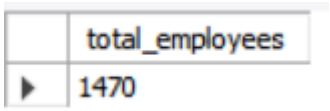
HR Employee Attrition Analysis

1. **How many total employees are there in the company?**

```
Select  count(*) as total_employees
From  hr_employee_attrition;
```



	total_employees
▶	1470

2. **What are the distinct departments and job roles?**

```
Select distinct Department, JobRole
From hr_employee_attrition
Order by Department, JobRole;
```

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

	Department	JobRole
▶	Human Resources	Human Resources
	Human Resources	Manager
	Research & Development	Healthcare Representative
	Research & Development	Laboratory Technician
	Research & Development	Manager
	Research & Development	Manufacturing Director
	Research & Development	Research Director
	Research & Development	Research Scientist

3. **How many male and female employees are there?**

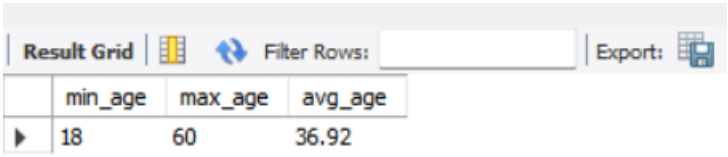
```
select gender, count(*) as count
from hr_employee_attrition
group by gender;
```

Result Grid | Filter Rows: | Export:

gender	count
Female	588
Male	882

4. What is the minimum, maximum, and average age of employees?

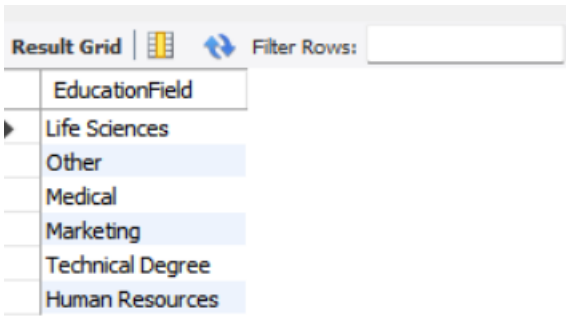
```
Select
min(Age) as min_age,
max(Age) as max_age,
round(avg(Age), 2) as avg_age
From hr_employee_attrition;
```



min_age	max_age	avg_age
18	60	36.92

5. What are the different education fields represented in the dataset?

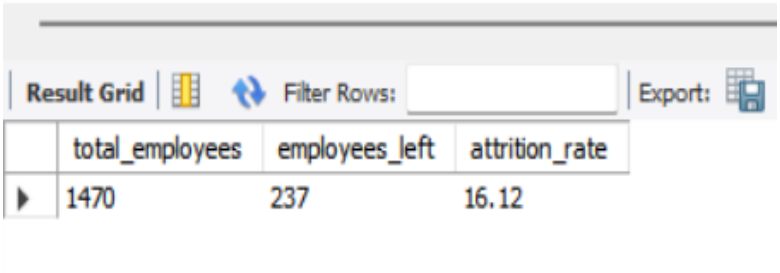
```
select distinct EducationField
from hr_employee_attrition;
```



EducationField
Life Sciences
Other
Medical
Marketing
Technical Degree
Human Resources

6. **What is the total number and percentage of employees who have left (Attrition = 'Yes')?**

```
Select count(*) as total_employees,
sum(case when Attrition = 'Yes' then 1 else 0 end) as employees_left,
round (sum(case when Attrition = 'Yes' then 1 else 0 end) * 100.0 / count (*),
2) as attrition_rate
From hr_employee_attrition;
```

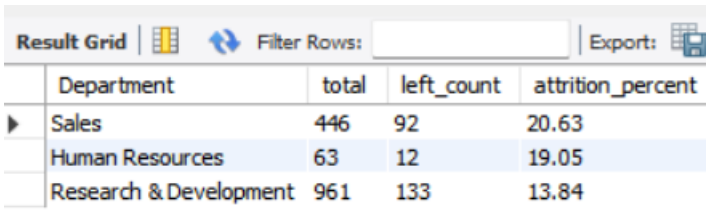


Result Grid | Filter Rows: | Export:

total_employees	employees_left	attrition_rate
1470	237	16.12

7. **What is the attrition rate in each department?**

```
Select Department, count (*)  total,
sum(case when Attrition = 'Yes' then 1 else 0 end) as left_count,
round (sum(case when Attrition = 'Yes' then 1 else 0 end) * 100.0 / count (*),
2) as attrition_percent
From hr_employee_attrition
Group by Department
Order by attrition_percent desc;
```

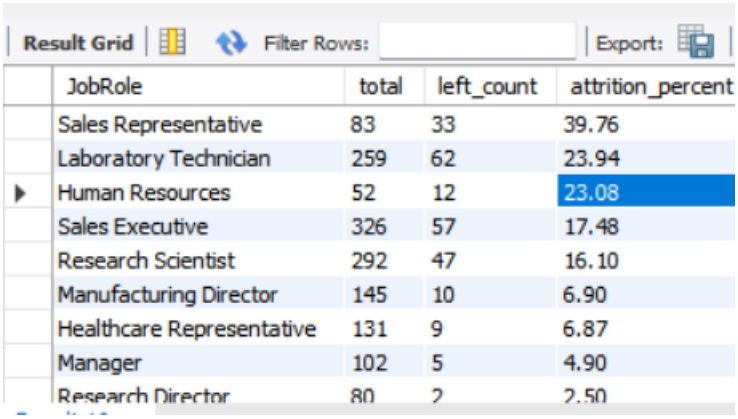


Result Grid | Filter Rows: | Export:

Department	total	left_count	attrition_percent
Sales	446	92	20.63
Human Resources	63	12	19.05
Research & Development	961	133	13.84

8. **What is the attrition rate for each job role?**

```
Select JobRole, count(*) as total,
sum(case when Attrition = 'Yes' then 1 else 0 end) as left_count,
round (sum(case when Attrition = 'Yes' then 1 else 0 end) * 100.0 / count
(*),2)  as attrition_percent
From hr_employee_attrition
Goup by JobRole
Order by attrition_percent desc;
```

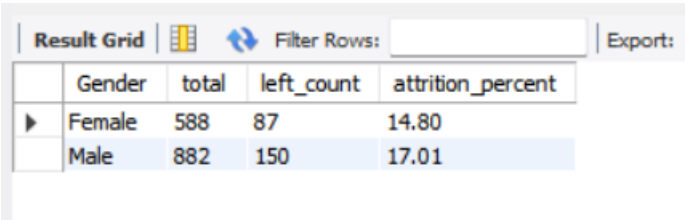


Result Grid | Filter Rows: | Export:

JobRole	total	left_count	attrition_percent
Sales Representative	83	33	39.76
Laboratory Technician	259	62	23.94
Human Resources	52	12	23.08
Sales Executive	326	57	17.48
Research Scientist	292	47	16.10
Manufacturing Director	145	10	6.90
Healthcare Representative	131	9	6.87
Manager	102	5	4.90
Research Director	80	2	2.50

9. **What is the attrition rate by gender?**

```
select Gender, count(*) AS total,
sum(case when Attrition = 'Yes' then 1 else 0 end)  as left_count,
round (sum(case when Attrition = 'Yes' then 1 else 0 end) * 100.0 / count (*),
2) as attrition_percent
From  hr_employee_attrition
group by Gender;
```



Result Grid | Filter Rows: | Export:

Gender	total	left_count	attrition_percent
Female	588	87	14.80
Male	882	150	17.01

10.Which education field has the highest attrition rate?

```
Select EducationField, count(*) AS total,
sum(case when Attrition = 'Yes' then 1 else 0 end) as left_count,
round (sum(case when Attrition = 'Yes' then 1 else 0 end) * 100.0 / count (*),
2) AS attrition_percent
From hr_employee_attrition
group by  EducationField
order by attrition_percent desc;
```

Result Grid | Filter Rows: | Export:

EducationField	total	left_count	attrition_percent
Human Resources	27	7	25.93
Technical Degree	132	32	24.24
Marketing	159	35	22.01
Life Sciences	606	89	14.69
Medical	464	63	13.58
Other	82	11	13.41

11.What is the average monthly income for each job role?

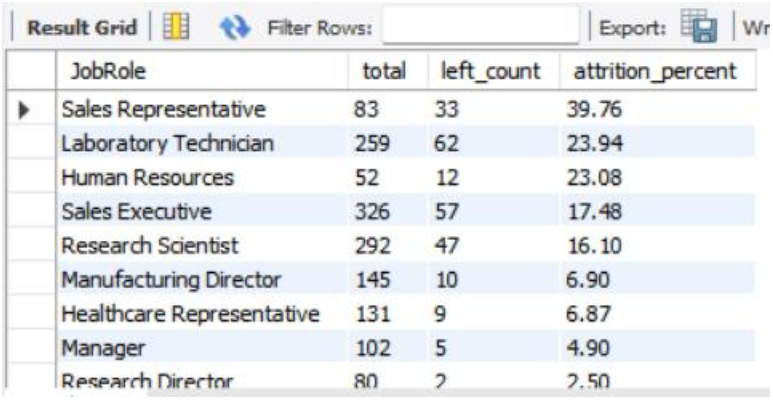
```
select jobrole,
round(avg(MonthlyIncome),2)as avg_monthly_income
from hr_employee_attrition
group by jobrole;
```

Result Grid | Filter Rows: | Export:

jobrole	avg_monthly_income
Sales Executive	6924.28
Research Scientist	3239.97
Laboratory Technician	3237.17
Manufacturing Director	7295.14
Healthcare Representative	7528.76
Manager	17181.68
Sales Representative	2626.00
Research Director	16033.55
Human Resources	4235.75

12. Which job roles have the highest attrition?

```
select JobRole, count(*) as total,
sum(case when Attrition = 'Yes' then 1 else 0 end) as left_count,
round (sum(case when Attrition = 'Yes' then 1 else 0 end) * 100.0 / count (*),
2) as attrition_percent
From hr_employee_attrition
Group by JobRole
Order by attrition_percent desc;
```



Result Grid | Filter Rows: | Export: | Wr

JobRole	total	left_count	attrition_percent
Sales Representative	83	33	39.76
Laboratory Technician	259	62	23.94
Human Resources	52	12	23.08
Sales Executive	326	57	17.48
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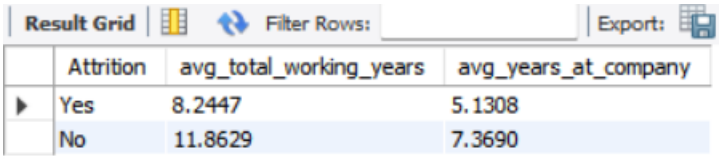
Manufacturing Director	145	10	6.90
Healthcare Representative	131	9	6.87
Manager	102	5	4.90
Research Director	80	2	2.50

13. What is the average total working years and years at company for employees who left vs stayed?

```
select Attrition,
round(avg(TotalWorkingYears),2)as avg_total_working_years,
round(avg(YearsAtCompany),2)as avg_years_at_company
from hr_employee_attrition
group by attrition;
```

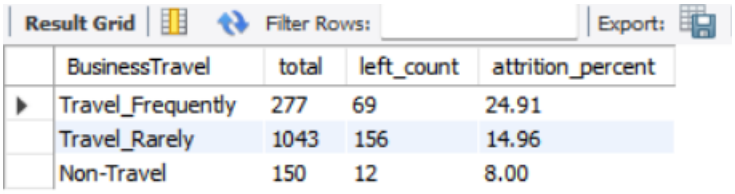


Result Grid | Filter Rows: | Export:

Attrition	avg_total_working_years	avg_years_at_company
Yes	8.2447	5.1308
No	11.8629	7.3690

14. How does attrition vary across different business travel frequencies?

```
select BusinessTravel,
count(*) AS total,
sum(case when Attrition = 'Yes' then 1 else 0 end) as left_count,
round (sum(case when Attrition = 'Yes' then 1 else 0 end) * 100.0 / count (*),
2) as attrition_percent
From hr_employee_attrition
Group by BusinessTravel
Order by attrition_percent desc;
```

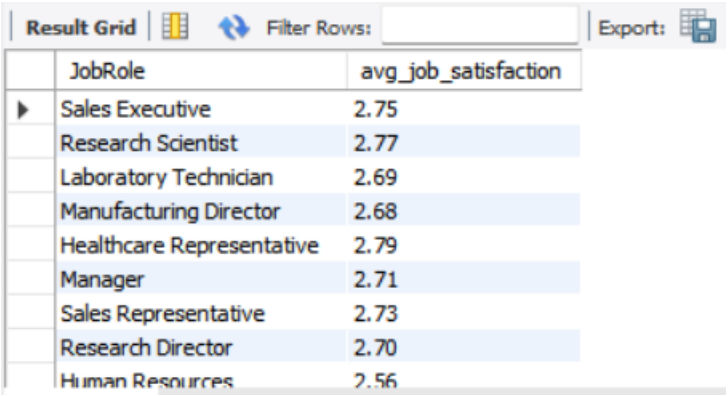


Result Grid | Filter Rows: | Export:

BusinessTravel	total	left_count	attrition_percent
Travel_Frequently	277	69	24.91
Travel_Rarely	1043	156	14.96
Non-Travel	150	12	8.00

15. Which job roles have the highest average job satisfaction?

```
select JobRole,
round(avg(JobSatisfaction),2) as avg_job_satisfaction
from hr_employee_attrition
group by JobRole;
```

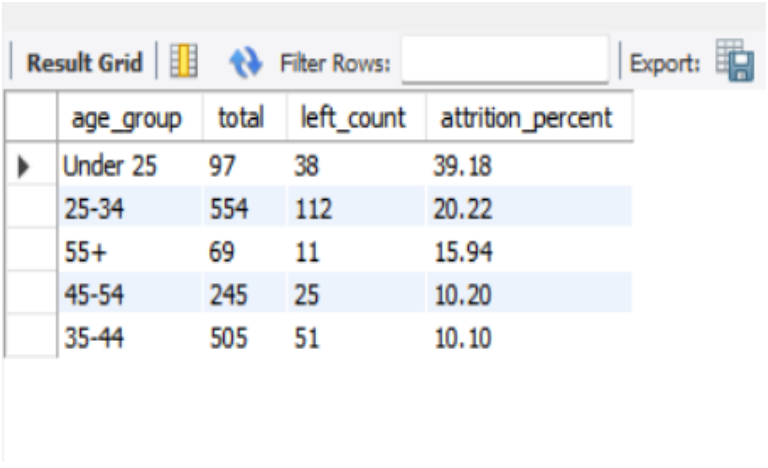


Result Grid | Filter Rows: | Export:

JobRole	avg_job_satisfaction
Sales Executive	2.75
Research Scientist	2.77
Laboratory Technician	2.69
Manufacturing Director	2.68
Healthcare Representative	2.79
Manager	2.71
Sales Representative	2.73
Research Director	2.70
Human Resources	2.56

16.What age group has the highest attrition?

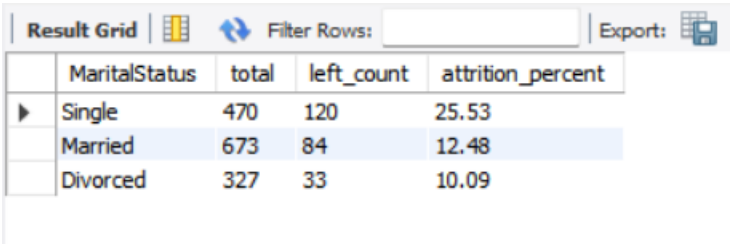
```
select case
when Age < 25 then 'Under 25'
when Age between 25 and 34 then '25-34'
when Age between 35 and 44 then '35-44'
when Age between 45 and 54 then '45-54'
else  '55+'  end as age_group,
 count (*) AS total,
sum(case when Attrition = 'Yes' then 1 else 0 end) as left_count,
round (sum(case when Attrition = 'Yes' then 1 else 0 end) * 100.0 / count (*), 2) as attrition_percent
From hr_employee_attrition
 group by  age_group
 Order by attrition_percent desc;
```



age_group	total	left_count	attrition_percent
Under 25	97	38	39.18
25-34	554	112	20.22
55+	69	11	15.94
45-54	245	25	10.20
35-44	505	51	10.10

17. What is the attrition rate among single, married, and divorced employees?

```
Select MaritalStatus, count(*) AS total,
sum(case when Attrition = 'Yes' then 1 else 0 end) as left_count,
round (sum(case when Attrition = 'Yes' then 1 else 0 end) * 100.0 / count
(*), 2) as attrition_percent
From hr_employee_attrition
Group by MaritalStatus
Order by attrition_percent desc;
```

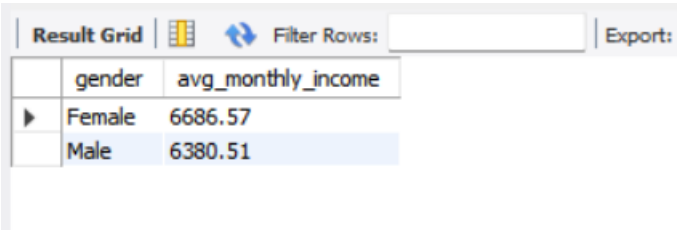


Result Grid | Filter Rows: | Export:

MaritalStatus	total	left_count	attrition_percent
Single	470	120	25.53
Married	673	84	12.48
Divorced	327	33	10.09

18. What is the average monthly income by gender?

```
select gender,
round(avg(MonthlyIncome),2)as avg_monthly_income
from hr_employee_attrition
group by gender;
```



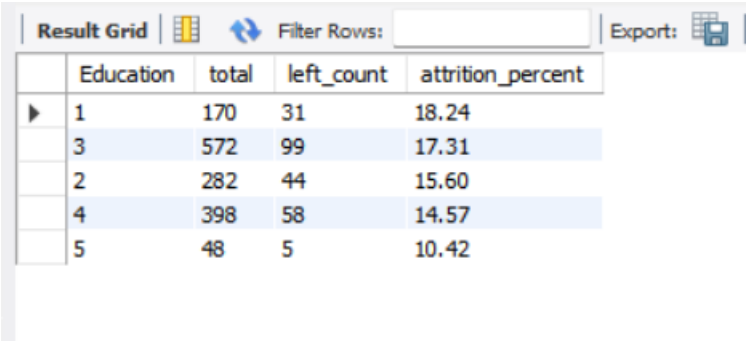
Result Grid | Filter Rows: | Export:

gender	avg_monthly_income
Female	6686.57
Male	6380.51

19. Does attrition differ by education level?

```
Select Education, count(*) AS total,
```

```
sum(case when Attrition = 'Yes' then 1 else 0 end) as left_count,
round (sum(case when Attrition = 'Yes' then 1 else 0 end) * 100.0 / count
(*), 2) as attrition_percent
From hr_employee_attrition
Group by Education
Order by attrition_percent desc;
```

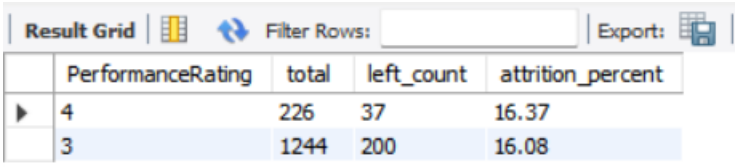


Result Grid | Filter Rows: | Export:

Education	total	left_count	attrition_percent
1	170	31	18.24
3	572	99	17.31
2	282	44	15.60
4	398	58	14.57
5	48	5	10.42

20. Is there a difference in attrition between employees with different performance ratings?

```
Select PerformanceRating, count(*) AS total,
sum(case when Attrition = 'Yes' then 1 else 0 end) as left_count,
round (sum(case when Attrition = 'Yes' then 1 else 0 end) * 100.0 / count
(*), 2) AS attrition_percent
From hr_employee_attrition
Group by PerformanceRating
Order by attrition_percent desc;
```



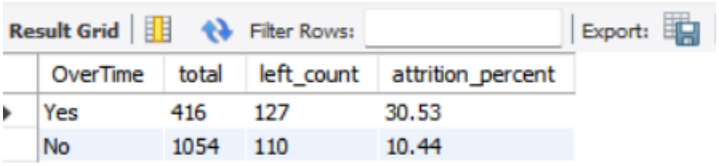
Result Grid | Filter Rows: | Export:

PerformanceRating	total	left_count	attrition_percent
4	226	37	16.37
3	1244	200	16.08

21. Does overtime impact attrition?

```
select OverTime, count(*) AS total,
sum(case when Attrition = 'Yes' then 1 else 0 end) as left_count,
```

```
round(sum(case when Attrition = 'Yes' then 1 else 0 end)*100.0/count(*),
2) as attrition_percent
from hr_employee_attrition
group by OverTime
order by attrition_percent desc;
```

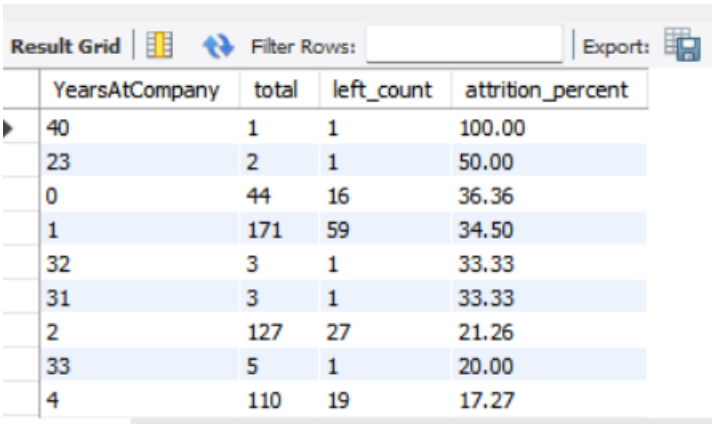


Result Grid | Filter Rows: | Export:

OverTime	total	left_count	attrition_percent
Yes	416	127	30.53
No	1054	110	10.44

22.What is the attrition percentage by years at company?

```
select YearsAtCompany, count(*) AS total,
sum(case when Attrition = 'Yes' then 1 else 0 end) as left_count,
round(sum(case when Attrition = 'Yes' then 1 else 0 end)*100.0/count(*), 2) as
attrition_percent
from hr_employee_attrition
group by YearsAtCompany
order by attrition_percent desc;
```



Result Grid | Filter Rows: | Export:

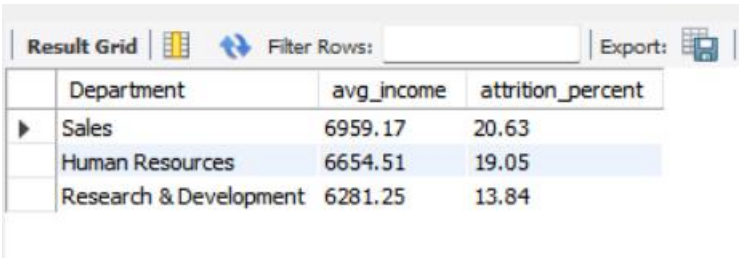
YearsAtCompany	total	left_count	attrition_percent
40	1	1	100.00
23	2	1	50.00
0	44	16	36.36
1	171	59	34.50
32	3	1	33.33
31	3	1	33.33
2	127	27	21.26
33	5	1	20.00
4	110	19	17.27

23. Is there a relationship between monthly income and attrition?

```
select case
when MonthlyIncome < 3000 then 'Low Income (<3000)'
when MonthlyIncome between 3000 and 7000 then 'Mid Income (3000-
7000)'
else 'High Income (>7000)' end as income_group,
count(*) as total,
sum(case when Attrition = 'Yes' then 1 else 0 end) as left_count,
round(sum(case when Attrition = 'Yes' then 1 else 0 end)*100.0/count(*),
2) as attrition_percent
from hr_employee_attrition
group by income_group
order by attrition_percent desc;
```

24. Which department has the highest average salary and lowest attrition?

```
select Department,
round(avg(MonthlyIncome), 2) as avg_income,
round(sum(case when Attrition = 'Yes' then 1 else 0 end)*100.0/count
(*), 2) as attrition_percent
from hr_employee_attrition
group by Department
order by avg_income desc;
```

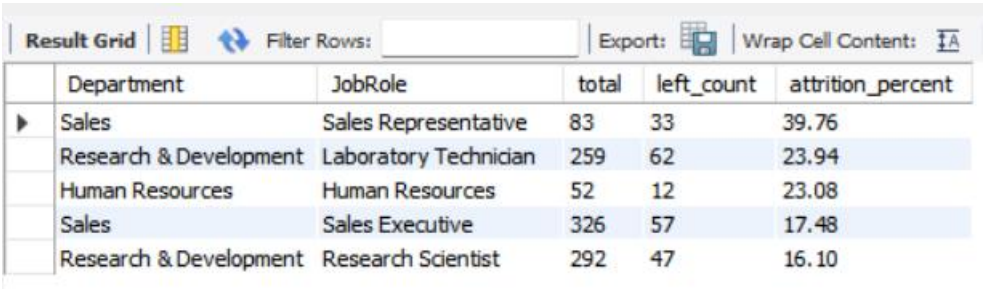


Department	avg_income	attrition_percent
Sales	6959.17	20.63
Human Resources	6654.51	19.05
Research & Development	6281.25	13.84

25. Which combination of Department and JobRole has highest attrition rate?

```
select Department, JobRole,
count(*) as total,
sum(case when Attrition = 'Yes' then 1 Else 0 end) as left_count,
```

```
round(sum(case when Attrition = 'Yes' then 1 Else 0 end)*100.0/count(*),
2) as attrition_percent
from hr_employee_attrition
group by Department, JobRole
order by attrition_percent desc
limit 5;
```

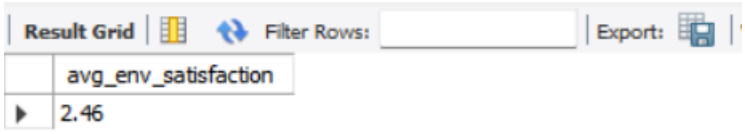


Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Department	JobRole	total	left_count	attrition_percent
Sales	Sales Representative	83	33	39.76
Research & Development	Laboratory Technician	259	62	23.94
Human Resources	Human Resources	52	12	23.08
Sales	Sales Executive	326	57	17.48
Research & Development	Research Scientist	292	47	16.10

26. What is the average environment satisfaction score for employees who left?

```
Select
round(avg(EnvironmentSatisfaction), 2) as avg_env_satisfaction
from hr_employee_attrition
where Attrition = 'Yes';
```



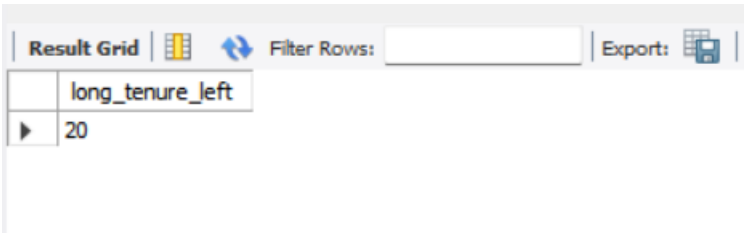
Result Grid | Filter Rows: | Export:

avg_env_satisfaction
2.46

27. How many employees have stayed more than 10 years but still left the company?

```
Select count(*) as long_tenure_left

from hr_employee_attrition
where YearsAtCompany > 10 and Attrition = 'Yes';
```



28. Which factors (OverTime, JobLevel, Income, Age) seem to be linked with higher attrition?

```
Select OverTime, JobLevel,
 round (avg(Age), 1) as avg_age,
 round(avg(MonthlyIncome), 0) as avg_income,
 round(sum(case when Attrition = 'Yes' then 1 else 0 end)*100.0/count(*), 2) as attrition_percent
from hr_employee_attrition
group by OverTime, JobLevel
order by attrition_percent desc;
```

OverTime	JobLevel	avg_age	avg_income	attrition_percent
Yes	1	32.5	2803	52.56
Yes	3	40.5	9996	20.63
Yes	2	36.9	5568	17.81
Yes	5	50.0	19220	16.67
No	1	32.5	2781	15.76
No	3	39.9	9745	12.26
Yes	4	48.8	15102	9.09
No	2	36.5	5478	6.70
No	5	47.0	19182	3.92