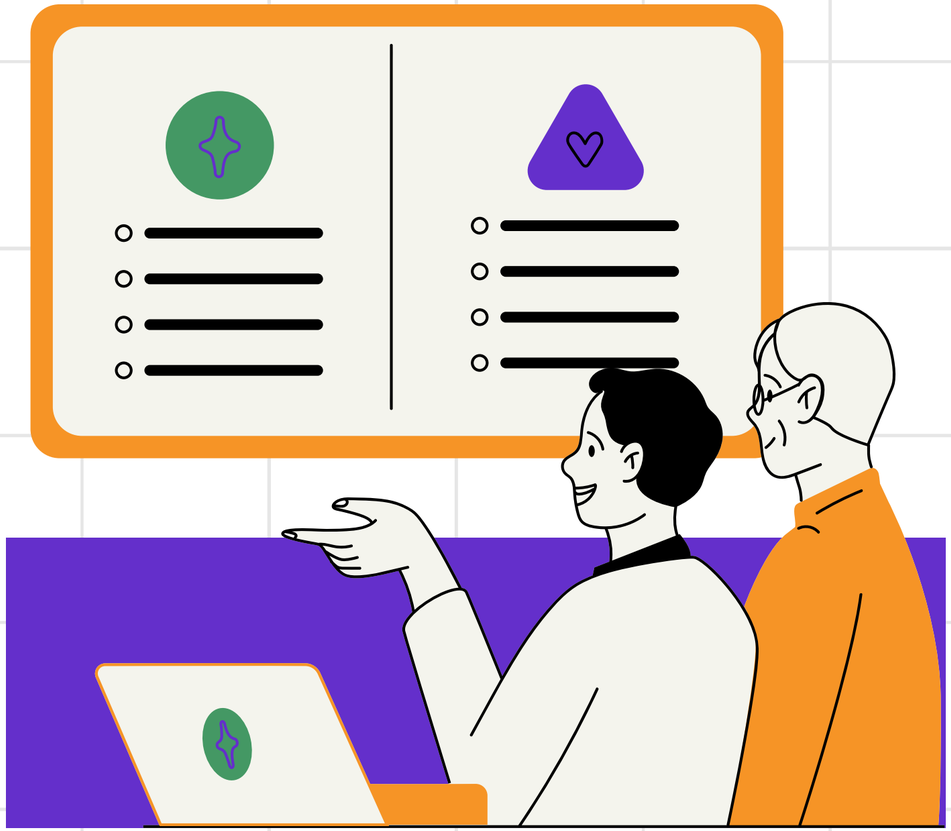
SQL PROJECT ON HR ANALYSIS

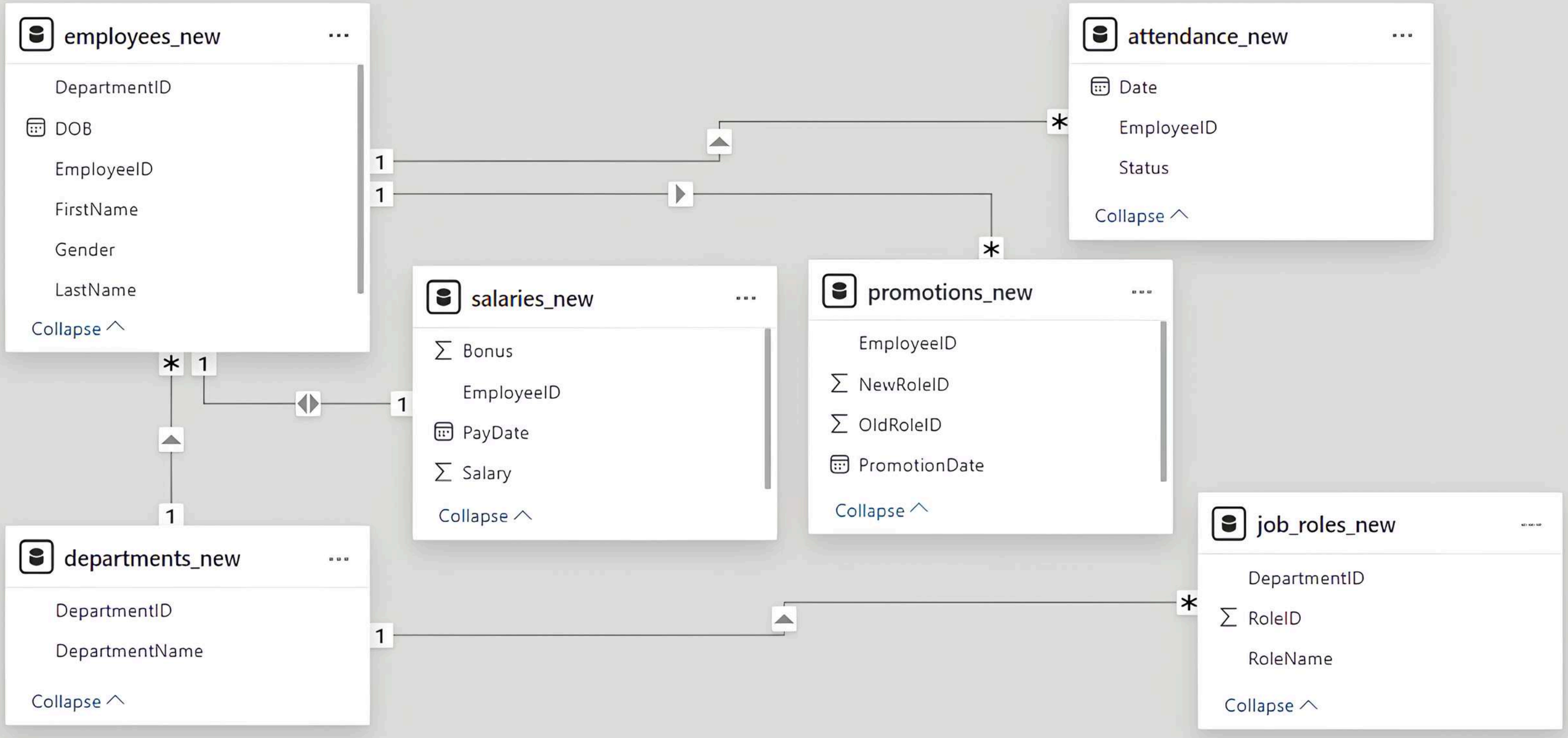
SQL PROJECT # 4

HELLO!

My Name is Waleed Ilyas. In this Project, I have Utilized SQL Queries to solve the Questions that are related to Human Resource (HR) Analysis.



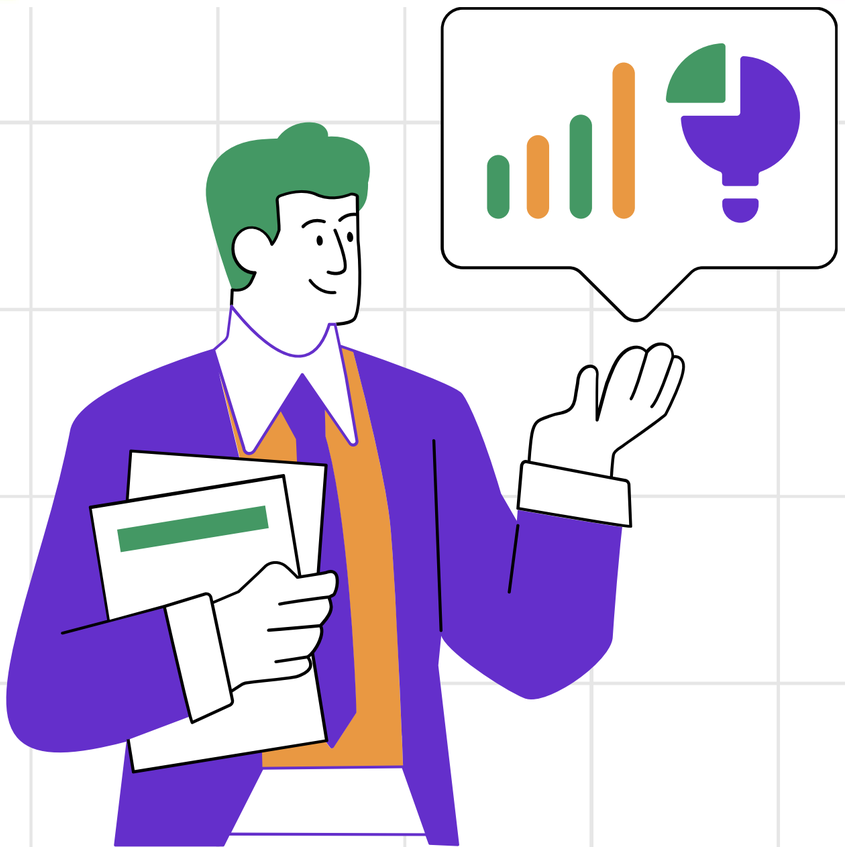
DATA MODEL


employees_new
DepartmentID
DOB
EmployeeID
FirstName
Gender
LastName
Collapse
attendance_new
Date
EmployeeID
Status
Collapse
salaries_new
Bonus
EmployeeID
PayDate
Salary
Collapse
promotions_new
EmployeeID
NewRoleID
OldRoleID
PromotionDate
Collapse
departments_new
DepartmentID
DepartmentName
Collapse
job_roles_new
DepartmentID
RoleID
RoleName
Collapse
1
*

QUESTION #1

LIST ALL EMPLOYEES WORKING IN THE 'IT' DEPARTMENT.

```sql
SELECT e.FirstName, e.LastName
FROM Employees e
JOIN Departments d ON e.DepartmentID = d.DepartmentID
WHERE d.DepartmentName = 'IT';
```

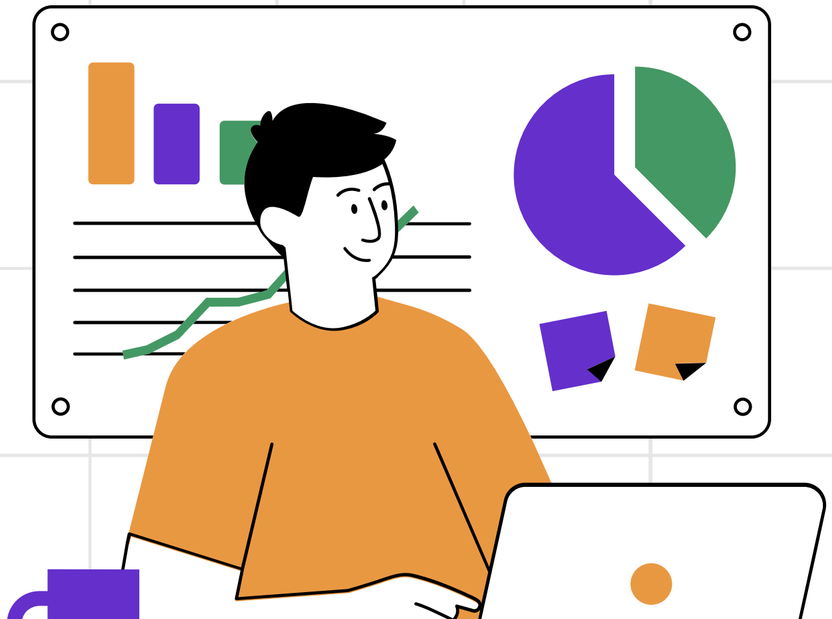


firstname character varying (50)	lastname character varying (50)
David	Wilson
Anna	Jones
John	Brown
John	Brown
Sara	Williams
Katie	Williams
Jane	Moore
Jane	Davis
David	Jones
Sara	Smith
Katie	Brown

QUESTION # 2

RETRIEVE THE NAMES AND SALARIES OF ALL EMPLOYEES EARNING MORE THAN $70,000.

```sql
SELECT e.FirstName, e.LastName, s.Salary
FROM Employees e
JOIN Salaries s ON e.EmployeeID = s.EmployeeID
WHERE s.Salary > 70000;
```

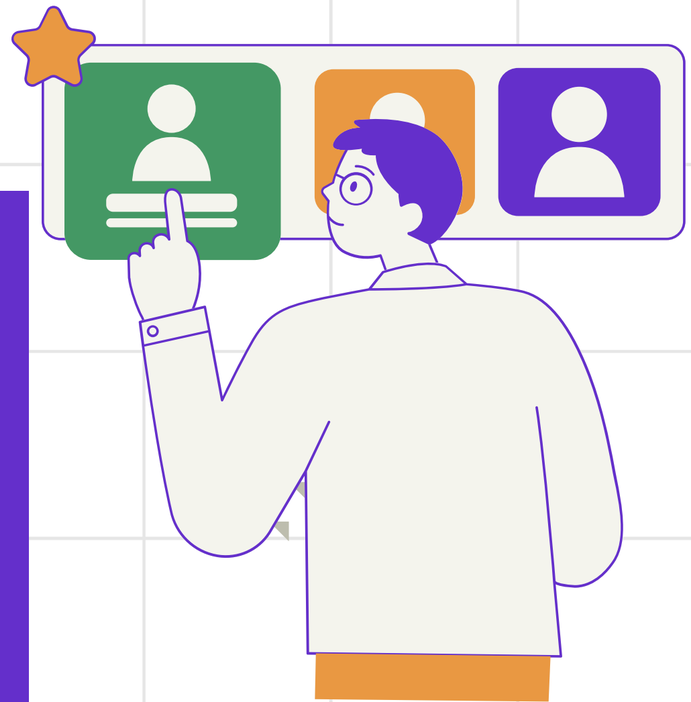


firstname character varying (50)	lastname character varying (50)	salary numeric (10,2)
Katie	Williams	98566.00
Chris	Brown	72188.00
Jane	Moore	107684.00
Anna	Johnson	99385.00
Chris	Wilson	118681.00
David	Wilson	116516.00
Alex	Davis	108257.00

QUESTION # 3

COUNT THE NUMBER OF EMPLOYEES IN EACH DEPARTMENT.

```
SELECT d.DepartmentName, COUNT(e.EmployeeID) AS EmployeeCount
FROM Employees e
JOIN Departments d ON e.DepartmentID = d.DepartmentID
GROUP BY d.DepartmentName;
```



departmentname character varying (50)	employeecount bigint
Marketing	21
Operations	17
Legal	19
Finance	23
R&D	22
Sales	27
Procurement	13
IT	22
HR	18
Customer Service	18

QUESTION # 4

FIND THE TOTAL NUMBER OF DAYS AN EMPLOYEE WITH ID 5 WAS ABSENT.

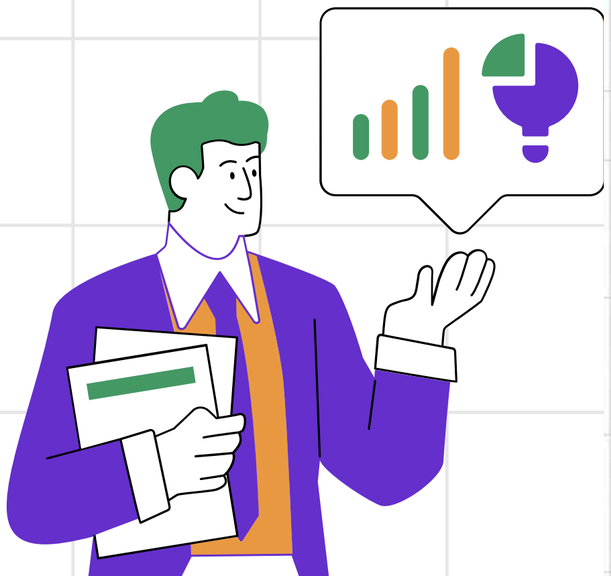
```sql
SELECT COUNT(*) AS AbsentDays
FROM Attendance
WHERE EmployeeID = 5 AND Status = 'Absent';
```

absentdays bigint
2

QUESTION # 5

LIST ALL EMPLOYEES WHO WERE PROMOTED IN THE YEAR 2023.

```
SELECT e.FirstName, e.LastName, p.PromotionDate, jr_old.RoleName
AS OldRole, jr_new.RoleName AS NewRole FROM Employees e
JOIN Promotions p ON e.EmployeeID = p.EmployeeID
JOIN JobRoles jr_old ON p.OldRoleID = jr_old.RoleID
JOIN JobRoles jr_new ON p.NewRoleID = jr_new.RoleID
WHERE EXTRACT(YEAR FROM p.PromotionDate) = 2023;
```

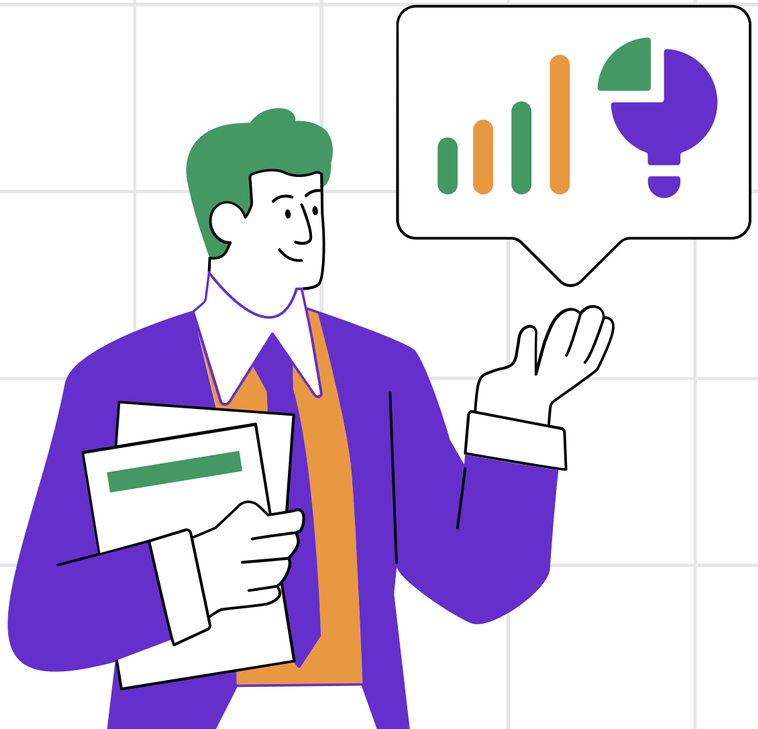


firstname character varying (50)	lastname character varying (50)	promotiondate date	oldrole character varying (50)	newrole character varying (50)
John	Johnson	2023-11-27	Technician	Consultant
John	Brown	2023-03-22	Technician	Consultant
David	Davis	2023-05-31	Manager	Supervisor
Sara	Davis	2023-10-31	Technician	Clerk
Katie	Brown	2023-01-24	Clerk	Manager
Jane	Smith	2023-09-02	Executive	Clerk
Anna	Brown	2023-09-30	Analyst	Assistant

QUESTION # 6

RETRIEVE THE AVERAGE SALARY FOR EACH DEPARTMENT.

```sql
SELECT d.DepartmentName, AVG(s.Salary) AS AvgSalary
FROM Employees e
JOIN Salaries s ON e.EmployeeID = s.EmployeeID
JOIN Departments d ON e.DepartmentID = d.DepartmentID
GROUP BY d.DepartmentName;
```



departmentname character varying (50)	avgsalary numeric
Marketing	74474.190476190476
Operations	73572.705882352941
Legal	73924.421052631579
Finance	77022.043478260870
R&D	85346.863636363636
Sales	77994.074074074074
Procurement	73052.384615384615
IT	68026.636363636364
HR	69013.944444444444
Customer Service	58871.222222222222

QUESTION # 7

FIND THE TOP 3 EMPLOYEES WITH THE HIGHEST BONUSES.

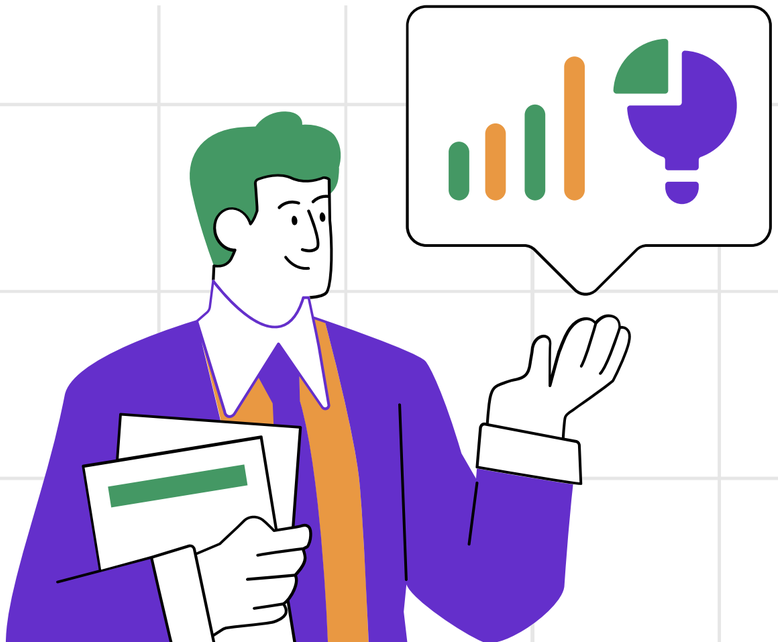
```sql
SELECT e.FirstName, e.LastName, s.Bonus
FROM Employees e
JOIN Salaries s ON e.EmployeeID = s.EmployeeID
ORDER BY s.Bonus DESC
LIMIT 3;
```

firstname character varying (50)	lastname character varying (50)	bonus numeric (10,2)
Alex	Williams	9960.00
Anna	Brown	9936.00
Jane	Moore	9800.00

QUESTION # 8

GET THE TOTAL ATTENDANCE COUNT FOR EACH EMPLOYEE.

```sql
SELECT e.FirstName, e.LastName,
COUNT(a.Status) AS AttendanceCount
FROM Employees e
JOIN Attendance a
ON e.EmployeeID = a.EmployeeID
GROUP BY e.FirstName, e.LastName;
```



firstname character varying (50)	lastname character varying (50)	attendancecount bigint
Sara	Davis	2
Sara	Miller	11
Chris	Smith	18
Sara	Brown	4
Alex	Taylor	5
Katie	Taylor	16
Katie	Brown	8
Chris	Wilson	8
Jane	Moore	22
Jane	Taylor	5
Jane	Johnson	10

QUESTION # 9

FIND THE EMPLOYEE WHO HAS THE LONGEST CONTINUOUS SERVICE WITHOUT BEING ABSENT (CONSIDER CONTINUOUS DAYS OF PRESENCE).

```sql
SELECT EmployeeID, MAX(ContinuousDays) AS MaxContinuousDays
FROM (
SELECT EmployeeID,Status,
SUM(CASE WHEN Status = 'Present' THEN 1 ELSE 0 END)
OVER (PARTITION BY EmployeeID ORDER BY Date) AS ContinuousDays
 FROM Attendance
  WHERE Status = 'Present'
) AS ContinuousPresent
GROUP BY EmployeeID
ORDER BY MaxContinuousDays DESC
LIMIT 1;
```

employeeid integer	maxcontinuousdays bigint
8	5

QUESTION # 10

IDENTIFY THE HIGHEST SALARY IN EACH DEPARTMENT AND LIST ALL EMPLOYEES WHO EARN THIS HIGHEST SALARY.

```sql
WITH MaxSalaryPerDept AS (
    SELECT d.DepartmentID, MAX(s.Salary) AS MaxSalary
    FROM Employees e
    JOIN Salaries s ON e.EmployeeID = s.EmployeeID
    JOIN Departments d ON e.DepartmentID = d.DepartmentID
    GROUP BY d.DepartmentID
)
SELECT e.FirstName, e.LastName, d.DepartmentName, s.Salary
FROM Employees e
JOIN Salaries s ON e.EmployeeID = s.EmployeeID
JOIN Departments d ON e.DepartmentID = d.DepartmentID
JOIN MaxSalaryPerDept msp ON d.DepartmentID = msp.DepartmentID AND s.Salary = msp.MaxSalary;
```

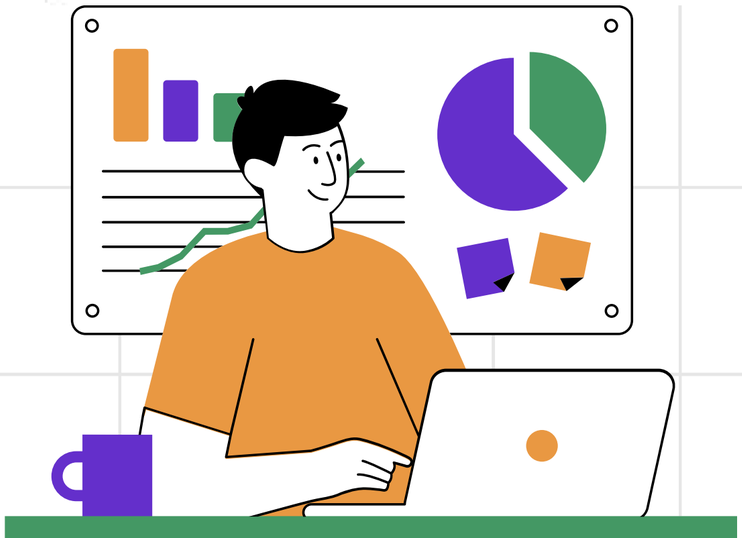
RESULT OF QUESTION #10

firstname character varying (50)	lastname character varying (50)	departmentname character varying (50)	salary numeric (10,2)
Jane	Moore	Customer Service	107684.00
Chris	Wilson	Procurement	118681.00
David	Wilson	IT	116516.00
David	Taylor	Finance	118143.00
Jane	Jones	Marketing	110751.00
Alex	Miller	Sales	119516.00
Emily	Wilson	Legal	116442.00
Michael	Moore	R&D	118963.00
Anna	Wilson	HR	113244.00
Anna	Wilson	Operations	115063.00

QUESTION #11

CALCULATE THE YEAR-ON-YEAR PROMOTION RATE FOR THE 'MANAGER' ROLE.

```sql
SELECT EXTRACT(YEAR FROM p.PromotionDate) AS Year,
COUNT(p.EmployeeID) AS Promotions
FROM Promotions p
JOIN JobRoles jr ON p.NewRoleID = jr.RoleID
WHERE jr.RoleName = 'Manager'
GROUP BY EXTRACT(YEAR FROM p.PromotionDate)
ORDER BY Year;
```



year numeric	promotions bigint
2022	5
2023	3
2024	6

THANK YOU!

@WALEEDILYAS