DBMS LAB REPORT

Lab Number : 06
Date : 17 March, 2022
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Branch : Computer Science and Engineering
Section : CSE -10

Part B (New Table Creation) :

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(EMP_NO NUMBER(3) CONSTRAINT EMP_06_EMP_NO_PK PRIMARY KEY, F_NAME VARCHAR2(25) CONSTRAINT EMP_06_F_NAME_NN NOT NULL, L_NAME VARCHAR2(20), SALARY NUMB
ER(6), DEPT_NO NUMBER(1));

Table created.

SQL> DESC EMP06;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMP_NO                                    NOT NULL NUMBER(3)
 F_NAME                                    NOT NULL VARCHAR2(25)
 L_NAME                                             VARCHAR2(20)
 SALARY                                             NUMBER(6)
 DEPT_NO                                            NUMBER(1)

SQL> INSERT INTO EMP06 VALUES(101, 'Jai', '', 90000, 1);

1 row created.

SQL> INSERT INTO EMP06 VALUES(102, 'Viru', '', 80000, 1);

1 row created.

SQL> INSERT INTO EMP06 VALUES(103, 'Gabbar', 'Singh', 70000, 2);

1 row created.

SQL> INSERT INTO EMP06 VALUES(104, 'Basanti', '', 60000, 3);

1 row created.

SQL> INSERT INTO EMP06 VALUES(105, 'Ram', 'Lal', 50000, 3);

1 row created.

SQL> INSERT INTO EMP06 VALUES(106, 'Radha', 'Thakur', 30000, 3);

1 row created.
```

```
SQL> SELECT * FROM EMP06;

    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

6 rows selected.
```

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(P_no NUMBER(1) CONSTRAINT PROJECT_P_NO_PK PRIMARY KEY, P_name VARCHAR2(15), P_Loc VARCHAR2(20) DEFAULT 'Mumbai');

Table created.

SQL> INSERT INTO PROJECT VALUES(1, 'XYZ', 'PUNE');

1 row created.

SQL> INSERT INTO PROJECT VALUES(2, 'ABC', 'PUNE');

1 row created.

SQL> INSERT INTO PROJECT VALUES(3, 'IJK', '');

1 row created.

SQL> SELECT * FROM PROJECT;

      P_NO P_NAME          P_LOC
---------- --------------- --------------------
         1 XYZ             PUNE
         2 ABC             PUNE
         3 IJK
```

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( Emp_no NUMBER(3), P_no NUMBER(1), CONSTRAINT EMP_PROJ_PK PRIMARY KEY(Emp_no, P_no) );

Table created.

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

1 row created.

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

1 row created.

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

1 row created.

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

1 row created.

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

1 row created.

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

1 row created.

SQL> SELECT * FROM EMP_PROJ;

    EMP_NO       P_NO
---------- ----------
       101          1
       102          1
       103          2
       104          2
       101          2
       105          2

6 rows selected.
```

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

```
SQL> select emp06.f_name,project.p_name from emp06 inner join project on emp06.dept_no=project.p_no;

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

6 rows selected.
```

5. In which city Gabbar Singh works.

```
SQL> select emp06.f_name,project.p_loc from emp06 inner join project on emp06.dept_no=project.p_no where emp06.f_name='Gabbar';

F_NAME                    P_LOC
------------------------- --------------------
Gabbar                    PUNE

SQL>
```

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

```
SQL> select F_name, L_name from EMP06 where Emp_no in (select Emp_no from EMP06 minus select Emp_no from EMP_PROJ);

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

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

```
SQL> select f_name,l_name from emp06 left outer join emp_proj on emp_proj.emp_no=emp06.emp_no where 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_name from project left outer join emp_proj on emp_proj.p_no=project.p_no where emp_proj.p_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 f_name, l_name from EMP06 where Emp_no in (select Emp_no from EMP_PROJ where P_no=1) union select f_name, l_name from EMP06 where Emp_no in (select Emp_no from
EMP_PROJ where P_no=(select P_no from PROJECT where 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 f_name,l_name from emp06 where emp_no=(select emp_proj.emp_no from emp_proj,project where emp_proj.p_no=project.p_no and project.p_no=1 intersect select emp_pro
j.emp_no from emp_proj,project where emp_proj.p_no=project.p_no and project.p_no=2);

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

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

```
SQL>  SELECT P_NO,COUNT(*) FROM EMP_PROJ GROUP BY P_NO;

      P_NO   COUNT(*)
---------- ----------
         1          2
         2          4
```

12. Find the average salary of each department.

```
SQL> select dept_no,avg(salary) from emp06 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 from emp06 having avg(salary)>60000 and count(emp_no)>1 group by dept_no;

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

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

```
SQL> select emp_no from emp06 where salary>(select salary from emp06 where f_name='Basanti');

    EMP_NO
----------
       101
       102
       103
```

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

```
SQL> select * from EMP06 where Salary > (select avg(Salary) from EMP06);

    EMP_NO F_NAME                    L_NAME                    SALARY    DEPT_NO
---------- ------------------------- ------------------- ---------- ----------
       101 Jai                                                 90000          1
       102 Viru                                                80000          1
       103 Gabbar                    Singh                     70000          2
```

16. Find the employee who earns the highest salary.

```
SQL> select emp_no from emp06 where salary in (select max(salary) from emp06);

    EMP_NO
----------
       101
```

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

```
SQL> select emp_no from emp06 where salary in (select max(salary) from emp06 where dept_no=3);

    EMP_NO
----------
       104
```

18. Find the employee earning the second highest salary.

```
SQL> select max(Salary)  from EMP06 where Salary < (select max(Salary) from EMP06);

MAX(SALARY)
-----------
      80000
```

19. Find the dept_no having the highest average salary.

```
SQL> select dept_no,avg(salary) from emp06 group by dept_no having avg(salary)=(select max(avg(salary)) from emp06 group by dept_no);

   DEPT_NO AVG(SALARY)
---------- -----------
         1       85000
```

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

```
SQL> select * from emp06 where salary=(select min(salary) from (select distinct salary from emp06 order by salary desc) where rownum<4);

    EMP_NO F_NAME                    L_NAME                    SALARY    DEPT_NO
---------- ------------------------- ------------------- ---------- ----------
       103 Gabbar                    Singh                    70000          2
```