

# SQL PROJECT ON EMPLOYEE ATTRITION

Unveiling the Reasons Behind Employee Attrition: A Data-Driven Approach



# WHAT WE WILL TALK ABOUT

In this project, we aim to analyze employee attrition using SQL to uncover patterns and factors that contribute to employee turnover. The dataset includes various attributes such as age, attrition status, business travel, daily rate, department, distance from home, education, and other relevant factors. By performing SQL queries and analysis, we will identify trends and correlations between these attributes and employee attrition. Our goal is to provide insights that can help in developing strategies to reduce attrition and improve employee retention. This analysis will involve data cleaning, exploratory data analysis, and interpretation of key findings.



# OVERALL ATTRITION COUNT

Results		Messages	
		Total_attrition	
1		237	

```
SELECT COUNT(*) AS Total_attrition FROM attrition
WHERE attrition = 'Yes';
```

237 employees departed from the organization during the specified period.



# TOTAL EMPLOYEES VS ATTRITION RATE

```
SELECT SUM(CASE WHEN attrition = 'Yes' THEN 1 END) as attri_emp, COUNT(*) AS Total_Emp FROM attrition;
```

Results Messages		
	attri_emp	Total_Emp
1	237	1470



The attrition of 237 employees indicates that, out of the total 1470 employees, 237 individuals departed from the organization during the given timeframe.

# OVERTIME AND ATTRITION CORRELATION

```
SELECT OverTime, COUNT(*) AS attri_emp_no FROM attrition
WHERE attrition= 'Yes'
GROUP BY OverTime
ORDER BY attri_emp_no DESC;
```



Results			Messages		
	OverTime	attri_emp_no			
1	Yes	127			
2	No	110			

Overtime and attrition demonstrate a positive correlation, with employees who work extra hours showing a higher attrition rate in contrast to those who do not engage in overtime.

# GENDER AND ATTRITION CORRELATION

```
SELECT gender, COUNT(*) AS attri_gen FROM attrition
WHERE attrition= 'YES'
GROUP BY gender
ORDER BY attri_gen DESC;
```

Results Messages		
	gender	attri_gen
1	Male	150
2	Female	87

Male employees exhibited a higher rate of attrition compared to their female counterparts within the company.

# PERFORMANCE RATING AND ATTRITION

```
SELECT performanceRating, COUNT(*) AS ATTRI_COUNT FROM attrition
WHERE attrition = 'Yes'
GROUP BY performanceRating
ORDER BY performanceRating DESC;
```

Results Messages		
	performanceRating	ATTRI_COUNT
1	4	37
2	3	200

Employees with lower performance ratings left the organization more frequently than those with higher performance ratings.

# PERCENTAGE SALARY INCREASE AND ATTRITION COUNT

```
SELECT percentsalaryhike, COUNT(*) AS ATTRI_COUNT FROM attrition
WHERE attrition='Yes'
GROUP BY percentsalaryhike
ORDER BY ATTRI_COUNT DESC;
```

Employees who received lower salary increases were found to depart from the company more frequently compared to their counterparts who received substantial salary hikes.

Results Messages		
	percentsalaryh...	ATTRI_COUNT
1	11	41
2	13	34
3	12	33
4	14	24
5	15	18
6	16	14
7	17	14
8	18	13
9	22	12
10	19	9
11	20	7
12	23	6
13	24	6
14	21	5
15	25	1





# RELATIONSHIP BETWEEN TENURE IN CURRENT POSITION AND ATTRITION RATE

```
SELECT TOP 20
    TotalWorkingYears,
    COUNT (CASE WHEN attrition='Yes' THEN 1 END) AS ATTRI_COUNT
FROM attrition
GROUP BY TotalWorkingYears
ORDER BY ATTRI_COUNT DESC;
```

Employees with less tenure at the company departed at a higher rate compared to those with more extensive experience within the organization.

Results Messages		
	TotalWorkingYears	ATTRI_COUNT
1	1	40
2	10	25
3	6	22
4	7	18
5	8	16
6	5	16
7	4	12
8	9	10
9	2	9
10	3	9
11	11	7
12	12	5
13	0	5
14	15	5
15	14	4
16	18	4
17	17	3
18	16	3
19	19	3
20	13	3

# YEARS IN THE CURRENT ROLE AND ATTRITION RATES

```
SELECT yearsincurrentrole, COUNT(CASE WHEN attrition='Yes' THEN 1 END) AS TS  
FROM attrition  
GROUP BY yearsincurrentrole  
ORDER BY yearsincurrentrole ASC;
```

Employees with less experience in their current roles were found to have a higher turnover rate compared to their more experienced counterparts within the same company.

	yearsincurrentrole	TS
1	0	73
2	1	11
3	10	2
4	11	0
5	12	1
6	13	1
7	14	1
8	15	2
9	16	0
10	17	0
11	18	0
12	2	68
13	3	16
14	4	15
15	5	1
16	6	2
17	7	31
18	8	7
19	9	6

# EMPLOYEE ATTRITION BASED ON AGE

```
SELECT CASE WHEN age <=29 THEN '18-29'
        WHEN age >= 30 AND age<=39 THEN '30-39'
        WHEN age >=40 AND age <=49 THEN '40-49'
        WHEN age >=50 AND age <=59 THEN '50-59'
        ELSE '60 or old' END AS 'age_range', COUNT (*) AS TS
FROM attrition
WHERE attrition='Yes'
GROUP BY CASE WHEN age <=29 THEN '18-29'
        WHEN age >= 30 AND age<=39 THEN '30-39'
        WHEN age >=40 AND age <=49 THEN '40-49'
        WHEN age >=50 AND age <=59 THEN '50-59'
        ELSE '60 or old' END;
```

Results			Messages		
	age_range	TS			
1	18-29	91			
2	30-39	89			
3	40-49	34			
4	50-59	23			

Employees between the ages of 18 and 29 exhibit the highest turnover rate compared to their senior counterparts.



# DEPARTMENT-WISE ATTRITION COUNT

```
SELECT department, COUNT(*) AS ATTRI FROM attrition
WHERE attrition= 'Yes'
GROUP BY department
ORDER BY ATTRI DESC;
```

Results Messages		
	department	ATTRI
1	Research & Development	133
2	Sales	92
3	Human Resources	12

Employees working in the R&D department have a higher attrition rate than other departments.



# ENVIRONMENTAL SATISFACTION, JOB SATISFACTION, AND RELATIONSHIP SATISFACTION THROUGH ATTRITION

```
SELECT
    EnvironmentSatisfaction,
    COUNT(*) AS TA_ENV
FROM attrition
WHERE attrition = 'Yes'
GROUP BY EnvironmentSatisfaction
ORDER BY TA_ENV DESC;
```

	EnvironmentSatisfaction	TA_ENV
1	1	72
2	3	62
3	4	60
4	2	43

```
SELECT
    jobsatisfaction,
    COUNT(CASE WHEN attrition='Yes' THEN 1 END) AS TA_JOB
FROM attrition
GROUP BY jobsatisfaction
ORDER BY TA_JOB DESC;
```

	jobsatisfaction	TA_JOB
1	3	73
2	1	66
3	4	52
4	2	46

```
SELECT
    relationshipsatisfaction,
    COUNT(*) AS TA_R
FROM attrition
WHERE attrition = 'Yes'
GROUP BY relationshipsatisfaction
ORDER BY TA_R DESC;
```

	relationshipsatisfaction	TA_R
1	3	71
2	4	64
3	1	57
4	2	45

Employees with low environmental satisfaction tended to depart from the company more frequently. Conversely, there exists a negative correlation between job satisfaction, relationship satisfaction, and attrition. Employees who rated highest in terms of job satisfaction and relationship satisfaction were more likely to leave the company.

# WORK-LIFE BALANCE AND ATTRITION RATE

```
SELECT  
    worklifebalance,  
    COUNT(CASE WHEN attrition='Yes' THEN 1 END) AS TA_W FROM attrition  
GROUP BY worklifebalance  
ORDER BY TA_W DESC;
```

Results		Messages
	worklifebalance	TA_W
1	3	127
2	2	58
3	4	27
4	1	25

Employees who rated highly in terms of work-life balance were found to leave the company more frequently than those with lower work-life balance ratings, indicating a negative correlation between work-life balance and attrition rates within the organization.



# DISTANCE FROM HOME AND ATTRITION COUNT

Employees residing closer to the office have shown a higher rate of attrition compared to their counterparts who live farther away.



```
SELECT
    distancefromhome ,
    COUNT(*) AS DA
FROM attrition
WHERE attrition = 'Yes'
GROUP BY distancefromhome
ORDER BY DA DESC;
```

	distancefromho...	DA
1	2	28
2	1	26
3	9	18
4	3	14
5	24	12
6	10	11
7	7	11
8	8	10
9	5	10
10	4	9
11	6	7
12	16	7
13	12	6
14	13	6
15	25	6
16	22	6
17	23	5
18	17	5
19	15	5
20	29	5
21	18	4
22	14	4
23	11	4
24	20	4
25	21	3
26	26	3
27	27	3
28	19	3
29	28	2



THANK YOU

