EMPLOYEE ATTRITION ANALYSIS

BUSINESS PROBLEM :

The business problem addressed in this analysis is employee attrition. Understanding the factors contributing to attrition and identifying potential patterns and trends can help organizations take proactive measures to retain talented employees, improve employee satisfaction, and reduce turnover costs.

THE QUERIES ARE:

1. Creating the database and use it:

```
CREATE DATABASE IF NOT EXISTS Hr_Database;

USE hr_database;
```

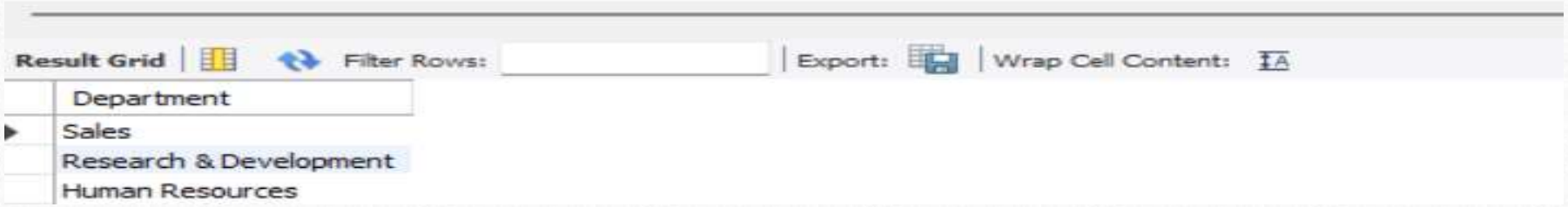
2. Write a query to get all employee data:

```
# 1. Write a query to get all employee details


select * from employees;
```

3. Write a query to get unique department name from employee table:

```
1      # 3. Write a query to get unique department name from employee table
2
3  •   select distinct(Department)
4      from employees;
```



4. Write a query to get the total salaries payable to employees:

```
1    # 4. Write a query to get the total salaries payable to employees
2
3 •  select sum(MonthlyIncome) from employees;
```

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

sum(MonthlyIncome)
9559309

5. Write a query to get the maximum and minimum salary from employees table:

```
1    # 5. Write a query to get the maximum and minimum salary from employees table
2
3    select max(MonthlyIncome), min(MonthlyIncome) from employees;
4
```

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

max(MonthlyIncome)	min(MonthlyIncome)
19999	1009

6. Write a query to get the average salary and number of employees in the employees table :

```
1    # 6. Write a query to get the average salary and number of employees in the employees table
2
3 •  select avg(MonthlyIncome), count(*) from employees;
```

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

avg(MonthlyIncome)	count(*)
6502.9313	1470

7. Write a query to get the number of jobs available in the employees table:

```
1    # 7. Write a query to get the number of jobs available in the employees table
2
3 •  select count(distinct JobRole) from employees;
```

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

count(distinct JobRole)
9

8. Write a query to display the salary for all employees whose salary is not in the range $10,000 through $15,000:

```
1    # 8. Write a query to display the salary for all employees whose salary is not in the range $10,000 through $15,000
2
3    select count(EmployeeNumber)
4    from employees
5    where MonthlyIncome not between 10000 and 15000;
```

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

count(EmployeeNumber)
1322

9. Write a query to display the first word from those job titles which contains more than one words:

```
1    # 9. Write a query to display the first word from those job titles which contains more than one words
2
3 •  select distinct(JobRole), substr(JobRole, 1,instr(JobRole,' ')-1) as first_word_of_job_role from employees;
```

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

JobRole	first_word_of_job_role
Sales Executive	Sales
Research Scientist	Research
Laboratory Technician	Laboratory
Manufacturing Director	Manufacturing
Healthcare Representative	Healthcare
Manager	
Sales Representative	Sales
Research Director	Research
Human Resources	Human

10. create a query to find the details of employees having 5+ years of experience in between the age group 27-35:

```
5   # 10. create a sql quuery to find the details of employess having 5+ years of experience in between the age group 27-35
6
7 • select * from employees
8   where age between 27 and 35
9   and TotalWorkingYears >5;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Age	Attrition	BusinessTravel	DailyRate	Department	DistanceFromHome	Education	EducationField	EmployeeCount	EmployeeNumber	EnvironmentSatisfaction	Gender	HourlyRate	JobInvolvement	Job
33	No	Travel_Frequently	1392	Research & Development	3	4	Life Sciences	1	5	4	Female	56	3	1
27	No	Travel_Rarely	591	Research & Development	2	1	Medical	1	7	1	Male	40	3	1
32	No	Travel_Frequently	1005	Research & Development	2	2	Life Sciences	1	8	4	Male	79	3	1
35	No	Travel_Rarely	809	Research & Development	16	3	Medical	1	14	1	Male	84	4	1
29	No	Travel_Rarely	153	Research & Development	15	2	Life Sciences	1	15	4	Female	49	2	2
28	Yes	Travel_Rarely	103	Research & Development	24	3	Life Sciences	1	19	3	Male	50	2	1
29	No	Travel_Rarely	1389	Research & Development	21	4	Life Sciences	1	20	2	Female	51	4	3
32	No	Travel_Rarely	334	Research & Development	5	2	Life Sciences	1	21	1	Male	80	4	1
34	No	Travel_Rarely	419	Research & Development	7	4	Life Sciences	1	28	1	Female	53	3	3
34	Yes	Travel_Rarely	699	Research & Development	6	1	Medical	1	31	2	Male	83	3	1

11. fetch the details of employees having maximum and minimum salary working in different departments who received less than 13% salary hike:

```
6   # 11. fetch the details of employees having maximum and minimum salary working in different departments who received less than 13% salary hike
7
8   select Department,min(MonthlyIncome) as min_salary,max(MonthlyIncome) as max_salary
9   from employees
10  where PercentSalaryHike < 13
11  group by Department;
```

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

Department	min_salary	max_salary
Sales	1200	19517
Research & Development	1009	19665
Human Resources	1555	19658

12. calculate the average monthly income of all the employees who worked more than 3 years whose education background is medical:

```
4   # 12. calculate the average monthly income of all the employees who worked more than 3 years whose education background is medical
5
6   select avg(MonthlyIncome)
7   from employees
8   where YearsAtCompany >3 and EducationField='Medical'
9   group by EducationField;
```

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

avg(MonthlyIncome)
7345.9784

13. identify the total no of married male and female employees who didn't received promotion in the last 2 year:

```
6   # 13. indentify the total no of married male and female employees who didn't received promotion in the last 2 year
7
8   select Gender,count(EmployeeNumber) as employee_count
9   from employees
10  where MaritalStatus='Married' and YearsSinceLastPromotion=1
11  group by Gender;
```

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

Gender	employee_count
Male	95
Female	61

14. Employees with max performance and no promotion for 4 years and above:

```
5    # 14. Employees with max performance and no promotion for 4 years and above
6
7 •  select * from employees
8    where PerformanceRating= (select max(PerformanceRating) from employees) and YearsSinceLastPromotion>=4;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Age	Attrition	BusinessTravel	DailyRate	Department	DistanceFromHome	Education	EducationField	EmployeeCount	EmployeeNumber	EnvironmentSatisfaction	Gender	HourlyRate	JobInvolvement	Job
32	Yes	Travel_Frequently	1125	Research & Development	16	1	Life Sciences	1	33	2	Female	72	1	1
34	No	Non-Travel	1065	Sales	23	4	Marketing	1	60	2	Male	72	3	2
32	No	Travel_Rarely	427	Research & Development	1	3	Medical	1	78	1	Male	33	3	2
40	No	Travel_Frequently	530	Research & Development	1	4	Life Sciences	1	119	3	Male	78	2	4
51	No	Travel_Frequently	1456	Research & Development	1	4	Medical	1	145	1	Female	30	2	3
26	No	Travel_Rarely	1355	Human Resources	25	1	Life Sciences	1	177	3	Female	61	3	1
53	No	Travel_Rarely	1436	Sales	6	2	Marketing	1	205	2	Male	34	3	2
46	No	Travel_Rarely	526	Sales	1	2	Marketing	1	244	2	Female	92	3	3
45	No	Non-Travel	1195	Research & Development	2	2	Medical	1	264	1	Male	65	2	4
30	No	Non-Travel	829	Research & Development	1	1	Life Sciences	1	292	3	Male	88	2	3

15. who has maximum and minimum percentage of salary hike:

```
5   # 15. who has maximum and minimum percentage of salary hike
6
7   select YearsAtCompany,PerformanceRating,YearsSinceLastPromotion,min(PercentSalaryHike),max(PercentSalaryHike)
8   from employees
9   group by YearsAtCompany,PerformanceRating,YearsSinceLastPromotion
10  order by max(PercentSalaryHike) desc,min(PercentSalaryHike) asc;
11
```

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

YearsAtCompany	PerformanceRating	YearsSinceLastPromotion	min(PercentSalaryHike)	max(PercentSalaryHike)
1	4	0	20	25
5	4	0	20	25
2	4	2	20	25
3	4	1	20	25
6	4	1	20	25
10	4	0	21	25
11	4	5	21	25
10	4	4	21	25
20	4	11	23	25
10	4	7	23	25
24	4	15	25	25

16. fetch the details of employees working overtime but given min salary hike and are more than with 5 yrs of company:

```
7   # 16. fetch the details of employees working overtime but given min salary hike and are more than with 5 yrs of company
8
9   select * from employees
10  where OverTime='Yes' and PercentSalaryHike = (select min(PercentSalaryHike) from employees) and YearsAtCompany >5;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Age	Attrition	BusinessTravel	DailyRate	Department	DistanceFromHome	Education	EducationField	EmployeeCount	EmployeeNumber	EnvironmentSatisfaction	Gender	HourlyRate	JobInvolvement	
41	Yes	Travel_Rarely	1102	Sales	1	2	Life Sciences	1	1	2	Female	94	3	2
33	No	Travel_Frequently	1392	Research & Development	3	4	Life Sciences	1	5	4	Female	56	3	1
25	Yes	Travel_Rarely	240	Sales	5	3	Marketing	1	142	3	Male	46	2	2
42	No	Travel_Rarely	269	Research & Development	2	3	Medical	1	351	4	Female	56	2	1
32	No	Travel_Rarely	588	Sales	8	2	Technical Degree	1	436	3	Female	65	2	2
29	Yes	Travel_Rarely	318	Research & Development	8	4	Other	1	454	2	Male	77	1	1
26	Yes	Travel_Frequently	426	Human Resources	17	4	Life Sciences	1	608	2	Female	58	3	1
24	No	Travel_Rarely	691	Research & Development	23	3	Medical	1	639	2	Male	89	4	1
33	Yes	Travel_Frequently	1076	Research & Development	3	3	Life Sciences	1	702	1	Male	70	3	1
50	No	Travel_Rarely	1207	Research & Development	28	1	Medical	1	716	4	Male	74	4	1

17. fetch the details of employees working no overtime but given max salary hike and are lees than with 5 years of company:

```
5   # 17. fetch the details of employees working no overtime but given max salary hike and are lees than with 5 yrs of company
6
7   select * from employees
8   where OverTime='No' and PercentSalaryHike = (select max(PercentSalaryHike) from employees) and YearsAtCompany <5;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Age	Attrition	BusinessTravel	DailyRate	Department	DistanceFromHome	Education	EducationField	EmployeeCount	EmployeeNumber	EnvironmentSatisfaction	Gender	HourlyRate	JobInvolvement	JobLev
19	No	Travel_Rarely	645	Research & Development	9	2	Life Sciences	1	1193	3	Male	54	3	1
49	No	Travel_Rarely	271	Research & Development	3	2	Medical	1	1509	3	Female	43	2	2
48	No	Travel_Frequently	365	Research & Development	4	5	Medical	1	1644	3	Male	89	2	4
28	No	Travel_Rarely	1217	Research & Development	1	3	Medical	1	1834	3	Female	67	3	1
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

CONCLUSION:

Employee attrition is a complex issue affecting organizations. By conducting a comprehensive data analysis, we have gained insights into various aspects related to attrition, including experience, age, salary, promotion history, overtime work, and marital status. These insights can guide organizations in implementing targeted retention strategies, improving salary structures, providing growth opportunities, and addressing employee concerns to reduce attrition rates, enhance employee satisfaction, and maintain a productive workforce. By proactively addressing the identified factors, organizations can create a positive work environment that fosters employee loyalty, engagement, and long-term success.