HR Attrition Analysis Using SQL

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Bussiness Problem:

The organization is experiencing high employee attrition, particularly among young employees in lower salary brackets and specific job roles. This is leading to increased hiring costs and skill gaps.

The HR team needs data-driven insights to identify which employee groups are most at risk of leaving, and why, so they can design retention strategies such as salary adjustments, training, and employee engagement programs

SQL Questions:

- Total employees in the company
- Total number of employees who left the company
- Attrition rate (%) per department
- Attrition rate (%) per job role
- Attrition by gender
- Average age of employees who left vs. stayed
- Average years at the company for employees who left
- Attrition by job satisfaction score
- Attrition by overtime (Yes/No)
- Departments with the highest attrition and
- average salary

1) Total employees in the company

Query:

```sql
SELECT COUNT(*) AS total_employees FROM employees;
```

Result:

	total_employees
▶	1470

2) Total number of employees who left the company

Query:

```
SELECT COUNT(*) AS total_left FROM employees WHERE Attrition = 'Yes';
```

Result:

	total_left
▶	237

3) Attrition rate (%) per department

Query:

```sql
SELECT department,
       COUNT(CASE WHEN attrition='Yes' THEN 1 END) * 100.0 / COUNT(*) AS attrition_rate
FROM employees
GROUP BY department;
```

Result:

	department	attrition_rate
▶	Research & Development	13.83975
	Sales	20.62780
	Human Resources	19.04762

4) Attrition rate (%) per job role

Query:

```
SELECT JobRole,
       COUNT(CASE WHEN attrition='Yes' THEN 1 END) * 100.0 / COUNT(*) AS attrition_rate
FROM employees
GROUP BY JobRole;
```

Result:

	JobRole	attrition_rate
▶	Laboratory Technician	23.93822
	Sales Representative	39.75904
	Research Scientist	16.09589
	Human Resources	23.07692
	Manufacturing Director	6.89655
	Sales Executive	17.48466
	Healthcare Representative	6.87023
	Research Director	2.50000
	Manager	4.90196

5) Attrition by gender

Query:

```
SELECT Gender, COUNT(*) AS left_count
FROM employees
WHERE attrition='Yes'
GROUP BY Gender;
```

Result:

	Gender	left_count
▶	Male	150
	Female	87

6) Average age of employees who left vs. stayed

Query:

```
SELECT attrition, AVG(age) AS avg_age
FROM employees
GROUP BY attrition;
```

Result:

	attrition	avg_age
▶	Yes	33.6076
	No	37.5612

7) Average years at company for employees who left

Query:

```
SELECT AVG(yearsatcompany) AS avg_years_left
FROM employees
WHERE attrition='Yes';
```

Result:

	avg_years_left
▶	5.1308

8) Attrition by job satisfaction score

Query:

```
SELECT JobSatisfaction, COUNT(*) AS left_count
FROM employees
WHERE attrition='Yes'
GROUP BY JobSatisfaction;
```

Result:

	JobSatisfaction	left_count
▶	3	73
	2	46
	4	52
	1	66

9) Attrition by overtime (Yes/No)

Query:

```
SELECT overtime, COUNT(*) AS left_count
FROM employees
WHERE attrition='Yes'
GROUP BY overtime;
```

Result:

	overtime	left_count
▶	No	110
	Yes	127

10) Departments with the highest attrition and average salary

Query:

```
SELECT department,
       COUNT(CASE WHEN attrition='Yes' THEN 1 END) AS TotalLeft,
       AVG(MonthlyIncome) AS AvgSalary
FROM employees
GROUP BY department
ORDER BY TotalLeft DESC;
```

Result:

department	TotalLeft	AvgSalary
Research & Development	133	6281.2529
Sales	92	6959.1726
Human Resources	12	6654.5079

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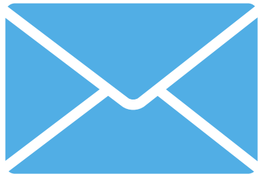

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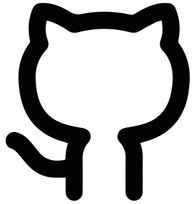

Git Hub

DataSet