DBMS LAB REPORT

Lab Number : 04
Date : 03 February, 2022
Name of the student : Ashish Kumar Mishra
Roll Number : 20051685
Branch : Computer Science and Engineering
Section : CSE -10

Student Table :

```
SQL> select * from Student;

      ROLL NAME                 CITY                      AGE       CGPA
---------- -------------------- -------------------- ---------- ----------
       101 Ram                  Bhubaneswar                  19          9
       102 Hari                 Bhubaneswar                               6.7
       103 Uday                 Jharkhand                    20       8.97
       104 Vikas                Uttar Pradesh                19        8.5
       105 Sweta                Ranchi                       19        9.2
       106 Yogesh               Rajasthan                    18        7.9
       210 Smriti               Delhi                        20       8.99
       211 Sudam                Cuttack                      21        8.6
       212 Vikas                Kolkota                      23       5.98
       165 Manish                                            19       9.15

10 rows selected.
```

Employee Table :

```
SQL> select * from employee;

     EMPNO ENAME                JOB                       MGR HIREDATE         SAL       COMM     DEPTNO
---------- -------------------- ------------------ ---------- --------- ---------- ---------- ----------
      7369 SMITH                CLERK                    7902 17-DEC-80        800                    20
      7499 ALLEN                SALESMAN                 7698 20-FEB-81       1600        300         30
      7521 WARD                 SALESMAN                 7698 22-FEB-81       1250        500         30
      7566 JONES                MANAGER                  7839 02-APR-81       2975                    20
      7654 MARTIN               SALESMAN                 7698 28-SEP-81       1250       1400         30
      7698 BLAKE                MANAGER                  7839 01-MAY-81       2850                    30
      7782 CLARK                MANAGER                  7839 09-JUN-81       2450                    10
      7788 SCOTT                ANALYST                  7566 09-NOV-81       3000                    20
      7839 KING                 PRESIDENT                     17-NOV-81       5000                    10
      7844 TURNER               SALESMAN                 7698 08-SEP-81       1500          0         30
      7876 ADAMS                CLERK                    7788 23-SEP-81       1100                    20

     EMPNO ENAME                JOB                       MGR HIREDATE         SAL       COMM     DEPTNO
---------- -------------------- ------------------ ---------- --------- ---------- ---------- ----------
      7900 JAMES                CLERK                    7698 03-DEC-81        950                    30
      7902 FORD                 ANALYST                  7566 03-DEC-81       3000                    20
      7934 MILLER               CLERK                    7782 23-JAN-82       1300                    10
```

1. Display the employee name and designation by decreasing order of their salary.

```
SQL> select ename, job from employee order by sal desc;

ENAME                JOB
-------------------- -------------------------
KING                 PRESIDENT
FORD                 ANALYST
SCOTT                ANALYST
JONES                MANAGER
BLAKE                MANAGER
CLARK                MANAGER
ALLEN                SALESMAN
TURNER               SALESMAN
MILLER               CLERK
WARD                 SALESMAN
MARTIN               SALESMAN

ENAME                JOB
-------------------- -------------------------
ADAMS                CLERK
JAMES                CLERK
SMITH                CLERK

14 rows selected.
```

2. Change the name of the employee table to staff.

```
SQL> alter table employee rename to staff;

Table altered.

SQL> set linesize 200;
SQL> select * from staff;

     EMPNO ENAME                JOB                        MGR HIREDATE         SAL       COMM     DEPTNO
---------- -------------------- ------------------------- ---------- --------- ---------- ---------- ----------
      7369 SMITH                CLERK                     7902 17-DEC-80        800                    20
      7499 ALLEN                SALESMAN                  7698 20-FEB-81       1600        300         30
      7521 WARD                 SALESMAN                  7698 22-FEB-81       1250        500         30
      7566 JONES                MANAGER                   7839 02-APR-81       2975                    20
      7654 MARTIN               SALESMAN                  7698 28-SEP-81       1250       1400         30
      7698 BLAKE                MANAGER                   7839 01-MAY-81       2850                    30
      7782 CLARK                MANAGER                   7839 09-JUN-81       2450                    10
      7788 SCOTT                ANALYST                   7566 09-NOV-81       3000                    20
      7839 KING                 PRESIDENT                      17-NOV-81       5000                    10
      7844 TURNER               SALESMAN                  7698 08-SEP-81       1500          0         30
      7876 ADAMS                CLERK                     7788 23-SEP-81       1100                    20

     EMPNO ENAME                JOB                        MGR HIREDATE         SAL       COMM     DEPTNO
---------- -------------------- ------------------------- ---------- --------- ---------- ---------- ----------
      7900 JAMES                CLERK                     7698 03-DEC-81        950                    30
      7902 FORD                 ANALYST                   7566 03-DEC-81       3000                    20
      7934 MILLER               CLERK                     7782 23-JAN-82       1300                    10

14 rows selected.
```

3. Create a table employee_details that has employee_name, employee_id, designation and salary from the staff table.

```
SQL> create table employee_details(employee_name,employee_id,designation,salary) as select ename,empno,job,sal from staff;

Table created.

SQL> select * from employee_details;

EMPLOYEE_NAME        EMPLOYEE_ID DESIGNATION                  SALARY
-------------------- ----------- ------------------------- ----------
SMITH                       7369 CLERK                            800
ALLEN                       7499 SALESMAN                        1600
WARD                        7521 SALESMAN                        1250
JONES                       7566 MANAGER                         2975
MARTIN                      7654 SALESMAN                        1250
BLAKE                       7698 MANAGER                         2850
CLARK                       7782 MANAGER                         2450
SCOTT                       7788 ANALYST                         3000
KING                        7839 PRESIDENT                       5000
TURNER                      7844 SALESMAN                        1500
ADAMS                       7876 CLERK                           1100

EMPLOYEE_NAME        EMPLOYEE_ID DESIGNATION                  SALARY
-------------------- ----------- ------------------------- ----------
JAMES                       7900 CLERK                            950
FORD                        7902 ANALYST                         3000
MILLER                      7934 CLERK                           1300

14 rows selected.
```

4.Add a column 'last_name' in the student table of size 15.

```
SQL> alter table student add last_name char(15);

Table altered.

SQL> desc student;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ROLL                                               NUMBER(10)
 NAME                                               VARCHAR2(20)
 CITY                                               VARCHAR2(20)
 AGE                                                NUMBER(10)
 CGPA                                               NUMBER(4,2)
 LAST_NAME                                          CHAR(15)
```

5. Create a table student_details that has roll_number, name, age+2 as student_age, cgpa+0.5 as student_gpa from the student table.

```
SQL> create table student_details(roll_number, name, student_age, student_gpa) as select ROLL, NAME, AGE+2, CGPA+0.5 FROM STUDENT;

Table created.

SQL> select * from student_details;

ROLL_NUMBER NAME                STUDENT_AGE STUDENT_GPA
----------- ------------------- ----------- -----------
        101 Ram                          21         9.5
        102 Hari                                    7.2
        103 Uday                         22        9.47
        104 Vikas                        21           9
        105 Sweta                        21         9.7
        106 Yogesh                       20         8.4
        210 Smriti                       22        9.49
        211 Sudam                        23         9.1
        212 Vikas                        25        6.48
        165 Manish                       21        9.65

10 rows selected.
```

6. Create a table Name_stud that has columns: full name(concatenation of name and last_name), age from the student table.

```
SQL> create table name_stud(full_name, age) as select NAME||' '||LAST_NAME, AGE from student;

Table created.

SQL> select * from name_stud;

FULL_NAME                                    AGE
------------------------------------ ----------
Ram                                          19
Hari
Uday                                         20
Vikas                                        19
Sweta                                        19
Yogesh                                       18
Smriti                                       20
Sudam                                        21
Vikas                                        23
Manish                                       19

10 rows selected.
```

7. Change the size of the last_name column of student table to 20.

```
SQL> alter table student modify last_name char (20);

Table altered.

SQL> desc student;
 Name                                                                                                  Null?    Type
 ----------------------------------------------------------------------------------------------------- -------- ------------------------------------------------
----------------------------
 ROLL                                                                                                           NUMBER(10)
 NAME                                                                                                           VARCHAR2(20)
 CITY                                                                                                           VARCHAR2(20)
 AGE                                                                                                            NUMBER(10)
 CGPA                                                                                                           NUMBER(4,2)
 LAST_NAME                                                                                                      CHAR(20)
```

8. Update the commission column with 100 for those employees who are not getting any commission.

```
SQL> update staff set comm = 100 where comm is NULL;

10 rows updated.

SQL> select * from staff;

     EMPNO ENAME                JOB                        MGR HIREDATE         SAL       COMM     DEPTNO
---------- -------------------- ------------------------ ---------- --------- ---------- ---------- ----------
      7369 SMITH                CLERK                     7902 17-DEC-80        800        100         20
      7499 ALLEN                SALESMAN                  7698 20-FEB-81       1600        300         30
      7521 WARD                 SALESMAN                  7698 22-FEB-81       1250        500         30
      7566 JONES                MANAGER                   7839 02-APR-81       2975        100         20
      7654 MARTIN               SALESMAN                  7698 28-SEP-81       1250       1400         30
      7698 BLAKE                MANAGER                   7839 01-MAY-81       2850        100         30
      7782 CLARK                MANAGER                   7839 09-JUN-81       2450        100         10
      7788 SCOTT                ANALYST                   7566 09-NOV-81       3000        100         20
      7839 KING                 PRESIDENT                      17-NOV-81       5000        100         10
      7844 TURNER               SALESMAN                  7698 08-SEP-81       1500          0         30
      7876 ADAMS                CLERK                     7788 23-SEP-81       1100        100         20

     EMPNO ENAME                JOB                        MGR HIREDATE         SAL       COMM     DEPTNO
---------- -------------------- ------------------------ ---------- --------- ---------- ---------- ----------
      7900 JAMES                CLERK                     7698 03-DEC-81        950        100         30
      7902 FORD                 ANALYST                   7566 03-DEC-81       3000        100         20
      7934 MILLER               CLERK                     7782 23-JAN-82       1300        100         10

14 rows selected.
```

9. Change the city of Manish as Bhubaneswar in student table.

```
SQL> update student set city ='Bhubaneswar' where name='Manish';

1 row updated.

SQL> select * from student;

      ROLL NAME                 CITY                      AGE       CGPA LAST_NAME
---------- -------------------- -------------------- ---------- ---------- --------------------
       101 Ram                  Bhubaneswar                19          9
       102 Hari                 Bhubaneswar                           6.7
       103 Uday                 Jharkhand                  20       8.97
       104 Vikas                Uttar Pradesh              19        8.5
       105 Sweta                Ranchi                     19        9.2
       106 Yogesh               Rajasthan                  18        7.9
       210 Smriti               Delhi                      20       8.99
       211 Sudam                Cuttack                    21        8.6
       212 Vikas                Kolkota                    23       5.98
       165 Manish               Bhubaneswar                19       9.15

10 rows selected.
```

10. Change the cgpa of roll 101, 105 and 165 to 9.10 in the sudent table.

a) use any operator

```
SQL> update student set cgpa=9.10 where roll=ANY(101,105,165);

3 rows updated.

SQL> select * from student;

      ROLL NAME                 CITY                      AGE       CGPA LAST_NAME
---------- -------------------- -------------------- ---------- ---------- --------------------
       101 Ram                  Bhubaneswar                19        9.1
       102 Hari                 Bhubaneswar                           6.7
       103 Uday                 Jharkhand                  20       8.97
       104 Vikas                Uttar Pradesh              19        8.5
       105 Sweta                Ranchi                     19        9.1
       106 Yogesh               Rajasthan                  18        7.9
       210 Smriti               Delhi                      20       8.99
       211 Sudam                Cuttack                    21        8.6
       212 Vikas                Kolkota                    23       5.98
       165 Manish               Bhubaneswar                19        9.1

10 rows selected.
```

b) use or operator

```
SQL> update student set cgpa=9.10 where roll=101 OR roll=105 OR roll=165;

3 rows updated.

SQL> select * from student;

      ROLL NAME                CITY                      AGE       CGPA LAST_NAME
---------- -------------------- -------------------- ---------- ---------- --------------------
       101 Ram                  Bhubaneswar                19        9.1
       102 Hari                 Bhubaneswar                           6.7
       103 Uday                 Jharkhand                  20       8.97
       104 Vikas                Uttar Pradesh              19        8.5
       105 Sweta                Ranchi                     19        9.1
       106 Yogesh               Rajasthan                  18        7.9
       210 Smriti               Delhi                      20       8.99
       211 Sudam                Cuttack                    21        8.6
       212 Vikas                Kolkota                    23       5.98
       165 Manish               Bhubaneswar                19        9.1

10 rows selected.
```

11. a) Insert a row in the student table with values(103, Uday, Jharkhand, 20, 8.97).

```
SQL> insert into student(roll,name,city,age,cgpa) values (103, 'UDAY', 'Jharkhand',20,8.97);

1 row created.

SQL> select * from student;

      ROLL NAME                CITY                      AGE       CGPA LAST_NAME
---------- -------------------- -------------------- ---------- ---------- --------------------
       101 Ram                  Bhubaneswar                19        9.1
       102 Hari                 Bhubaneswar                           6.7
       103 Uday                 Jharkhand                  20       8.97
       104 Vikas                Uttar Pradesh              19        8.5
       105 Sweta                Ranchi                     19        9.1
       106 Yogesh               Rajasthan                  18        7.9
       210 Smriti               Delhi                      20       8.99
       211 Sudam                Cuttack                    21        8.6
       212 Vikas                Kolkota                    23       5.98
       165 Manish               Bhubaneswar                19        9.1
       103 UDAY                 Jharkhand                  20       8.97

11 rows selected.
```

b) Delete the student details of 103 which was present earlier in the student table.

```
SQL> select rowid, ROLL from student;

ROWID                  ROLL
------------------ ----------
AAAIexAABAAALDRAAA        101
AAAIexAABAAALDRAAB        102
AAAIexAABAAALDRAAC        103
AAAIexAABAAALDRAAD        104
AAAIexAABAAALDRAAE        105
AAAIexAABAAALDRAAF        106
AAAIexAABAAALDRAAG        210
AAAIexAABAAALDRAAH        211
AAAIexAABAAALDRAAI        212
AAAIexAABAAALDRAAJ        165
AAAIexAABAAALDRAAK        103

11 rows selected.

SQL> delete from student where rowid='AAAIexAABAAALDRAAC';

1 row deleted.

SQL> select * from student;

      ROLL NAME                 CITY                      AGE       CGPA LAST_NAME
---------- -------------------- -------------------- ---------- ---------- --------------------
       101 Ram                  Bhubaneswar                19        9.1
       102 Hari                 Bhubaneswar                           6.7
       104 Vikas                Uttar Pradesh              19        8.5
       105 Sweta                Ranchi                     19        9.1
       106 Yogesh               Rajasthan                  18        7.9
       210 Smriti               Delhi                      20       8.99
       211 Sudam                Cuttack                    21        8.6
       212 Vikas                Kolkota                    23       5.98
       165 Manish               Bhubaneswar                19        9.1
       103 UDAY                 Jharkhand                  20       8.97

10 rows selected.
```

12. Display the employee details in the increasing order of deptno. Employees of same department should be arranged in the incresing order of their salary.

```
SQL> select * from staff order by job,deptno asc, sal asc;

     EMPNO ENAME                JOB                        MGR HIREDATE         SAL       COMM     DEPTNO
---------- -------------------- ------------------------ ---------- --------- ---------- ---------- ----------
      7902 FORD                 ANALYST                    7566 03-DEC-81       3000        100         20
      7788 SCOTT                ANALYST                    7566 09-NOV-81       3000        100         20
      7934 MILLER               CLERK                      7782 23-JAN-82       1300        100         10
      7369 SMITH                CLERK                      7902 17-DEC-80        800        100         20
      7876 ADAMS                CLERK                      7788 23-SEP-81       1100        100         20
      7900 JAMES                CLERK                      7698 03-DEC-81        950        100         30
      7782 CLARK                MANAGER                    7839 09-JUN-81       2450        100         10
      7566 JONES                MANAGER                    7839 02-APR-81       2975        100         20
      7698 BLAKE                MANAGER                    7839 01-MAY-81       2850        100         30
      7839 KING                 PRESIDENT                       17-NOV-81       5000        100         10
      7654 MARTIN               SALESMAN                   7698 28-SEP-81       1250       1400         30

     EMPNO ENAME                JOB                        MGR HIREDATE         SAL       COMM     DEPTNO
---------- -------------------- ------------------------ ---------- --------- ---------- ---------- ----------
      7521 WARD                 SALESMAN                   7698 22-FEB-81       1250        500         30
      7844 TURNER               SALESMAN                   7698 08-SEP-81       1500          0         30
      7499 ALLEN                SALESMAN                   7698 20-FEB-81       1600        300         30

14 rows selected.
```