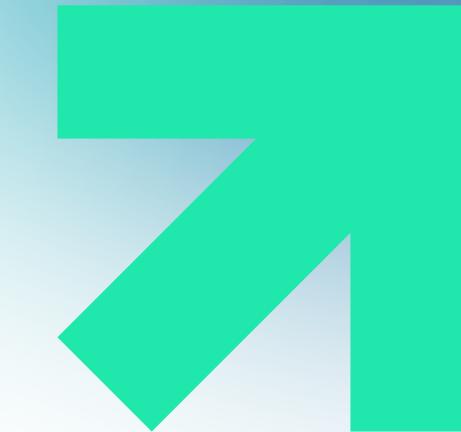
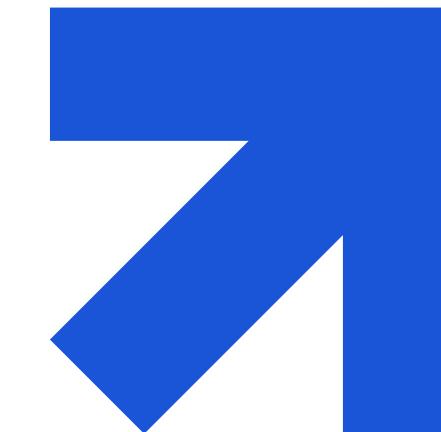


Human Resource Analytics



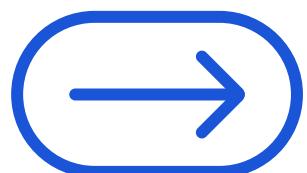
The objective is to create HR Database and write SQL queries to QA the HR Analytics Dashboard developed in Power BI and Tableau.

Problem Statement

The Problem: Employee attrition

In today's fast paced business environment, employee retention and satisfaction play a crucial role in organizational success. Companies struggle with high turnover rates, but often, the reasons are buried under spreadsheets. So the questions arise-

- What if HR managers could instantly see why employees leave?
- Which departments are most affected?
- How does job satisfaction impact retention?
- Which age group causes more attrition?



Business Requirement

- **KPIs**
 1. Employee Count
 2. Attrition Count
 3. Attrition Rate
 4. Active Employee
 5. Average Age
 6. Attrition by gender
- Department-wise attrition
- No. of employees by age group
- Education field wise attrition
- Attrition Rate by Gender for different Age Group
- Job Satisfaction Rating



DATABASE & TABLE CREATION

```
1 •  create database HR_database;
2 •  create table hrdata
3 •  (
4     emp_no int8 PRIMARY KEY,
5     gender varchar(50) NOT NULL,
6     marital_status varchar(50),
7     age_band varchar(50),
8     age int8,
9     department varchar(50),
10    education varchar(50),
11    education_field varchar(50),
12    job_role varchar(50),
13    business_travel varchar(50),
14    employee_count int8,
15    attrition varchar(50),
16    attrition_label varchar(50),
17    job_satisfaction int8,
18    active_employee int8
19 )
```

KPI MEASURES

Employee Count

```
1 •   SELECT  
2       SUM(employee_count) AS Employee_Count  
3   FROM  
4       hrdata;
```

	Employee_Count
▶	1470

KPI MEASURES

Attrition Count

```
1 •   SELECT  
2           COUNT(attrition)  
3   FROM  
4       hrdata  
5   WHERE  
6       attrition = 'Yes';
```

	count(attrition)
▶	237

KPI MEASURES

Attrition Rate

```
1 •   SELECT
2   -   ROUND(((SELECT
3           COUNT(attrition)
4           FROM
5           hrdata
6           WHERE
7           attrition = 'Yes') / SUM(employee_count)) * 100,
8           2) AS attrition_rate
9   FROM
10  hrdata;
```

	attrition_rate
▶	16.12

KPI MEASURES

Active Employees

```
1 •   SELECT
2   -     SUM(employee_count) - (SELECT
3           COUNT(attrition)
4             FROM
5               hrdata
6             WHERE
7               attrition = 'Yes') AS active_employee
8   FROM
9     hrdata;
```

	active_employee
▶	1233

KPI MEASURES

Average Age

```
1 • SELECT  
2     ROUND(AVG(age), 0) AS Avg_age  
3 FROM  
4 hrdata
```

	Avg_age
▶	37

Attrition by Gender

```
1 •   SELECT
2           gender, COUNT(attrition) AS attrition_count
3   FROM
4       hrdata
5   WHERE
6       attrition = 'Yes'
7   GROUP BY gender
8   ORDER BY COUNT(attrition) DESC;
```

	gender	attrition_count
▶	Male	150
	Female	87

Department-wise Attrition

```
1 •   SELECT
2       department,
3       COUNT(*) AS attrition_count,
4       ROUND(
5           COUNT(*) * 100.0 / (SELECT COUNT(*) FROM hrdata WHERE attrition = 'Yes'),
6           2
7       ) AS pct
8   FROM hrdata
9   WHERE attrition = 'Yes'
10  GROUP BY department
11  ORDER BY attrition_count DESC;
```

	department	attrition_count	pct
▶	R&D	133	56.12
	Sales	92	38.82
	HR	12	5.06

Number of Employees by Age

```
1 •   SELECT  
2       age, SUM(employee_count) AS employee_count  
3   FROM  
4       hrdata  
5   GROUP BY age  
6   ORDER BY age;
```

	age	employee_count
▶	18	8
	19	9
	20	11
	21	13
	22	16

Education Field-wise Attrition

```
1 •   SELECT
2       education_field, COUNT(attrition) AS attrition_count
3   FROM
4       hrdata
5   WHERE
6       attrition = 'Yes'
7   GROUP BY education_field
8   ORDER BY COUNT(attrition) DESC;
```

	education_field	attrition_count
▶	Life Sciences	89
	Medical	63
	Marketing	35
	Technical Degree	32
	Other	11
	Human Resources	7

Attrition Rate by Gender - Different Age Group

```
1 •   SELECT
2       age_band,
3       gender,
4       ROUND(SUM(CASE
5           WHEN attrition = 'Yes' THEN 1
6           ELSE 0
7       END) * 100 / COUNT(*),
8       2) AS attrition_rate_percentage
9
10      FROM
11      hrdata
12      GROUP BY age_band , gender
13      ORDER BY age_band , gender DESC;
```

age_band	gender	attrition_rate_percentage
25 - 34	Male	20.47
25 - 34	Female	19.82
35 - 44	Male	11.97
35 - 44	Female	7.14
45 - 54	Male	12.12
45 - 54	Female	7.96
Over 55	Male	18.18
Over 55	Female	12.00
Under 25	Male	33.33
Under 25	Female	48.65

Job Satisfaction Rating

```
1 •   SELECT
2       job_role, job_satisfaction, SUM(employee_count)
3   FROM
4       hrdata
5   WHERE
6       job_satisfaction IN ('1' , '2', '3', '4')
7   GROUP BY job_role , job_satisfaction
8   ORDER BY job_role , job_satisfaction;
```

job_role	job_satisfaction	SUM(employee_count)
Healthcare Representative	1	26
Healthcare Representative	2	19
Healthcare Representative	3	43
Healthcare Representative	4	43
Human Resources	1	10
Human Resources	2	16
Human Resources	3	13
Human Resources	4	13
Laboratory Technician	1	56
Laboratory Technician	2	48
Laboratory Technician	3	75
Laboratory Technician	4	80
Manager	1	21
Manager	2	21
Manager	3	27
Manager	4	33
Manufacturing Director	1	26

KEY INSIGHTS

- **16.12% Attrition Rate** - It's a significant chunk of the workforce!
- **R&D Department** - 56% Attrition - Why so high? Lack of career growth? Workload?
- **Age 25-34** is the most vulnerable - Are younger employees leaving for better opportunities?
- **Job Satisfaction Matters** - Those with lower satisfaction scores had higher attrition.

Rewarding
Excellence





THANK YOU!