**DATA ANALYST PORTFOLIO SQL PROJECT**

**TESTING TABLEAU/ POWER BI REPORTS IN SQL**

**Create Table**

create table hrdata

(

emp\_no int8 PRIMARY KEY,

gender varchar(50) NOT NULL,

marital\_status varchar(50),

age\_band varchar(50),

age int8,

department varchar(50),

education varchar(50),

education\_field varchar(50),

job\_role varchar(50),

business\_travel varchar(50),

employee\_count int8,

attrition varchar(50),

attrition\_label varchar(50),

job\_satisfaction int8,

active\_employee int8

)

**Import Data in Table Using Query**

COPY hrdata FROM 'D:\hrdata.csv' DELIMITER ',' CSV HEADER;

**Employee Count:**

select sum(employee\_count) as Employee\_Count from hrdata;

**Employee Count by Education Column :**

select sum(employee\_count) as Employee\_Count from hrdata where education = 'Doctoral Degree';

select sum(employee\_count) as Employee\_Count from hrdata where education = 'Associates Degree';

select sum(employee\_count) as Employee\_Count from hrdata where education = 'High School';

select sum(employee\_count) as Employee\_Count from hrdata where education = 'Master''s Degree';

select sum(employee\_count) as Employee\_Count from hrdata where education = 'Bachelor''s Degree';

**Attrition Count:**

select count(attrition) from hrdata where attrition='Yes';

**Attrition Count by Education Column :**

select count(attrition) from hrdata where attrition='Yes' and education = 'Doctoral Degree';

select count(attrition) from hrdata where attrition='Yes' and education = 'Associates Degree';

select count(attrition) from hrdata where attrition='Yes' and education = 'High School';

select count(attrition) from hrdata where attrition='Yes' and education = 'Master''s Degree';

select count(attrition) from hrdata where attrition='Yes' and education = 'Bachelor''s Degree';

**Attrition Rate:**

select round (((select count(attrition) from hrdata where attrition='Yes')/

sum(employee\_count)) \* 100,2) as Attrition\_Rate from hrdata;

**Active Employee:**

select sum(employee\_count) - (select count(attrition) from hrdata where attrition='Yes') as Active\_Employee from hrdata;

**-- OR --**

select (select sum(employee\_count) from hrdata) - count(attrition) as active\_employee from hrdata

where attrition='Yes';

**Attrition by Gender on Active Employees :**

select sum(employee\_count) - (select count(attrition) from hrdata where attrition='Yes' and gender='Male') as Attrition\_by\_Gender from hrdata where gender = 'Male';

select sum(employee\_count) - (select count(attrition) from hrdata where attrition='Yes' and gender='Female') as Attrition\_by\_Gender from hrdata where gender = 'Female';

**Average Age:**

select round(avg(age),0) Avg\_Age from hrdata;

**Attrition by Gender:**

select gender, count(attrition) as attrition\_count from hrdata

where attrition='Yes'

group by gender

order by count(attrition) desc;

**Attrition by gender on Education column:**

select gender, count(attrition) as attrition\_count from hrdata where attrition='Yes' and education = 'Doctoral Degree' group by gender order by count(attrition) desc;

select gender, count(attrition) as attrition\_count from hrdata where attrition='Yes' and education = 'Associates Degree' group by gender order by count(attrition) desc;

select gender, count(attrition) as attrition\_count from hrdata where attrition='Yes' and education = 'High School' group by gender order by count(attrition) desc;

select gender, count(attrition) as attrition\_count from hrdata where attrition='Yes' and education = 'Master''s Degree' group by gender order by count(attrition) desc;

select gender, count(attrition) as attrition\_count from hrdata where attrition='Yes' and education = 'Bachelor''s Degree' group by gender order by count(attrition) desc;

**Department wise Attrition:**

select department, count(attrition), round((cast (count(attrition) as numeric) /

(select count(attrition) from hrdata where attrition= 'Yes')) \* 100, 2) as pct from hrdata

where attrition='Yes'

group by department

order by count(attrition) desc;

**Department wise attrition by gender:**

select department, count(attrition), round((cast (count(attrition) as numeric) /

(select count(attrition) from hrdata where attrition= 'Yes' and gender = 'Male')) \* 100, 2) as pct from hrdata

where attrition='Yes' and gender = 'Male'

group by department

order by count(attrition) desc;

select department, count(attrition), round((cast (count(attrition) as numeric) /

(select count(attrition) from hrdata where attrition= 'Yes' and gender = 'Female')) \* 100, 2) as pct from hrdata

where attrition='Yes' and gender = 'Female'

group by department

order by count(attrition) desc;

**Employee count by Department Column :**

select sum(employee\_count) as Employee\_Count from hrdata where department = 'Sales';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'R&D';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'HR';

**Attrition Count by Department Column :**

select count(attrition) from hrdata where attrition='Yes' and department = 'Sales';

select count(attrition) from hrdata where attrition='Yes' and department = 'R&D';

select count(attrition) from hrdata where attrition='Yes' and department = 'HR';

**Attrition rate by Department Column:**

select round (((select count(attrition) from hrdata where attrition='Yes' and department = 'Sales')/sum(employee\_count)) \* 100,2) from hrdata where department = 'Sales';

select round (((select count(attrition) from hrdata where attrition='Yes' and department = 'R&D')/sum(employee\_count)) \* 100,2) from hrdata where department = 'R&D';

select round (((select count(attrition) from hrdata where attrition='Yes' and department = 'HR')/ sum(employee\_count)) \* 100,2) from hrdata where department = 'HR';

**Education Field wise Attrition:**

select education\_field, count(attrition) as attrition\_count from hrdata

where attrition='Yes'

group by education\_field

order by count(attrition) desc;

**Employee Count by Education Field Column :**

select sum(employee\_count) as Employee\_Count from hrdata where education\_field = 'Life Sciences';

select sum(employee\_count) as Employee\_Count from hrdata where education\_field = 'Medical';

select sum(employee\_count) as Employee\_Count from hrdata where education\_field = 'Marketing';

select sum(employee\_count) as Employee\_Count from hrdata where education\_field = 'Technical Degree';

select sum(employee\_count) as Employee\_Count from hrdata where education\_field = 'Other';

select sum(employee\_count) as Employee\_Count from hrdata where education\_field = 'Human Resources';

**Attrition Count by Education Field Column :**

select count(attrition) from hrdata where attrition='Yes' and education\_field = 'Life Sciences';

select count(attrition) from hrdata where attrition='Yes' and education\_field = 'Medical';

select count(attrition) from hrdata where attrition='Yes' and education\_field = 'Marketing';

select count(attrition) from hrdata where attrition='Yes' and education\_field = 'Technical Degree';

select count(attrition) from hrdata where attrition='Yes' and education\_field = 'Other';

select count(attrition) from hrdata where attrition='Yes' and education\_field = 'Human Resources';

**Department wise Attrition and Education Field wise Attrition :**

**Employee count by Department Column and Education Field Column :**

select sum(employee\_count) as Employee\_Count from hrdata where department = 'Sales' and education\_field = 'Life Sciences';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'Sales' and education\_field = 'Medical';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'Sales' and education\_field = 'Marketing';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'Sales' and education\_field = 'Technical Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'Sales' and education\_field = 'Other';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'Sales' and education\_field = 'Human Resources';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'R&D' and education\_field = 'Life Sciences';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'R&D' and education\_field = 'Medical';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'R&D' and education\_field = 'Marketing';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'R&D' and education\_field = 'Technical Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'R&D' and education\_field = 'Other';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'R&D' and education\_field = 'Human Resources';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'HR' and education\_field = 'Life Sciences';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'HR' and education\_field = 'Medical';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'HR' and education\_field = 'Marketing';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'HR' and education\_field = 'Technical Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'HR' and education\_field = 'Other';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'HR' and education\_field = 'Human Resources';

**Attrition Count by Department Column and Education Field Column:**

select count(attrition) from hrdata where attrition='Yes' and department = 'Sales' and education\_field = 'Life Sciences';

select count(attrition) from hrdata where attrition='Yes' and department = 'Sales' and education\_field = 'Medical';

select count(attrition) from hrdata where attrition='Yes' and department = 'Sales' and education\_field = 'Marketing';

select count(attrition) from hrdata where attrition='Yes' and department = 'Sales' and education\_field = 'Technical Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'Sales' and education\_field = 'Other';

select count(attrition) from hrdata where attrition='Yes' and department = 'Sales' and education\_field = 'Human Resources';

select count(attrition) from hrdata where attrition='Yes' and department = 'R&D' and education\_field = 'Life Sciences';

select count(attrition) from hrdata where attrition='Yes' and department = 'R&D' and education\_field = 'Medical';

select count(attrition) from hrdata where attrition='Yes' and department = 'R&D' and education\_field = 'Marketing';

select count(attrition) from hrdata where attrition='Yes' and department = 'R&D' and education\_field = 'Technical Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'R&D' and education\_field = 'Other';

select count(attrition) from hrdata where attrition='Yes' and department = 'R&D' and education\_field = 'Human Resources';

select count(attrition) from hrdata where attrition='Yes' and department = 'HR' and education\_field = 'Life Sciences';

select count(attrition) from hrdata where attrition='Yes' and department = 'HR' and education\_field = 'Medical';

select count(attrition) from hrdata where attrition='Yes' and department = 'HR' and education\_field = 'Marketing';

select count(attrition) from hrdata where attrition='Yes' and department = 'HR' and education\_field = 'Technical Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'HR' and education\_field = 'Other';

select count(attrition) from hrdata where attrition='Yes' and department = 'HR' and education\_field = 'Human Resources';

**Department wise Attrition, Education Field wise Attrition and Education wise Attrition :**

**Employee count by Department Column, Education Field Column and Education Column:**

select sum(employee\_count) as Employee\_Count from hrdata where department = 'Sales' and education\_field = 'Life Sciences' and education = 'Doctoral Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'Sales' and education\_field = 'Medical' and education = 'Associates Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'Sales' and education\_field = 'Marketing' and education = 'High School';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'Sales' and education\_field = 'Technical Degree' and education = 'Master''s Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'Sales' and education\_field = 'Other' and education = 'Bachelor''s Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'R&D' and education\_field = 'Life Sciences' and education = 'Doctoral Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'R&D' and education\_field = 'Medical' and education = 'Associates Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'R&D' and education\_field = 'Marketing' and education = 'High School';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'R&D' and education\_field = 'Technical Degree' and education = 'Master''s Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'R&D' and education\_field = 'Other' and education = 'Bachelor''s Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'HR' and education\_field = 'Life Sciences' and education = 'Doctoral Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'HR' and education\_field = 'Medical' and education = 'Associates Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'HR' and education\_field = 'Marketing' and education = 'High School';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'HR' and education\_field = 'Technical Degree' and education = 'Master''s Degree';

select sum(employee\_count) as Employee\_Count from hrdata where department = 'HR' and education\_field = 'Other' and education = 'Bachelor''s Degree';

**Attrition Count by Department Column, Education Field Column and Education Column**

select count(attrition) from hrdata where attrition='Yes' and department = 'Sales' and education\_field = 'Life Sciences' and education = 'Doctoral Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'Sales' and education\_field = 'Medical' and education = 'Associates Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'Sales' and education\_field = 'Marketing' and education = 'High School';

select count(attrition) from hrdata where attrition='Yes' and department = 'Sales' and education\_field = 'Technical Degree' and education = 'Master''s Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'Sales' and education\_field = 'Other' and education = 'Bachelor''s Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'R&D' and education\_field = 'Life Sciences' and education = 'Doctoral Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'R&D' and education\_field = 'Medical' and education = 'Associates Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'R&D' and education\_field = 'Marketing' and education = 'High School';

select count(attrition) from hrdata where attrition='Yes' and department = 'R&D' and education\_field = 'Technical Degree' and education = 'Master''s Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'R&D' and education\_field = 'Other' and education = 'Bachelor''s Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'HR' and education\_field = 'Life Sciences' and education = 'Doctoral Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'HR' and education\_field = 'Medical' and education = 'Associates Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'HR' and education\_field = 'Marketing' and education = 'High School';

select count(attrition) from hrdata where attrition='Yes' and department = 'HR' and education\_field = 'Technical Degree' and education = 'Master''s Degree';

select count(attrition) from hrdata where attrition='Yes' and department = 'HR' and education\_field = 'Other' and education = 'Bachelor''s Degree';

**No of Employee by Age Group :**

SELECT age, sum(employee\_count) AS employee\_count FROM hrdata GROUP BY age order by age;

**--or--**

select age\_band, gender, sum(employee\_count) from hrdata

group by age\_band, gender

order by age\_band, gender desc;

**Department wise No of Employees by Age Group:**

SELECT age, sum(employee\_count) AS employee\_count FROM hrdata where department = 'Sales' GROUP BY age order by age;

SELECT age, sum(employee\_count) AS employee\_count FROM hrdata where department = 'R&D' GROUP BY age order by age;

SELECT age, sum(employee\_count) AS employee\_count FROM hrdata where department = 'HR' GROUP BY age order by age;

**Education Field wise Attrition:**

select education\_field, count(attrition) as attrition\_count from hrdata

where attrition='Yes'

group by education\_field

order by count(attrition) desc;

**Department wise Education Field:**

select education\_field, count(attrition) as attrition\_count from hrdata where attrition='Yes' and department = 'Sales' group by education\_field order by count(attrition) desc;

select education\_field, count(attrition) as attrition\_count from hrdata where attrition='Yes' and department = 'R&D' group by education\_field order by count(attrition) desc;

select education\_field, count(attrition) as attrition\_count from hrdata where attrition='Yes' and department = 'HR' group by education\_field order by count(attrition) desc;

**Attrition Rate by Gender for different Age Group :**

select age\_band, gender, count(attrition) as attrition,

round((cast(count(attrition) as numeric) / (select count(attrition) from hrdata where attrition = 'Yes')) \* 100,2) as pct

from hrdata

where attrition = 'Yes'

group by age\_band, gender

order by age\_band, gender desc;

**Job Satisfaction Rating :**

**---Run this query first to activate the cosstab() function in postgres**

CREATE EXTENSION IF NOT EXISTS tablefunc;

**---Then run this to get o/p-**

SELECT \*

FROM crosstab(

'SELECT job\_role, job\_satisfaction, sum(employee\_count)

FROM hrdata

GROUP BY job\_role, job\_satisfaction

ORDER BY job\_role, job\_satisfaction'

) AS ct(job\_role varchar(50), one numeric, two numeric, three numeric, four numeric)

ORDER BY job\_role;