Institute of Engineering & Management
Department of Computer Science & Engineering
Data-Base Management System Lab for 3rd year 6th semester 2019
Code: CS 691

Date: 14/02/19

WEEK-1

Assignment-1

Problem Statement - 1: Make your own student table with certain necessary facts, like your id, name, and branch.

Solution:
```
SQL> create table student_ranajit
  2  ( id number, name varchar2(40), branch varchar2(20));

Table created.
```

Problem Statement - 2: Fill up the table with the records of at least 10 of your friends.

Solution:
```
SQL> insert into student_ranajit values
  2  ( 1, 'Ranajit', 'CSE');

1 row created.

SQL> insert into student_ranajit values
  2  ( 2, 'Ankur', 'CSE');

1 row created.

SQL> insert into student_ranajit values
  2  ( 3, 'Arnab', 'CSE');

1 row created.

SQL> insert into student_ranajit values
  2  ( 4, 'Biswadeep', 'IT');

1 row created.

SQL> insert into student_ranajit values
  2  ( 5, 'Nilabjo', 'IT');

1 row created.

SQL> insert into student_ranajit values
  2  (6, 'Biswanath', 'IT');

1 row created.

SQL> insert into student_ranajit values
  2  ( 7, 'Soumya', 'ECE');

1 row created.

SQL> insert into student_ranajit values
  2  ( 8, 'Aditya', 'ECE');

1 row created.
```

```
SQL> insert into student_ranajit values
  2  (9, 'Rohan', 'CSE');

1 row created.

SQL> insert into student_ranajit values
  2  (10, 'Souvik', 'IT');

1 row created.

SQL> select * from student_ranajit
  2  ;

        ID NAME                                     BRANCH
---------- ---------------------------------------- ----------------
         1 Ranajit                                  CSE
         2 Ankur                                    CSE
         3 Arnab                                    CSE
         4 Biswadeep                                IT
         5 Nilabjo                                  IT
         6 Biswanath                                IT
         7 Soumya                                   ECE
         8 Aditya                                   ECE
         9 Rohan                                    CSE
        10 Souvik                                   IT

10 rows selected.
```

Problem Statement - 3: It sounds good if you say roll instead of id. so, change it.

Solution:
```
SQL> alter table student_ranajit rename column id to roll;

Table altered.
```

Problem Statement - 4: Here, I think age and address could also be added. So, append it with default address of all students as Kolkata.

Solution:
```
SQL> alter table student_ranajit add age number;

Table altered.

SQL> alter table student_ranajit add address varchar2(10) default
'Kolkata';

Table altered.


SQL> select * from student_ranajit;

      ROLL NAME          BRANCH        AGE ADDRESS
---------- ------------- ------ ---------- ----------
         1 Ranajit       CSE               Kolkata
         2 Ankur         CSE               Kolkata
         3 Arnab         CSE               Kolkata
         4 Biswadeep     IT                Kolkata
         5 Nilabjo       IT                Kolkata
         6 Biswanath     IT                Kolkata
         7 Soumya        ECE               Kolkata
         8 Aditya        ECE               Kolkata
         9 Rohan         CSE               Kolkata
        10 Souvik        IT                Kolkata
```

```
10 rows selected.
```

Problem Statement - 5: Fill up the records with individual student's age.

Solution:
```
SQL> update student_ranajit set age=20 where roll=1;

1 row updated.

SQL> update student_ranajit set age=20 where roll=2;

1 row updated.

SQL> update student_ranajit set age=21 where roll=3;

1 row updated.

SQL> update student_ranajit set age=21 where roll=4;

1 row updated.

SQL> update student_ranajit set age=20 where roll=5;

1 row updated.

SQL> update student_ranajit set age=21 where roll=6;

1 row updated.

SQL> update student_ranajit set age=20 where roll=7;

1 row updated.

SQL> update student_ranajit set age=20 where roll=8;

1 row updated.

SQL> update student_ranajit set age=20 where roll=9;

1 row updated.

SQL> update student_ranajit set age=23 where roll=10;

1 row updated.

SQL> select * from student_ranajit;

      ROLL NAME           BRANCH     AGE ADDRESS
---------- ------------- ------ ---------- ----------
         1 Ranajit        CSE         20 Kolkata
         2 Ankur          CSE         20 Kolkata
         3 Arnab          CSE         21 Kolkata
         4 Biswadeep      IT          21 Kolkata
         5 Nilabjo        IT          20 Kolkata
         6 Biswanath      IT          21 Kolkata
         7 Soumya         ECE         20 Kolkata
         8 Aditya         ECE         20 Kolkata
         9 Rohan          CSE         20 Kolkata
        10 Souvik         IT          23 Kolkata

10 rows selected.
```

Problem Statement - 6: How do I identify each student uniquely? So make roll number as your primary key.

Solution:
```
SQL> alter table student_ranajit modify roll primary key;

Table altered.
```

Problem Statement - 7: Don't keep the name field blank for any record.

Solution:
```
SQL> alter table student_ranajit modify name not null;

Table altered.
```

Problem Statement - 8: Add marks column in the table and add values.

Solution:
```
SQL> alter table student_ranajit add marks integer default 75;

Table altered.

SQL> update student_ranajit set marks=95 where roll=1;

1 row updated.

SQL> update student_ranajit set marks=90 where roll=4;

1 row updated.

SQL> update student_ranajit set marks=97 where roll=7;

1 row updated.

SQL> update student_ranajit set marks=40 where roll=10;

1 row updated.
```

Problem Statement - 9: Identify the students who have passed the exam. Cut off marks is 50%.

Solution:
```
SQL> select name from student_ranajit where marks>=50;

NAME
-------------
Ranajit
Ankur
Arnab
Biswadeep
Nilabjo
Biswanath
Soumya
Aditya
Rohan

9 rows selected.
```

Problem Statement - 10: If any student fails, discard his record from the database

Solution:
```
SQL> delete from student_ranajit where marks<50;
```

```
1 row deleted.
```

Problem Statement - 11: Remove the address field from your table.

Solution:
```
SQL> alter table student_ranajit drop column address;

Table altered.
```

Problem Statement - 12: Copy the contents from emp table to a new table.

Solution:
```
SQL> create table new_rana as select * from emp;

Table created.
```

Problem Statement - 13: Show the employee records from your new table.

Solution:
```
SQL> select * from new_rana;

     EMPNO ENAME      JOB       HIREDATE        SAL       COMM     DEPTNO
---------- ---------- --------- --------- ---------- ---------- ----------
      7369 SMITH      CLERK     17-DEC-80       800                    20
      7499 ALLEN      SALESMAN  20-FEB-81      1600        300         30
      7521 WARD       SALESMAN  22-FEB-81      1250        500         30
      7566 JONES      MANAGER   02-APR-81      2975                    20
      7654 MARTIN     SALESMAN  28-SEP-81      1250       1400         30
      7698 BLAKE      MANAGER   01-MAY-81      2850                    30
      7782 CLARK      MANAGER   09-JUN-81      2450                    10
      7788 SCOTT      ANALYST   19-APR-87      3000                    20
      7839 KING       PRESIDENT 17-NOV-81      5000                    10
      7844 TURNER     SALESMAN  08-SEP-81      1500          0         30
      7876 ADAMS      CLERK     23-MAY-87      1100                    20
      7900 JAMES      CLERK     03-DEC-81       950                    30
      7902 FORD       ANALYST   03-DEC-81      3000                    20
      7934 MILLER     CLERK     23-JAN-82      1300                    10

14 rows selected.
```

Problem Statement - 14: Show salary statement along with name of all employees whose salary>1000.

Solution:
```
SQL> select ename, sal from new_rana where sal>1000;

ENAME             SAL
---------- ----------
ALLEN            1600
WARD             1250
JONES            2975
MARTIN           1250
BLAKE            2850
CLARK            2450
SCOTT            3000
KING             5000
TURNER           1500
ADAMS            1100
FORD             3000
MILLER           1300

12 rows selected.
```

Problem Statement - 15: How many such employees are there whose salary is within 1000 to 3000 range?

Solution:
```
SQL> select count(ename) from new_rana where sal between 1000 and 3000;

COUNT(ENAME)
------------
          11
```

Problem Statement - 16: Give a pay hike to the employees whose salary is 1250 and 950.

Solution:
```
SQL> select sal, sal+100 from new_rana where sal=1250 or sal=950;

       SAL    SAL+100
---------- ----------
      1250       1350
      1250       1350
       950       1050
```

Problem Statement - 17: Suggest a meaningful name for salary hike column .

Solution:
```
SQL> select sal, sal+100 hike from new_rana where sal=1250 or sal=950;

       SAL       HIKE
---------- ----------
      1250       1350
      1250       1350
       950       1050
```

Problem Statement - 18: How many types of jobs are there in this company?

Solution:
```
SSQL> select count(distinct job) from new_rana;

COUNT(DISTINCTJOB)
------------------
                 5
```

Problem Statement - 19: Give a salary hike of 15% to the employees who have joined the company before 31st Dec 1981.

Solution:
```
SQL> select sal, (sal+sal*.15) from new_rana where hiredate<'31-DEC-1981';

       SAL (SAL+SAL*.15)
---------- -------------
       800           920
      1600          1840
      1250        1437.5
      2975       3421.25
      1250        1437.5
      2850        3277.5
      2450        2817.5
      5000          5750
      1500          1725
       950        1092.5
      3000          3450

11 rows selected.
```

Name: Ranajit Roy, **Sec:** A, **Roll:** 47