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

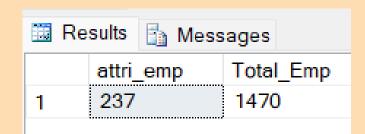
1 237
```

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

237 employees departed from the organization during the specified period.

TOTAL EMPLOYEES VS ATRRITION RATE

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





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;
```

ः Re	sults 🔓 Messa	ges
	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;
```

ः Re	sults	Me Me	ssage	s
	geno	der	attri_g	jen
1	Male	9	150	
2	Fem	ale	87	

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

PERFORMANCE RATING AND ATTRION

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

⊞ F	Results	Messages	
	perfo	ormanceRating	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.

ः Re	sults 🚹 Message	S
	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.

⊞ R∈	esults 🚹 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.

H R	esults 🚹 Messages	
	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

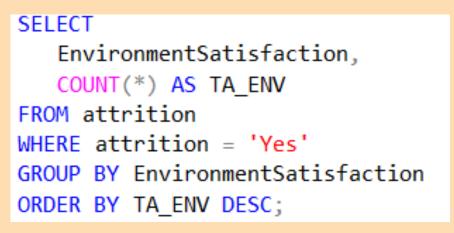
```
SELECT department, COUNT(*) AS ATTRI FROM attrition WHERE attrition= 'Yes'
GROUP BY department
ORDER BY ATTRI DESC;
```

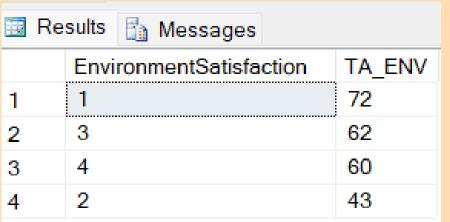
🖫 Results 🔓 Messages			
	department	ATTRI	
1	Research & Development	133	
2	Sales	92	
3	Human Resources	12	

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



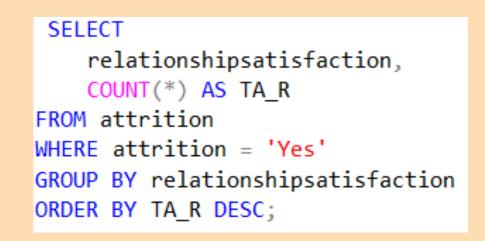
ENVIRONMENTAL SATISFACTION, JOB SATISFACTION, AND RELATIONSHIP SATISFACTION THROUGH ATTRITION





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

⊞ R	esults 🔓 Messages	6
	jobsatisfaction	TA_JOB
1	3	73
2	1	66
3	4	52
4	2	46



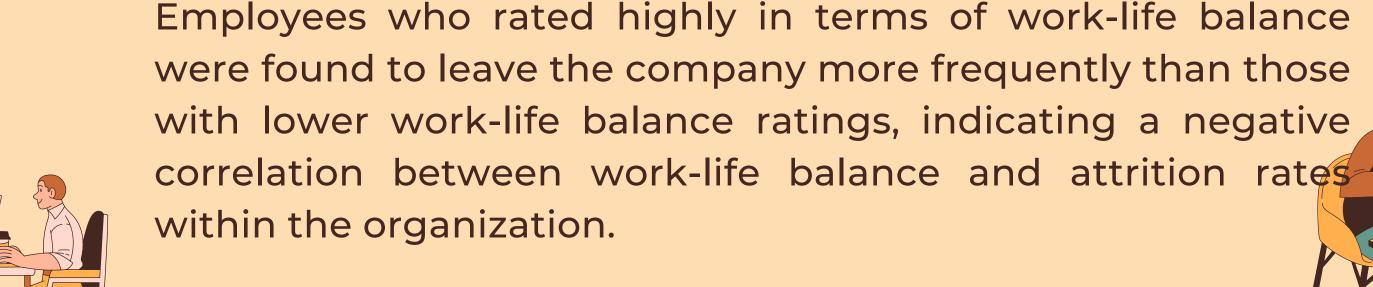
ation objection	
ationshipsatisfaction	TA_R
	71
	64
	57
	45

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		





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

