

# **EMPLOYEE ATTRITION ANALYSIS**

## **INTRODUCTION**

Employee attrition is a significant challenge faced by organizations worldwide, leading to loss of valuable talent, increased costs, and decreased productivity. Understanding the underlying factors that contribute to employee attrition is crucial for organizations to retain their workforce and maintain a positive work environment.

## **AIM**

The primary aim of employee attrition data analysis is to identify the root causes of employee turnover and develop strategies to mitigate attrition within an organization.

## **OBJECTIVE**

### **1. Data Collection:**

By acquiring a well-structured dataset. This dataset included details such as the Employee ID, Age, Gender, Attrition, Monthly Income, Monthly Rate, Distance from home to office, Daily Expense, Hourly Rate, Marital Status, Travel Rate, Business Involvement, Job satisfaction, Environment Satisfaction and other specified info on the employees.

### **2. SQL Queries:**

Designed and executed SQL queries to extract relevant information from the database. This involved a range of SQL operations, including SELECT, GROUP BY, ORDER BY and aggregation functions.

### 3. Exploratory Data Analysis (EDA):

Used SQL to perform a wide range of analyses to uncover hidden patterns and trends. These patterns can provide valuable insights into employees work life.

## **DATA OVERVIEW**

<b>COLUMNS</b>	<b>TYPE</b>
Employee ID	int
Age	int
Business Travel	text
Daily Rate	int
Department	text
Distance from home	int
Education	text
Education Field	text
Employee Count	int
Environment Satisfaction	int
Gender	text
Hourly Rate	int
Job Involvement	int
Job Role	text
Marital Status	text
Monthly Income	int
Monthly Rate	int

# QUERIES

1. To get total number of employees  
`select count(*) from employee_attirtion_new;`
2. Number of male staffs  
`select count(*) from employee_attirtion_new where gender='Male' ;`
3. Number of female staffs  
`select count(*) from employee_attirtion_new where gender='Female';`
4. The highest age range in the company  
`select max(age) from employee_attirtion_new;`
5. The lowest age range in the company  
`select min(age) from employee_attirtion_new;`
6. The avg age range in the company  
`select avg(age) from employee_attirtion_new;`
7. The age range of the employees in the company  
`alter table employee_attirtion_new add column age_category varchar(50);`  
`update employee_attirtion_new set age_category=case when age between`  
`50 and 60 then 'Older Adults'`  
`when age between 30 and 50 then 'Middle Aged Adults'`  
`else 'Young Adults' end ;`  
`select age_category,count(*) from employee_attirtion_new group by`  
`age_category;`
8. The number of employees in each department  
`select department,count(*) from employee_attirtion_new group by`  
`department;`

9. The minimum distance from home to the office  
`select min(distancefromhome) from employee_attrition_new;`
10. The max distance from home to office  
`select max(distancefromhome) from employee_attrition_new;`
11. The avg distance from home to office  
`select avg(distancefromhome) from employee_attrition_new;`
12. The number of attritions in the company  
`select attrition,count(*) from employee_attrition_new group by attrition;`
13. The number of attritions in each age category  
`select age_category,count(*) from employee_attrition_new where attrition='yes' group by age_category;`
14. The number employees who travel frequently, rarely, and never.  
`select businesstravel,count(*) from employee_attrition_new group by businesstravel;`
15. The number of attritions in each travel category  
`select businesstravel,count(*) from employee_attrition_new where attrition='yes' group by businesstravel;`
16. The number of employees in each education field  
`select educationfield,count(*) from employee_attrition_new group by educationfield order by count(*);`
17. The number of attritions in each educational field

```
select educationfield,count(*) from employee_attrition_new where  
attrition='yes' group by educationfield;
```

18.The Environmental Satisfaction of the employees

```
select EnvironmentSatisfaction,count(*) from employee_attrition_new group  
by EnvironmentSatisfaction;
```

19. The Job Satisfaction among the employees

```
select JobSatisfaction,count(*) from employee_attrition_new group by  
JobSatisfaction;
```

20.The number of attritions based on the job satisfaction

```
select JobSatisfaction,count(*) from employee_attrition_new where  
attrition='yes' group by JobSatisfaction;
```

21.The maximum hourly rate

```
select max(HourlyRate) from employee_attrition_new;
```

22.The minimum hourly rate

```
select min(HourlyRate) from employee_attrition_new;
```

23.The average hourly rate

```
select avg(HourlyRate) from employee_attrition_new;
```

24. Number of employees in each job role

```
select JobRole,count(*) from employee_attrition_new group by JobRole;
```

25.Number of attritions based on the job role of the employees

```
select JobRole,count(*) from employee_attrition_new where attrition='yes'  
group by JobRole;
```

26. Marital Status of the employees

```
select MaritalStatus,count(*) from employee_attrition_new group by  
MaritalStatus;
```

27. Highest Monthly Income

```
select max(MonthlyIncome) from employee_attrition_new;
```

28. Lowest Monthly Income

```
select min(MonthlyIncome) from employee_attrition_new;
```

29. Average Monthly Income

```
select avg(MonthlyIncome) from employee_attrition_new;
```

30. Monthly Income range of the employees

```
alter table employee_attrition_new add column month_rate varchar(20);  
update employee_attrition_new set month_rate = case when  
MonthlyIncome<=20000 and MonthlyIncome>=10000 then 'High'  
when MonthlyIncome<=9999 and MonthlyIncome>=6000 then 'Medium'  
else 'Low' end;  
select month_rate,count(*) from employee_attrition_new group by  
month_rate;
```

## **CONCLUSION**

The dataset on information of the employee attrition aims to transform raw data into actionable insights.

1. Total number of employees:

The total number of employees in the company are 1676 , where 998 are men and 678 are female.

2. The age range in the company

The highest age range in the company is 60 , the lowest age range is 18 and the average age range in the company is 36 to 37.

3. The number of employees in each age group

The number of young adults, ie between 18 to 30 are 358, middle aged ie 30- 50 are 1096 and older adults ie above 50 to 60 are 195 .

4. The number of employees in each department

The number of employees in

Cardiology : 531

Maternity : 796

Nuerology : 349.

5. The distance range for employees from home to office

The maximum distance from home to office is 29, the minimum distance is 1, and the average distance to travel from home to office is 9.2.

6. The number of attritions in the company

The number of attritions is 199 and people not willing to leave are 1477.

7. The number of attritions in each age group

The number of attritions in

young adults	:	101
Middle aged adults:		86
Older adults	:	12

**8. The number of employees in each travel category**

Travel rarely	:	1184
Travel frequently	:	320
Non travel	:	172

**9. The number of attritions with respect to travel category**

The number of attritions based on travelling is

travel frequently	:	57
travel rarely	:	126
non travel	:	16

**10. The number of employees in each educational field**

Human Resource	:	29
Other	:	88
Technical Degree	:	149
Marketing	:	189
Medical	:	524
Life Science	:	697

**11. The number of attritions in each educational field**

Human Resource	:	6
Other	:	8
Technical Degree	:	22
Marketing	:	28
Medical	:	51
Life Science	:	84



## 12. The environmental satisfaction of the employees

There are 330 employees who are very satisfied with the work environment, there are 508 people who are not very satisfied.

1	:	330
2	:	326
3	:	512
4	:	508

## 13. The Job satisfaction among the employees

There are 329 satisfied employees and 530 not satisfied employees.

1	:	329
2	:	310
3	:	507
4	:	530

## 14. The number of attritions based on the job satisfaction

1	:	52
2	:	42
3	:	60
4	:	45

## 15. Hourly rate

The maximum hourly rate is 100, the minimum hourly rate is 30 and the average hourly rate is 65.47.

## 16. Number of employees in each job role

Nurse	:	822
Other	:	534
Therapist	:	189
Administrative	:	115
Admin	:	16

#### **17. Number of attritions based on the job role of employees**

Nurse	:	107
Other	:	87
Therapist	:	4
Administrative	:	1

#### **18. Marital Status of the employees**

Single	:	522
Married	:	777
Divorced	:	377

#### **19. Monthly Income of the employees**

The highest income earned is 19999, and the lowest earned is 1009, the average amount earned is 6516.

#### **20. Categorizing employees based on monthly income**

Low	:	1043
Medium (9999 - 6000)	:	308
High (10000 - 20000)	:	325

