```sql
CREATE DATABASE company;

use company;

CREATE TABLE DEPT (

    DEPTNO INT PRIMARY KEY,

    DNAME VARCHAR(50),

    DLOC VARCHAR(50)

);


CREATE TABLE EMPLOYEE (

    EMPNO INT PRIMARY KEY,

    ENAME VARCHAR(50),

    MGR_NO INT,

    HIREDATE DATE,

    SAL DECIMAL(10,2),

    DEPTNO INT,

    FOREIGN KEY (DEPTNO) REFERENCES DEPT(DEPTNO)

);


CREATE TABLE PROJECT (

    PNO INT PRIMARY KEY,

    PNAME VARCHAR(50),

    PLOC VARCHAR(50)

);


CREATE TABLE INCENTIVES (

    EMPNO INT,

    INCENTIVE_DATE DATE,

    INCENTIVE_AMOUNT DECIMAL(10,2),
```

```sql
    FOREIGN KEY (EMPNO) REFERENCES EMPLOYEE(EMPNO)
);


CREATE TABLE ASSIGNED_TO (
    EMPNO INT,
    PNO INT,
    JOB_ROLE VARCHAR(50),
    PRIMARY KEY (EMPNO, PNO),
    FOREIGN KEY (EMPNO) REFERENCES EMPLOYEE(EMPNO),
    FOREIGN KEY (PNO) REFERENCES PROJECT(PNO)
);




INSERT INTO DEPT VALUES
(10, 'HR', 'Bengaluru'),
(20, 'IT', 'Hyderabad'),
(30, 'Finance', 'Mysuru'),
(40, 'Marketing', 'Bengaluru'),
(50, 'Research', 'Hyderabad');

INSERT INTO EMPLOYEE VALUES
(101, 'Arun', NULL, '2020-01-10', 50000, 10),
(102, 'Bhavna', 101, '2021-03-15', 60000, 20),
(103, 'Chitra', 101, '2019-07-20', 55000, 30),
(104, 'Deepak', 103, '2022-05-25', 45000, 40),
(105, 'Esha', 102, '2023-06-30', 48000, 50),
(106, 'Farhan', 101, '2024-02-10', 53000, 20);
```

```sql
INSERT INTO PROJECT VALUES
(1, 'AI Research', 'Hyderabad'),
(2, 'Data Analytics', 'Bengaluru'),
(3, 'Web Portal', 'Mysuru'),
(4, 'Cloud Infra', 'Hyderabad'),
(5, 'E-Commerce', 'Bengaluru');


INSERT INTO ASSIGNED_TO VALUES
(101, 2, 'Manager'),
(102, 1, 'Developer'),
(103, 3, 'Analyst'),
(104, 5, 'Tester'),
(105, 4, 'Support'),
(106, 1, 'Engineer');


INSERT INTO INCENTIVES VALUES
(101, '2024-04-01', 5000),
(102, '2024-05-10', 3000),
(104, '2024-08-20', 4000);


SELECT * FROM Employee;
SELECT * FROM DEPT;
SELECT * FROM PROJECT;
SELECT *
FROM INCENTIVES;
SELECT * FROM ASSIGNED_TO;
```

```sql
SELECT DISTINCT A.EMPNO
FROM ASSIGNED_TO A
JOIN PROJECT P ON A.PNO = P.PNO
WHERE P.PLOC IN ('Bengaluru', 'Hyderabad', 'Mysuru');
```

```sql
SELECT EMPNO
FROM EMPLOYEE
WHERE EMPNO NOT IN (SELECT EMPNO FROM INCENTIVES);
```

```sql
SELECT
    E.ENAME,
    E.EMPNO,
    D.DNAME,
    A.JOB_ROLE,
    D.DLOC AS DEPT_LOCATION,
    P.PLOC AS PROJECT_LOCATION
FROM EMPLOYEE E
JOIN DEPT D ON E.DEPTNO = D.DEPTNO
JOIN ASSIGNED_TO A ON E.EMPNO = A.EMPNO
JOIN PROJECT P ON A.PNO = P.PNO
WHERE D.DLOC = P.PLOC;
```

```sql
SELECT E1.ENAME AS MANAGER_NAME, COUNT(E2.EMPNO) AS EMPLOYEE_COUNT
FROM EMPLOYEE E1
```

```
JOIN EMPLOYEE E2 ON E1.EMPNO = E2.MGR_NO

GROUP BY E1.ENAME

HAVING COUNT(E2.EMPNO) = (

  SELECT MAX(EMP_COUNT)

  FROM (

    SELECT COUNT(E2.EMPNO) AS EMP_COUNT

    FROM EMPLOYEE E1

    JOIN EMPLOYEE E2 ON E1.EMPNO = E2.MGR_NO

    GROUP BY E1.EMPNO

  ) AS TEMP

);




SELECT

  M.ENAME AS MANAGER_NAME, M.SAL AS MANAGER_SALARY

FROM

  EMPLOYEE M

WHERE

  M.EMPNO IN (SELECT

      E.MGR_NO

    FROM

      EMPLOYEE E

    WHERE

      E.MGR_NO IS NOT NULL)

    AND M.SAL > (SELECT

      AVG(E2.SAL)

    FROM

      EMPLOYEE E2
```

```
    WHERE

        E2.MGR_NO = M.EMPNO)
```

```sql
SELECT DISTINCT E.ENAME AS SECOND_LEVEL_MANAGER, D.DNAME AS
DEPARTMENT

FROM EMPLOYEE E

JOIN EMPLOYEE M ON E.MGR_NO = M.EMPNO

JOIN DEPT D ON E.DEPTNO = D.DEPTNO

WHERE M.MGR_NO IS NULL;
```

```sql
SELECT E.*

FROM EMPLOYEE E

JOIN INCENTIVES I ON E.EMPNO = I.EMPNO

WHERE MONTH(I.INCENTIVE_DATE) = 1

  AND YEAR(I.INCENTIVE_DATE) = 2019

  AND I.INCENTIVE_AMOUNT = (

    SELECT DISTINCT INCENTIVE_AMOUNT

    FROM INCENTIVES

    WHERE MONTH(INCENTIVE_DATE) = 1

      AND YEAR(INCENTIVE_DATE) = 2019

    ORDER BY INCENTIVE_AMOUNT DESC

    LIMIT 1 OFFSET 1

  );
```
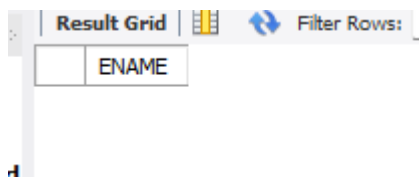
```sql
SELECT E.EMPNO, E.ENAME, E.DEPTNO, D.DNAME
FROM EMPLOYEE E
JOIN EMPLOYEE M ON E.MGR_NO = M.EMPNO
JOIN DEPT D ON E.DEPTNO = D.DEPTNO
WHERE E.DEPTNO = M.DEPTNO;
```

```sql
SELECT E.EMPNO, E.ENAME, D.DNAME. D.DLOC
from EMPLOYEE E, DEPT D
WHERE  E.DEPTNO = D.DEPTNO;
```

```sql
select E.ENAME
FROM EMPLOYEE E
WHERE E.EMPNO NOT IN (SELECT EMPNO
FROM ASSIGNED_TO);
```

Result Grid	Filter Rows:
ENAME	

```sql
SELECT D.DNAME, AVG(E.SAL) AS AVG_SAL,
MAX(E.SAL) AS MAX_SAL
FROM DEPT D, EMPLOYEE E
WHERE D.DEPTNO = E.DEPTNO
GROUP BY D.DNAME;
```

DNAME	AVG_SAL	MAX_SAL
HR	50000.000000	50000.00
IT	56500.000000	60000.00
Finance	55000.000000	55000.00
Marketing	45000.000000	45000.00
Research	48000.000000	48000.00

SELECT E.ENAME, SUM(I.INCENTIVE_AMOUNT) aS TOTAL_INCENTIVE

FROM EMPLOYEE E, INCENTIVES I

WHERE E.EMPNO = I.EMPNO

GROUP BY E.ENAME;

ENAME	TOTAL_INCENTIVE
Arun	5000.00
Bhavna	3000.00
Deepak	4000.00

SELECT E.ENAME, P.PNAME

FROM EMPLOYEE E, PROJECT P, ASSIGNED_TO A

WHERE E.EMPNO = A.EMPNO AND P.PNO = A.PNO AND P.PNAME = "AI RESEARCH";

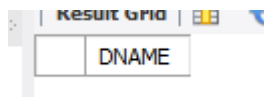| ENAME	PNAME
Bhavna	AI Research
Farhan	AI Research

SELECT D.DNAME

FROM EMPLOYEE E, DEPT D

WHERE D.DEPTNO = E.DEPTNO AND E.EMPNO IS NULL;

Result Grid
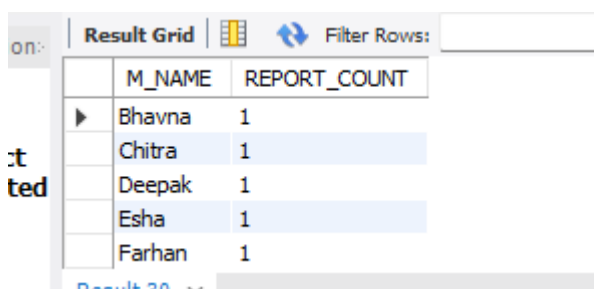
DNAME

SELECT M.ENAME AS M_NAME, COUNT(E.EMPNO) AS REPORT_COUNT

FROM EMPLOYEE E, EMPLOYEE M

WHERE E.EMPNO = M.MGR_NO

GROUP BY M.ENAME;

Result Grid   Filter Rows:

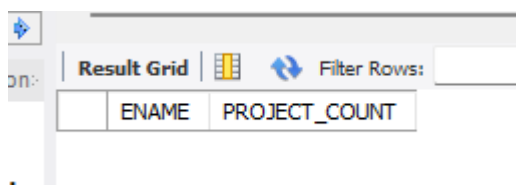| M_NAME	REPORT_COUNT
Bhavna	1
Chitra	1
Deepak	1
Esha	1
Farhan	1

SELECT E.ENAME, COUNT(A.PNO) AS PROJECT_COUNT

FROM EMPLOYEE E, ASSIGNED_TO A

WHERE E.EMPNO = A.EMPNO

GROUP BY E.ENAME

HAVING PROJECT_COUNT > 1;

Result Grid   Filter Rows:

ENAME	PROJECT_COUNT