZUTU	199730
	SHANNON STABILE	199730

14. Calculate the percentage of employees who have had a promotion in the last year.

```
75 • SELECT
76     round((COUNT(CASE WHEN YearsSinceLastPromotion <= 1 THEN 1 END) / COUNT(*)) * 100,2) AS promotion_percentage
77 FROM
78     general_data;
79
80
81
```

Result Grid |  Filter Rows:  | Export:  | Wrap Cell Content: 

promotion_percentage
63.81

15. List the employees with the highest and lowest EnvironmentSatisfaction.

```
80 • select g.`emp name`,e.enviromentsatisfaction
81 from general_data g join employee_s e
82 on g.employeeid = e.employeeid
83 where e.enviromentsatisfaction in (1,3);
84
85
```

emp name	enviromentsatisfaction
ALBERTO PEDRUCO	3
LAWRENCE LEE	3
LEON WHITE	3
DENNIS HERRERA	1
DONALD BRYANT	1
KIRSTEN BARASH	3
KATHRYN BALLOU	1

## 16. Find the employees who have the same JobRole and MaritalStatus.

```
89 • SELECT JobRole, MaritalStatus, COUNT(*) AS employee_count
90 FROM general_data
91 GROUP BY JobRole, MaritalStatus
92 HAVING COUNT(*) > 1;
93
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

	JobRole	MaritalStatus	employee_count
▶	Healthcare Representative	Married	192
	Research Scientist	Single	306
	Sales Executive	Married	492
	Human Resources	Married	75
	Sales Executive	Single	282
	Research Director	Married	96
	Laboratory Technician	Married	348

17. List the employees with the highest TotalWorkingYears who also have a PerformanceRating of 4.

```
91 • select g.`emp name`,g.totalworkingyears,m.performancerating
92 from general_data g join manager_s m
93 on g.employeeid = m.employeeid
94 where g.totalworkingyears = (select max(g.totalworkingyears) from general_data g join manager_s m
95 on g.employeeid = m.employeeid where m.performancerating = 4 ) and m.performancerating = 4;
```

Result Grid   Filter Rows:  Export:  Wrap Cell Content: 

emp name	totalworkingyears	performancerating
STEVEN SETO	35	4
SHARON LEGENZA	35	4
EMILY MURASE	35	4



## 18. Calculate the average Age and JobSatisfaction for each BusinessTravel type.

```
97 • select g.businesstravel,round(avg(g.age),2) as Avg_age ,e.jobsatisfaction
98 from general_data g join employee_s e
99 on g.employeeid = e.employeeid
100 group by g.businesstravel,e.jobsatisfaction;
101
```

businesstravel	Avg_age	jobsatisfaction
Travel_Rarely	37.41	4
Travel_Frequently	37.24	2
Non-Travel	35.94	4
Travel_Rarely	37.30	1
Travel_Rarely	36.76	2
Travel_Rarely	36.80	3
Non-Travel	36.04	1

## 19. Retrieve the most common EducationField among employees.

```
102 • select count(*) as field_count ,educationfield
103      from general_data
104      group by educationfield
105      order by 1 desc
106      limit 1 ;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

	field_count	educationfield
▶	1818	Life Sciences

20. List the employees who have worked for the company the longest but haven't had a promotion

```
108 • select `emp name`, yearsatcompany
109 from general_data
110 where yearsatcompany = ( select max(yearsatcompany) from general_data) and yearssincelastpromotion = 0 ;
```

Result Grid   Filter Rows:  Export:  Wrap Cell Content: 

emp name	yearsatcompany

No employees have worked for the company the longest without having a promotion.