DBMS LAB-06(23-01-2025)

Name- Bhavya Shrivastava **Roll No-** 23052071 **Section-** CSE-15

1. **Create and populate the following table 'EMP06'. Make Emp_no the primary key and F_name not null.**

Emp_no	F_name	L_name	Salary	Dept_no
101	Jai		90000	1
102	Viru		80000	1
103	Gabbar	Singh	70000	2
104	Basanti		60000	3
105	Ram	Lal	50000	3
106	Radha	Thakur	30000	3

```
SQL> CREATE TABLE EMP06 (
  2      Emp_no NUMBER PRIMARY KEY,
  3      F_name VARCHAR2(50) NOT NULL,
  4      L_name VARCHAR2(50),
  5      Salary NUMBER,
  6      Dept_no NUMBER
  7  );
CREATE TABLE EMP06 (
             *
ERROR at line 1:
ORA-00955: name is already used by an existing object

SQL>
SQL> INSERT INTO EMP06 (Emp_no, F_name, L_name, Salary, Dept_no) VALUES (101, 'Jai', NULL, 90000, 1);

1 row created.

SQL> INSERT INTO EMP06 (Emp_no, F_name, L_name, Salary, Dept_no) VALUES (102, 'Viru', NULL, 80000, 1);

1 row created.

SQL> INSERT INTO EMP06 (Emp_no, F_name, L_name, Salary, Dept_no) VALUES (103, 'Gabbar', 'Singh', 70000, 2);

1 row created.

SQL> INSERT INTO EMP06 (Emp_no, F_name, L_name, Salary, Dept_no) VALUES (104, 'Basanti', NULL, 60000, 3);

1 row created.

SQL> INSERT INTO EMP06 (Emp_no, F_name, L_name, Salary, Dept_no) VALUES (105, 'Ram', 'Lal', 50000, 3);

1 row created.

SQL> INSERT INTO EMP06 (Emp_no, F_name, L_name, Salary, Dept_no) VALUES (106, 'Radha', 'Thakur', 30000, 3);

1 row created.
```

2. **Create and populate the following table 'PROJECT'. Make P_no the primary key and put a default value constraint on P_Loc with value = 'Mumbai'.**

P_no	P_name	P_Loc
1	XYZ	Pune
2	ABC	Pune
3	IJK	

```
SQL> CREATE TABLE PROJECT (
  2  P_no NUMBER PRIMARY KEY,
  3  P_name VARCHAR2(50),
  4  P_Loc VARCHAR2(50) DEFAULT 'Mumbai'
  5  );

Table created.

SQL> INSERT INTO PROJECT(P_no, P_name, P_Loc) VALUES(1, XYZ, Pune);
INSERT INTO PROJECT(P_no, P_name, P_Loc) VALUES(1, XYZ, Pune)
                                                    *
ERROR at line 1:
ORA-00984: column not allowed here


SQL> INSERT INTO PROJECT(P_no, P_name, P_Loc) VALUES(1, 'XYZ', 'Pune');

1 row created.

SQL> INSERT INTO PROJECT(P_no, P_name, P_Loc) VALUES(2, 'ABC', 'Pune');

1 row created.

SQL> INSERT INTO PROJECT(P_no, P_name, P_Loc) VALUES(3, 'IJK');
INSERT INTO PROJECT(P_no, P_name, P_Loc) VALUES(3, 'IJK')
                                                    *
ERROR at line 1:
ORA-00947: not enough values


SQL> INSERT INTO PROJECT(P_no, P_name, P_Loc) VALUES(3, 'IJK', 'Mumbai');
```

3. **Create and populate the following EMP_PROJ table. Make (Emp_no, P_no) the primary key.**

Emp_no	P_no
101	1
102	1
103	2
104	2
101	2
105	2

```
SQL> CREATE TABLE EMP_PROJ (
  2      Emp_no INT,
  3      P_no INT,
  4      PRIMARY KEY (Emp_no, P_no)
  5  );

Table created.

SQL> INSERT INTO EMP_PROJ (Emp_no, P_no) VALUES (101, 1);

1 row created.

SQL> INSERT INTO EMP_PROJ (Emp_no, P_no) VALUES (102, 1);

1 row created.

SQL> INSERT INTO EMP_PROJ (Emp_no, P_no) VALUES (103, 2);

1 row created.

SQL> INSERT INTO EMP_PROJ (Emp_no, P_no) VALUES (104, 2);

1 row created.

SQL> INSERT INTO EMP_PROJ (Emp_no, P_no) VALUES (101, 2);

1 row created.

SQL> INSERT INTO EMP_PROJ (Emp_no, P_no) VALUES (105, 2);

1 row created.
```

4. **Display the employee's first names with the project name's they are working on.**

```
SQL> SELECT E.F_name, P.P_name
  2  FROM EMP06 E
  3  JOIN EMP_PROJ EP ON E.Emp_no = EP.Emp_no
  4  JOIN PROJECT P ON EP.P_no = P.P_no;

F_NAME      P_NAME
---------- ----------
Jai         XYZ
Viru        XYZ
Gabbar      ABC
Basanti     ABC
Jai         ABC
Ram         ABC

6 rows selected.
```

5. **In which city Gabbar Singh works.**

```
SQL> SELECT P.P_Loc
  2  FROM EMP06 E
  3  JOIN EMP_PROJ EP ON E.Emp_no = EP.Emp_no
  4  JOIN PROJECT P ON EP.P_no = P.P_no
  5  WHERE E.F_name = 'Gabbar' AND E.L_name = 'Singh';

P_LOC
--------------------------------------------------
Pune
```

6. **Find the employee names who are not yet assigned to any project (using minus).**

```
SQL> SELECT F_name, L_name
  2  FROM EMP06
  3  MINUS
  4  SELECT E.F_name, E.L_name
  5  FROM EMP06 E
  6  JOIN EMP_PROJ EP ON E.Emp_no = EP.Emp_no;

F_NAME      L_NAME
---------- --------------------------------------------------
Radha       Thakur
```

7. **Find the employee names who are not yet assigned to any project (using outer join).**

```
SQL> SELECT E.F_name, E.L_name
  2  FROM EMP06 E
  3  LEFT JOIN EMP_PROJ EP ON E.Emp_no = EP.Emp_no
  4  WHERE EP.P_no IS NULL;

F_NAME      L_NAME
----------  -----------------------------------------------
Radha       Thakur
```

8. **Find the project names where no employees are working (using outer join).**

```
SQL> SELECT P.P_name
  2  FROM PROJECT P
  3  LEFT JOIN EMP_PROJ EP ON P.P_no = EP.P_no
  4  WHERE EP.Emp_no IS NULL;

P_NAME
----------
IJK
```

9. **Find all the employee names who are working in project number 1 and project 'ABC' (using union).**

```
SQL> SELECT E.F_name, E.L_name
  2  FROM EMP06 E
  3  JOIN EMP_PROJ EP ON E.Emp_no = EP.Emp_no
  4  WHERE EP.P_no = 1
  5  UNION
  6  SELECT E.F_name, E.L_name
  7  FROM EMP06 E
  8  JOIN EMP_PROJ EP ON E.Emp_no = EP.Emp_no
  9  JOIN PROJECT P ON EP.P_no = P.P_no
 10  WHERE P.P_name = 'ABC';

F_NAME      L_NAME
----------  -----------------------------------------------
Basanti
Gabbar      Singh
Jai
Ram         Lal
Viru
```

10. **Find all the employee names who are working in both project number 1 and project number 2 (using intersect).**

```
SQL> SELECT E.F_name, E.L_name
  2  FROM EMP06 E
  3  JOIN EMP_PROJ EP ON E.Emp_no = EP.Emp_no
  4  WHERE EP.P_no = 1
  5  INTERSECT
  6  SELECT E.F_name, E.L_name
  7  FROM EMP06 E
  8  JOIN EMP_PROJ EP ON E.Emp_no = EP.Emp_no
  9  WHERE EP.P_no = 2;

F_NAME      L_NAME
----------  ----------------------------------
Jai
```

11. **Find the number of employees working in each project.**

```
SQL> SELECT P.P_no, COUNT(E.Emp_no) AS Employee_Count
  2  FROM PROJECT P
  3  LEFT JOIN EMP_PROJ EP ON P.P_no = EP.P_no
  4  LEFT JOIN EMP06 E ON EP.Emp_no = E.Emp_no
  5  GROUP BY P.P_no;

     P_NO EMPLOYEE_COUNT
---------- --------------
        1              2
        2              4
        3              0
```

12. **Find the average salary of each department.**

```
SQL> SELECT Dept_no, AVG(Salary) AS Avg_Salary
  2  FROM EMP06
  3  GROUP BY Dept_no;

   DEPT_NO AVG_SALARY
---------- ----------
         1      85000
         2      70000
         3 46666.6667
```

13. **Find the department number with the number of employees working in each department where the average salary is greater than 60000 and number of employees greater than 1.**

```
SQL> SELECT Dept_no, COUNT(Emp_no) AS Employee_Count, AVG(Salary) AS Avg_Sal
ary
  2  FROM EMP06
  3  GROUP BY Dept_no
  4  HAVING AVG(Salary) > 60000 AND COUNT(Emp_no) > 1;

  DEPT_NO EMPLOYEE_COUNT AVG_SALARY
---------- -------------- ----------
        1              2      85000
```

14. **Find all the employees who earn more than Basanti.**

```
SQL> SELECT F_name, L_name
  2  FROM EMP06
  3  WHERE Salary > (SELECT Salary FROM EMP06 WHERE F_name =
'Basanti');

F_NAME       L_NAME
----------   ------------------------------------------------
Jai
Viru
Gabbar       Singh
```

15. **Find all the employees who earn more than the average salary of all employees.**

```
SQL> SELECT F_name, L_name
  2  FROM EMP06
  3  WHERE Salary = (SELECT MAX(Salary) FROM EMP06);

F_NAME       L_NAME
----------   ------------------------------------------------
Jai
```

16. **Find the employee who earns the highest salary.**

```
SQL> SELECT F_name, L_name
  2  FROM EMP06
  3  WHERE Salary = (SELECT MAX(Salary) FROM EMP06);

F_NAME       L_NAME
----------   ------------------------------------------------
Jai
```

17. Find the employee who earns the highest salary in dept_no 3.

```
SQL> SELECT F_name, L_name
  2  FROM EMP06
  3  WHERE Dept_no = 3 AND Salary = (SELECT MAX(Salary) FROM EMP0
6 WHERE Dept_no = 3);

F_NAME      L_NAME
---------- -----------------------------------------------
Basanti
```

18. Find the employee earning the second highest salary.

```
SQL> SELECT F_name, L_name
  2  FROM EMP06
  3  WHERE Salary = (SELECT MAX(Salary) FROM EMP06 WHERE Salary <
 (SELECT MAX(Salary) FROM EMP06));

F_NAME      L_NAME
---------- -----------------------------------------------
Viru
```

19. Find the dept_no having the highest average salary.

```
SQL> SELECT Dept_no
  2  FROM (SELECT Dept_no, AVG(Salary) AS Avg_Salary
  3           FROM EMP06
  4           GROUP BY Dept_no
  5           ORDER BY Avg_Salary DESC)
  6  WHERE ROWNUM = 1;

   DEPT_NO
----------
         1
```

20. Find the employee with the third highest salary among all the employees.

```
SQL> SELECT F_name, L_name
  2  FROM (SELECT F_name, L_name, Salary, DENSE_RANK() OVER (ORDE
R BY Salary DESC) AS rank
  3           FROM EMP06)
  4  WHERE rank = 3;

F_NAME      L_NAME
---------- -----------------------------------------------
Gabbar      Singh

SQL>
```