**DATA ANALYST PORTFOLIO SQL PROJECT**

**TESTING 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

)

select count(emp\_no) from hrdata;

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

select round((select count(emp\_no) from hrdata where attrition='Yes')/count(emp\_no)\*100,2) from hrdata;

select count(emp\_no)-(select count(emp\_no) from hrdata where attrition='Yes') from hrdata;

select avg(age) from hrdata;

select \* from hrdata;

select count(emp\_no) from hrdata where education='Associates Degree' ;

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

select round((select count(emp\_no) from hrdata where attrition='Yes' and education='Associates Degree')/count(emp\_no)\*100,2) from hrdata where education='Associates Degree';

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

select avg(age) from hrdata where education='Associates Degree';

**Random Chart Testing**

select count(emp\_no) from hrdata where department='Sales';

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

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

select count(emp\_no)-(select count(emp\_no) from hrdata where attrition='Yes' and department='Sales') from hrdata where department='Sales';

select avg(age) from hrdata where department='Sales' ;

select count(emp\_no) from hrdata where department='R&D' and attrition='Yes' and age\_band='Under 25';

select count(emp\_no) from hrdata where department='R&D' and age\_band='Under 25';

select job\_role, job\_satisfaction, count(emp\_no) from hrdata where department='Sales' group by job\_role,job\_satisfaction ;

select education\_field,count(emp\_no) from hrdata where department='Sales' and attrition='Yes' group by education\_field;

SELECT

job\_role,

SUM(CASE WHEN job\_satisfaction = 1 THEN employee\_count ELSE 0 END) AS one,

SUM(CASE WHEN job\_satisfaction = 2 THEN employee\_count ELSE 0 END) AS two,

SUM(CASE WHEN job\_satisfaction = 3 THEN employee\_count ELSE 0 END) AS three,

SUM(CASE WHEN job\_satisfaction = 4 THEN employee\_count ELSE 0 END) AS four

FROM hrdata

where department ='R&D'

GROUP BY job\_role

ORDER BY job\_role;

**Employee Count:**

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

**Attrition Count:**

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

**Attrition Rate:**

select

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

sum(employee\_count)) \* 100,2)

from hrdata;

**Active Employee:**

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

*OR*

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

where attrition='Yes';

**Average Age:**

select round(avg(age),0) 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;

**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;

**No of Employee by Age Group**

SELECT age,  sum(employee\_count) AS employee\_count FROM hrdata

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;

**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;

**TEST DOCUMENT**

|  |  |
| --- | --- |
| **Client Name** | AAAA |
| **Report Name** | HR Analytics Dashboard |
| **Developer Name** | BBBB |
| **Tester Name** |  |
| **Project Manager** |  |
| **Development Tool** | **Power BI Dashboard** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test No.** | **Sheet Name** | **Query** | **Test Result** | **QA Remark** |
| 1 | KPI- Employee Count | select sum(employee\_count) as Employee\_Count from hrdata; | Pass | Exact match |
| 2 | KPI- Attrition Count | select count(attrition) from hrdata where attrition='Yes'; | Pass | Exact match |
| 3 | KPI- Attrition Rate | select  round (((select count(attrition) from hrdata where attrition='Yes')/  sum(employee\_count)) \* 100,2)  from hrdata; | Pass | Exact match |
| 4 | KPI- Active Employee | select sum(employee\_count) - (select count(attrition) from hrdata  where attrition='Yes') from hrdata; | Pass | Exact match |
| 5 | KPI- Average Age | select round(avg(age),0) from hrdata; | Pass | Exact match |
| 6 | Attrition by Gender | select gender, count(attrition) as attrition\_count from hrdata  where attrition='Yes'  group by gender  order by count(attrition) desc; | Pass | Exact match |
| 7 | 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; | Pass | Exact match |
| 8 | No of Employee by Age Group | SELECT age,  sum(employee\_count) AS employee\_count FROM hrdata  GROUP BY age  order by age; | Pass | Exact match |
| 9 | 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; | Pass | Exact match |
| 10 | 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 desc; | Pass | Exact match |
| 11 | Job Satisfaction Rating | SELECT  job\_role,  SUM(CASE WHEN job\_satisfaction = 1 THEN employee\_count ELSE 0 END) AS one,  SUM(CASE WHEN job\_satisfaction = 2 THEN employee\_count ELSE 0 END) AS two,  SUM(CASE WHEN job\_satisfaction = 3 THEN employee\_count ELSE 0 END) AS three,  SUM(CASE WHEN job\_satisfaction = 4 THEN employee\_count ELSE 0 END) AS four  FROM hrdata  where department ='R&D'  GROUP BY job\_role  ORDER BY job\_role; | Pass | Exact match |

**Test Result:**

|  |  |
| --- | --- |
| **Total Tests** | 11 |
| **Pass** | 11 |
| **Fail** | 00 |
| **Blocked** | 00 |
| **Not Executed** | 00 |