Database Management Laboratory (PCCIT592)

Lab Sessional Report Submitted to

Maulana Abul Kalam Azad University of Technology, West Bengal

for

B. Tech.

in

Department of Information Technology

Submitted by

Monodip Biswas (10000220062)

Course Faculty

MrS. Sayantani Saha

Department of Information Technology

Maulana Abul Kalam Azad University of Technology, West Bengal
Simhat, Haringhata, Nadia
Pin-741249

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Date: **21/11/2021**

ASSIGNMENT-1

1.Create the following table: STUDENT and display structure.

```
create table STUDENT (
    RegNo varchar(6) Not null,
    RollNo int(6) Not null,
    Name varchar(10) Not null,
    Address varchar(15) Not null,
    PhoneNo int(10),
    YearofAdm int(4) Not null,
    DeptCode varchar(4) Not null,
    Year int(1) Not null,
    BirthDate date Not null);
```

```
mysql> desc STUDENT;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| RegNo     | varchar(6)  | NO   |     | NULL    |       |
| RollNo    | int         | NO   |     | NULL    |       |
| Name      | varchar(10) | NO   |     | NULL    |       |
| Address   | varchar(15) | NO   |     | NULL    |       |
| PhoneNo   | int         | YES  |     | NULL    |       |
| YearofAdm | int         | NO   |     | NULL    |       |
| DeptCode  | varchar(4)  | NO   | MUL | NULL    |       |
| Year      | int         | NO   |     | NULL    |       |
| BirthDate | date        | NO   |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
9 rows in set (0.01 sec)
```

2. Insert the following data in the STUDENT table.

```
insert into STUDENT values (012301, 123001, 'Ashish', 'Jadavpur', 24761892,
2003,'CSE', 3, '1981- 06-01');
insert into STUDENT values (012315, 123015, 'Kamal', 'Kashba', 24424987,
2003,'CSE', 3, '1981-09-19');
insert into STUDENT values (012424, 124024, 'Ipsita', 'Kaikhali', 25739608,
2004,'CSE', 2, '1982-08-15');
insert into STUDENT values (012250, 122050, 'Anita', 'Hooghly', 36719695,
2002,'IT', 4, '1980-12-22');
insert into STUDENT values (012344, 123044, 'Biplab', 'Howrah', null, 2003,'IT',
3, '1982-01-03');
insert into STUDENT values (012357, 123057, 'Samik', 'Barasat', 25426742,
2003,'IT', 3, '1981-07-15');
insert into STUDENT values (012419, 124019, 'Srija','Garia', 24755655, 2004,
'EE', 2, '1982-10-25');
```

Date:

insert into STUDENT values (012427, 124027, 'Saibal', 'Garia', 24753306, 2004,'ECE', 2, '1983-03-22');

insert into STUDENT values (012236, 122036, 'Santanu', 'DumDum', null, 2002,'ECE', 4, '1980-12-11');

```
mysql> select * from STUDENT;
+-------+--------+---------+----------+----------+-----------+----------+------+------------+
| RegNo | RollNo | Name    | Address  | PhoneNo  | YearofAdm | DeptCode | Year | BirthDate  |
+-------+--------+---------+----------+----------+-----------+----------+------+------------+
| 12301 | 123001 | Ashish  | Jadavpur | 24761892 |      2003 | CSE      |    3 | 1981-06-01 |
| 12315 | 123015 | Kamal   | Kashba   | 24424987 |      2003 | CSE      |    3 | 1981-09-19 |
| 12424 | 124024 | Ipsita  | Kaikhali | 25739608 |      2004 | CSE      |    2 | 1982-08-15 |
| 12250 | 122050 | Anita   | Hooghly  | 36719695 |      2002 | IT       |    4 | 1980-12-22 |
| 12344 | 123044 | Biplab  | Howrah   |     NULL |      2003 | IT       |    3 | 1982-01-03 |
| 12357 | 123057 | Samik   | Barasat  | 25426742 |      2003 | IT       |    3 | 1981-07-15 |
| 12419 | 124019 | Srija   | Garia    | 24755655 |      2004 | EE       |    2 | 1982-10-25 |
| 12427 | 124027 | Saibal  | Garia    | 24753306 |      2004 | ECE      |    2 | 1983-03-22 |
| 12236 | 122036 | Santanu | DumDum   |     NULL |      2002 | ECE      |    4 | 1980-12-11 |
+-------+--------+---------+----------+----------+-----------+----------+------+------------+
9 rows in set (0.02 sec)
```

Date: **24/11/2021**

ASSIGNMENT 2

1.Write SQL command to add primary key to the table STUDENT with RegNo as Primary Key:

```
mysql> alter table STUDENT add Primary key(RegNo);
Query OK, 0 rows affected (2.91 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc STUDENT;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| RegNo     | varchar(6)  | NO   | PRI | NULL    |       |
| RollNo    | int         | NO   |     | NULL    |       |
| Name      | varchar(10) | NO   |     | NULL    |       |
| Address   | varchar(15) | NO   |     | NULL    |       |
| PhoneNo   | int         | YES  |     | NULL    |       |
| YearofAdm | int         | NO   |     | NULL    |       |
| DeptCode  | varchar(4)  | NO   | MUL | NULL    |       |
| Year      | int         | NO   |     | NULL    |       |
| BirthDate | date        | NO   |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
9 rows in set (0.06 sec)
```

2. Display all student records:

```
mysql> select * from STUDENT;
+-------+--------+---------+----------+----------+-----------+----------+------+------------+
| RegNo | RollNo | Name    | Address  | PhoneNo  | YearofAdm | DeptCode | Year | BirthDate  |
+-------+--------+---------+----------+----------+-----------+----------+------+------------+
| 12236 | 122036 | Santanu | DumDum   |     NULL |      2002 | ECE      |    4 | 1980-12-11 |
| 12250 | 122050 | Anita   | Hooghly  | 36719695 |      2002 | IT       |    4 | 1980-12-22 |
| 12301 | 123001 | Ashish  | Jadavpur | 24761892 |      2003 | CSE      |    3 | 1981-06-01 |
| 12315 | 123015 | Kamal   | Kashba   | 24424987 |      2003 | CSE      |    3 | 1981-09-19 |
| 12344 | 123044 | Biplab  | Howrah   |     NULL |      2003 | IT       |    3 | 1982-01-03 |
| 12357 | 123057 | Samik   | Barasat  | 25426742 |      2003 | IT       |    3 | 1981-07-15 |
| 12419 | 124019 | Srija   | Garia    | 24755655 |      2004 | EE       |    2 | 1982-10-25 |
| 12424 | 124024 | Ipsita  | Kaikhali | 25739608 |      2004 | CSE      |    2 | 1982-08-15 |
| 12427 | 124027 | Saibal  | Garia    | 24753306 |      2004 | ECE      |    2 | 1983-03-22 |
+-------+--------+---------+----------+----------+-----------+----------+------+------------+
9 rows in set (0.02 sec)
```

3. Display Name, Address and Year of Admission of each STUDENT:

```
mysql> select Name,Address,YearofAdm from STUDENT;
+---------+----------+-----------+
| Name    | Address  | YearofAdm |
+---------+----------+-----------+
| Santanu | DumDum   |      2002 |
| Anita   | Hooghly  |      2002 |
| Ashish  | Jadavpur |      2003 |
| Kamal   | Kashba   |      2003 |
| Biplab  | Howrah   |      2003 |
| Samik   | Barasat  |      2003 |
| Srija   | Garia    |      2004 |
| Ipsita  | Kaikhali |      2004 |
| Saibal  | Garia    |      2004 |
+---------+----------+-----------+
9 rows in set (0.00 sec)
```

4.

List the name and year of students who are in Computer Science.

```
mysql> select Name,Year from STUDENT where DeptCode="CSE";
+--------+------+
| Name   | Year |
+--------+------+
| Ashish |    3 |
| Kamal  |    3 |
| Ipsita |    2 |
+--------+------+
3 rows in set (0.00 sec)

mysql>
```

5. List the names and departments of students belonging to 3rd year.

```
mysql> select Name,DeptCode from STUDENT where Year = 3;
+--------+----------+
| Name   | DeptCode |
+--------+----------+
| Ashish | CSE      |
| Kamal  | CSE      |
| Biplab | IT       |
| Samik  | IT       |
+--------+----------+
4 rows in set (0.00 sec)

mysql>
```

6.Display names of students with ‘a’ as the second letter in their names.

```
mysql> select Name from STUDENT where Name like '_a%';
+---------+
| Name    |
+---------+
| Santanu |
| Kamal   |
| Samik   |
| Saibal  |
+---------+
4 rows in set (0.01 sec)
```

7.Display names of students in descending alphabetical order.

```
mysql> select Name from STUDENT order by Name desc;
+---------+
| Name    |
+---------+
| Srija   |
| Santanu |
| Samik   |
| Saibal  |
| Kamal   |
| Ipsita  |
| Biplab  |
| Ashish  |
| Anita   |
+---------+
9 rows in set (0.00 sec)
```

8.Display names and addresses of students who took admission in the year 2004.

```
mysql> select Name,Address from STUDENT where YearOfAdm="2004";
+--------+----------+
| Name   | Address  |
+--------+----------+
| Srija  | Garia    |
| Ipsita | Kaikhali |
| Saibal | Garia    |
+--------+----------+
3 rows in set (0.10 sec)
```

9. List the names of students who does not have a phone number.

```
mysql> select Name,Address from STUDENT where PhoneNo is NULL;
+---------+---------+
| Name    | Address |
+---------+---------+
| Santanu | DumDum  |
| Biplab  | Howrah  |
+---------+---------+
2 rows in set (0.00 sec)
```

10.List names of student and their departments whose date of birth is after 1st June 1981.

```
mysql> select Name,Address from STUDENT where BirthDate > '1981-06-01';
+--------+----------+
| Name   | Address  |
+--------+----------+
| Kamal  | Kashba   |
| Biplab | Howrah   |
| Samik  | Barasat  |
| Srija  | Garia    |
| Ipsita | Kaikhali |
| Saibal | Garia    |
+--------+----------+
6 rows in set (0.00 sec)
```

11. Create a CHECK constraint on this table for the field Year such that Year should be between 1&4.

```
mysql> alter table STUDENT add CHECK(Year>1 and Year<=4);
Query OK, 9 rows affected (2.60 sec)
Records: 9  Duplicates: 0  Warnings: 0
```

12. Update 4th year students to make Year=5. Observe and note the message.

```
mysql> update STUDENT set Year = 5 where Year = 4;
ERROR 3819 (HY000): Check constraint 'STUDENT_chk_1' is violated.
mysql>
```

Date: **21/11/2021**

ASSIGNMENT_3

1. Create table DEPARTMENT

```
mysql> create table DEPARTMENT (
    ->   DeptCode varchar (4) PRIMARY KEY,
    ->   DeptName varchar (40) not null,
    ->   HOD varchar (4) not null
    -> );
Query OK, 0 rows affected (2.49 sec)
```

Description:

```
mysql> desc DEPARTMENT;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| DeptCode | varchar(4)  | NO   | PRI | NULL    |       |
| DeptName | varchar(40) | NO   |     | NULL    |       |
| HOD      | varchar(4)  | NO   |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
3 rows in set (0.04 sec)
```

2. INSERT values into DEPARTMENT Table:

mysql> // changes were made in DEPARTMENT table due to the FOREIGN KEY issue in table STUDENT;//

insert into DEPARTMENT values ('CSE','Computer Science and Engineering','F101');

insert into DEPARTMENT values ('ECE','Electronics Communication Engineering','F506');

insert into DEPARTMENT values ('EE,'Electrtical Engineering','F901');

insert into DEPARTMENT values ('IT','Information Technology','F201');

```
mysql> select * from DEPARTMENT;
+----------+---------------------------------------+------+
| DeptCode | DeptName                              | HOD  |
+----------+---------------------------------------+------+
| CSE      | Computer Science and Engineering      | F101 |
| ECE      | Electronics Communication Engineering | F506 |
| EE       | Electrical Engineering                | F901 |
| IT       | Information Technology                | F201 |
+----------+---------------------------------------+------+
4 rows in set (0.00 sec)

mysql>
```

3. Add a foreign key constraint in STUDENT against DeptCode column which references DEPARTMENT.

```
mysql> alter table STUDENT add constraint Department FOREIGN KEY (DeptCode) references DEPARTMENT(DeptCode);
Query OK, 10 rows affected (2.59 sec)
Records: 10  Duplicates: 0  Warnings: 0

mysql> desc STUDENT;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| RegNo     | varchar(6)  | NO   |     | NULL    |       |
| RollNo    | int         | NO   |     | NULL    |       |
| Name      | varchar(10) | NO   |     | NULL    |       |
| Address   | varchar(15) | NO   |     | NULL    |       |
| PhoneNo   | int         | YES  |     | NULL    |       |
| YearofAdm | int         | NO   |     | NULL    |       |
| DeptCode  | varchar(4)  | NO   | MUL | NULL    |       |
| Year      | int         | NO   |     | NULL    |       |
| BirthDate | date        | NO   |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
9 rows in set (0.01 sec)
```

4.Create table: FACULTY.

```
mysql> create table FACULTY (
    -> FacultyCode varchar(4) PRIMARY KEY,
    -> FacultyName varchar(15) Not null,
    -> DateOfJoin date Not null,
    -> DeptCode varchar(4) Not null
    -> );
Query OK, 0 rows affected (1.92 sec)

mysql> desc FACULTY;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| FacultyCode | varchar(4)  | NO   | PRI | NULL    |       |
| FacultyName | varchar(15) | NO   |     | NULL    |       |
| DateOfJoin  | date        | NO   |     | NULL    |       |
| DeptCode    | varchar(4)  | NO   |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
4 rows in set (0.05 sec)
```

5. Insert appropriate values in the above table.

INSERT INTO FACULTY VALUES ('F101', 'M.Sinha','2005-01-01','CSE');
INSERT INTO FACULTY VALUES ('F105', 'P.sarkar','2019-02-01','CSE');
INSERT INTO FACULTY VALUES ('F201', 'S.Mazumder','2005-09-15','IT');
INSERT INTO FACULTY VALUES ('F301', 'S.Mondal','2018-08-01','CSE');
INSERT INTO FACULTY VALUES ('F401', 'D.Majumdar','2003-01-12','IT');
INSERT INTO FACULTY VALUES ('F506', 'N.Biswas','2013-12-31','ECE');

INSERT INTO FACULTY VALUES ('F607', 'R.Paul','2007-04-10','EE');

INSERT INTO FACULTY VALUES ('F704', 'S.Sarkar','2012-01-01','IT');

INSERT INTO FACULTYVALUES ('F808', 'K.Das','2010-06-15','IT');

INSERT INTO FACULTYVALUES ('F901', 'R.Roy','2017-06-15','EE');

INSERT INTO FACULTY VALUES ('F902', 'R.Biswas','2018-06-15','ECE');

```
mysql> update FACULTY set DeptCode = "ECE" where FacultyCode = "F506";
Query OK, 1 row affected (0.25 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from FACULTY;
+-------------+-------------+------------+----------+
| FacultyCode | FacultyName | DateOfJoin | DeptCode |
+-------------+-------------+------------+----------+
| F101        | M.Sinha     | 2005-01-01 | CSE      |
| F105        | P.Sarkar    | 2019-02-01 | CSE      |
| F201        | S.Mazumder  | 2005-09-15 | IT       |
| F301        | S.Mondal    | 2018-08-01 | CSE      |
| F401        | D.Majumdar  | 2003-01-12 | IT       |
| F506        | N.Biswas    | 2007-12-31 | ECE      |
| F607        | R.Paul      | 2007-04-10 | EE       |
| F704        | S.Sarkar    | 2012-01-01 | IT       |
| F808        | K.Das       | 2010-06-15 | IT       |
| F901        | R.Roy       | 2017-06-15 | EE       |
| F902        | R.Biswas    | 2018-06-15 | EE       |
+-------------+-------------+------------+----------+
11 rows in set (0.00 sec)
```

6.Alter the table Faculty and add check constraint such that FacultyCode starts with ‘F’.

```
mysql> alter table FACULTY add constraint Con_Faculty Check(FacultyCode like 'F%');
Query OK, 11 rows affected (2.92 sec)
Records: 11  Duplicates: 0  Warnings: 0
```

7.Alter the table FACULTY and add check constraint such DeptCode is either CSE,IT, EE,ECE:

```
mysql> alter table FACULTY add constraint Cons_Faculty Check(DeptCode IN('CSE','IT','EE','ECE'));
Query OK, 11 rows affected (2.92 sec)
Records: 11  Duplicates: 0  Warnings: 0

mysql>
```

8.Add constraint : DeptCode of FACULTY is foreign key and references DeptCode in DEPARTMENT.

```
mysql> alter table FACULTY add constraint Fkey_Department Foreign key(DeptCode)
references DEPARTMENT(DeptCode);
Query OK, 11 rows affected (4.88 sec)
Records: 11  Duplicates: 0  Warnings: 0

mysql> desc FACULTY;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| FacultyCode | varchar(4)  | NO   | PRI | NULL    |       |
| FacultyName | varchar(15) | NO   |     | NULL    |       |
| DateOfJoin  | date        | NO   |     | NULL    |       |
| DeptCode    | varchar(4)  | NO   | MUL | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

9.Add Constraint: HOD of DEPARTMENT table is foreign key and references FacultyCode of FACULTY.

```
mysql> alter table DEPARTMENT add constraint Fkey_HOD Foreign key(HOD) reference
s FACULTY(FacultyCode);
Query OK, 4 rows affected (2.30 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql>
```

```
mysql> desc DEPARTMENT;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| DeptCode | varchar(4)  | NO   | PRI | NULL    |       |
| DeptName | varchar(40) | NO   |     | NULL    |       |
| HOD      | varchar(4)  | NO   | MUL | NULL    |       |
+----------+-------------+------+-----+---------+-------+
3 rows in set (0.53 sec)
```

10. Find the names of faculties of CSE Department.

```
mysql> select FacultyName from FACULTY where DeptCode = "CSE";
+-------------+
| FacultyName |
+-------------+
| M.Sinha     |
| P.Sarkar    |
| S.Mondal    |
+-------------+
3 rows in set (0.01 sec)
```

Date:

11. Find the number of faculties in the IT department:

```
mysql> select count(*) as 'number of faculty' from FACULTY where Deptcode=('IT');
+-------------------+
| number of faculty |
+-------------------+
|                 4 |
+-------------------+
1 row in set (0.10 sec)

mysql>
```

12. Show the names of the heads of departments with department name.

```
mysql> SELECT D.HOD,D.DeptName, F.FacultyName FROM DEPARTMENT D JOIN FACULTY F  ON D.HOD = F.FacultyCode;
+------+--------------------------------------+-------------+
| HOD  | DeptName                             | FacultyName |
+------+--------------------------------------+-------------+
| F101 | Computer Science and Engineering     | M.Sinha     |
| F506 | Electronics Communication Engineering | N.Biswas    |
| F901 | Electrical Engineering               | R.Roy       |
| F201 | Information Technology               | S.Mazumder  |
+------+--------------------------------------+-------------+
4 rows in set (0.00 sec)

mysql>
```

13. Find the number of faculties who joined in August.

```
mysql> select count( * )as "no of faculty" from FACULTY where month(DateOfJoin)= 8;
+---------------+
| no of faculty |
+---------------+
|             1 |
+---------------+
1 row in set (0.10 sec)
```

14.Add an extra attribute to the faculty table -Salary Number(8,2)

```
mysql> alter table FACULTY add column Salary decimal(8,2);
Query OK, 0 rows affected (1.09 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc FACULTY;
+-------------+--------------+------+-----+---------+-------+
| Field       | Type         | Null | Key | Default | Extra |
+-------------+--------------+------+-----+---------+-------+
| FacultyCode | varchar(4)   | NO   | PRI | NULL    |       |
| FacultyName | varchar(15)  | NO   |     | NULL    |       |
| DateOfJoin  | date         | NO   |     | NULL    |       |
| DeptCode    | varchar(4)   | NO   | MUL | NULL    |       |
| Salary      | decimal(8,2) | YES  |     | NULL    |       |
+-------------+--------------+------+-----+---------+-------+
5 rows in set (0.00 sec)

mysql>
```

15.Insert values into the corresponding field Salary Number(8,2) (Enter distinct values).

```
mysql> update FACULTY set salary=12400.00 where FacultyCode='F901';
Query OK, 1 row affected (0.10 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update FACULTY set salary=20000.00 where FacultyCode='F902';
Query OK, 1 row affected (0.28 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from FACULTY;
+-------------+-------------+------------+----------+----------+
| FacultyCode | FacultyName | DateOfJoin | DeptCode | Salary   |
+-------------+-------------+------------+----------+----------+
| F101        | M.Sinha     | 2005-01-01 | CSE      | 15000.00 |
| F105        | P.Sarkar    | 2019-02-01 | CSE      |  6800.00 |
| F201        | S.Mazumder  | 2005-09-15 | IT       |  9200.00 |
| F301        | S.Mondal    | 2018-08-01 | CSE      |  8100.00 |
| F401        | D.Majumdar  | 2003-01-12 | IT       | 13100.00 |
| F506        | N.Biswas    | 2007-12-31 | ECE      | 10000.00 |
| F607        | R.Paul      | 2007-04-10 | EE       | 41000.00 |
| F704        | S.Sarkar    | 2012-01-01 | IT       | 16000.00 |
| F808        | K.Das       | 2010-06-15 | IT       | 19000.00 |
| F901        | R.Roy       | 2017-06-15 | EE       | 12400.00 |
| F902        | R.Biswas    | 2018-06-15 | EE       | 20000.00 |
+-------------+-------------+------------+----------+----------+
11 rows in set (0.00 sec)
```

16. Find the Department having more than one faculty.

```
mysql> SELECT d.DeptName from DEPARTMENT d where (select count(*) from FACULTY f where d.DeptCode=f.DeptCode)>1;
+---------------------------------+
| DeptName                        |
+---------------------------------+
| Computer Science and Engineering |
| Electrical Engineering          |
| Information Technology          |
+---------------------------------+
3 rows in set (0.28 sec)
```

17. Find the name, department of the faculties who earn between 8000 and 12000.

```
mysql> select FacultyName,DeptCode from FACULTY where Salary > 8000.00 and Salary < 12000.00;
+-------------+----------+
| FacultyName | DeptCode |
+-------------+----------+
| S.Mazumder  | IT       |
| S.Mondal    | CSE      |
| N.Biswas    | ECE      |
+-------------+----------+
3 rows in set (0.01 sec)
```

18. Find the name of the department with maximum faculties.

```
mysql> select DeptName, Count(*) as FacultyCount from DEPARTMENT JOIN FACULTY on DEPARTMENT.DeptCode = FACULTY.DeptCode Group by DeptName Order by FacultyCount
desc limit 1;
+-----------------------+-------------+
| DeptName              | FacultyCount |
+-----------------------+-------------+
| Information Technology |           4 |
+-----------------------+-------------+
1 row in set (0.00 sec)

mysql>
```

19. Find the senior most faculty.

```
mysql> select FacultyName, timestampdiff(year,DateOfJoin,sysdate()) as MostSenio
r from FACULTY order by DateOfJoin limit 1;
+-------------+------------+
| FacultyName | MostSenior |
+-------------+------------+
| D.Majumdar  |         18 |
+-------------+------------+
1 row in set (0.00 sec)

mysql>
```

20. Find the name of the faculty who has completed 5 years.

```
Database changed
mysql> SELECT FacultyName from FACULTY where(DATEDIFF(SYSDATE(),DateOfJoin)/365)>=5;
+-------------+
| FacultyName |
+-------------+
| M.Sinha     |
| S.Mazumder  |
| D.Majumdar  |
| N.Biswas    |
| R.Paul      |
| S.Sarkar    |
| K.Das       |
+-------------+
7 rows in set (0.00 sec)
```

Date: **26/01/2022**

ASSIGNEMENT -5

1.Create table SUBJECT and insert appropriate values.

Column Name	**Data Type**	**Size**	**Constraints**
SubjectCode	Varchar2	4	Not null, Primary key
SubjectName	Varchar2	15	Not null
Faculty	Varchar2	4	Foreign key references FacultyCode of table **FACULTY**

Ans:

```
create table SUBJECT(
SubjectCode varchar(4) not null,

SubjectName varchar(20) not null,
Faculty varchar (4) not null,
FOREIGN KEY(Faculty) references FACULTY(FacultyCode)
);
```

```
insert into SUBJECT values ('IT50','RDBMS','F201’);
insert into SUBJECT values ('CS45','DAA','F301');
insert into SUBJECT values ('CS35','DSA','F101');
insert into SUBJECT values ('EC21','AE','F506');
insert into SUBJECT values ('EE69','IM','F901');
```

```
mysql> desc SUBJECT;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| SubjectCode | varchar(4)  | NO   |     | NULL    |       |
| SubjectName | varchar(20) | NO   |     | NULL    |       |
| Faculty     | varchar(4)  | NO   | MUL | NULL    |       |
| Department  | varchar(4)  | YES  |     | NULL    |       |
| year        | varchar(1)  | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
5 rows in set (0.01 sec)

mysql> select * from SUBJECT;
+-------------+-------------+---------+------------+------+
| SubjectCode | SubjectName | Faculty | Department | year |
+-------------+-------------+---------+------------+------+
| IT50        | RDBMS       | F201    | IT         | 3    |
| CS45        | DAA         | F301    | CSE        | 2    |
| EC21        | AE          | F506    | ECE        | 1    |
| EE69        | IM          | F901    | EE         | 4    |
| CS35        | DSA         | F101    | CSE        | 3    |
+-------------+-------------+---------+------------+------+
5 rows in set (0.12 sec)
```

2.Find the number of students in each department with their department name.

Ans: select DeptName, count(*) as NumOfStudents from DEPARTMENT JOIN STUDENT on STUDENT.DeptCode = DEPARTMENT.DeptCode group by STUDENT.DeptCode;

```
mysql> select DeptName, count(*) as NumOfStudents from DEPARTMENT JOIN STUDENT on STUDENT.
+-------------------------------------+---------------+
| DeptName                            | NumOfStudents |
+-------------------------------------+---------------+
| Computer Science and Engineering    |             4 |
| Electronics Communication Engineering |             1 |
| Electrtical Engineering             |             1 |
| Information Technology              |             4 |
+-------------------------------------+---------------+
4 rows in set (0.16 sec)
```

3.Increment the salary of each faculty by Rs 500.

Ans: update FACULTY set Salary = Salary + 500;

```
mysql> select * from FACULTY;
+-------------+-------------+-------------+----------+----------+
| FacultyCode | FacultyName | DateOfJoin  | DeptCode | Salary   |
+-------------+-------------+-------------+----------+----------+
|             | K.Das       | 0000-00-00  | CSE      |     NULL |
| F101        | M.Sinha     | 2005-01-01  | IT       | 15500.00 |
| F105        | P.sarkar    | 2019-02-01  | CSE      |  7300.00 |
| F201        | S.Mazumder  | 2005-09-15  | IT       |  9700.00 |
| F301        | S.Mondal    | 2018-08-01  | CSE      |  8600.00 |
| F401        | D.Majumdar  | 2003-01-12  | IT       | 13600.00 |
| F506        | N.Biswas    | 2013-12-31  | ECE      | 10500.00 |
| F607        | R.Paul      | 2007-04-10  | EE       | 41500.00 |
| F704        | S.Sarkar    | 2012-01-01  | IT       | 16500.00 |
| F808        | K.Das       | 2010-06-15  | IT       | 19500.00 |
| F901        | R.Roy       | 2017-06-15  | EE       | 12900.00 |
| F902        | R.Biswas    | 2018-06-15  | ECE      | 20500.00 |
+-------------+-------------+-------------+----------+----------+
12 rows in set (0.00 sec)
```

4. Find the names of students and faculties whose name start with ‘S’.

```
mysql> select Name from STUDENT where Name like 'S%' union select FacultyName from
    -> FACULTY where FacultyName like 'S%';
+------------+
| Name       |
+------------+
| Samik      |
| Srija      |
| Saibal     |
| S.Mazumder |
| S.Mondal   |
| S.Sarkar   |
+------------+
6 rows in set (0.13 sec)
```

5. Find the students who stay in Kaikhali

Ans: select Name from STUDENT where Address = "Kaikhali";

```
mysql> select Name from STUDENT where Address = "Kaikhali";
+--------+
| Name   |
+--------+
| Ipsita |
+--------+
1 row in set (0.01 sec)
```

6. Find the names of faculties who take classes in the IT department.

Ans: select FacultyName from FACULTY where DeptCode = 'IT';

```
mysql> select FacultyName from FACULTY where DeptCode = "IT";
+-------------+
| FacultyName |
+-------------+
| M.Sinha     |
| S.Mazumder  |
| D.Majumdar  |
| S.Sarkar    |
| K.Das       |
+-------------+
5 rows in set (0.00 sec)
```

7. Find the names of all faculties whose HOD is given.

Ans: select HOD,FacultyName from DEPARTMENT JOIN FACULTY ON DEPARTMENT.HOD = FACULTY.FacultyCode ;

```
mysql> select HOD,FacultyName from DEPARTMENT JOIN FACULTY ON DEPARTMENT.HOD = FACULTY.Fac
ultyCode ;
+------+-------------+
| HOD  | FacultyName |
+------+-------------+
| F101 | M.Sinha     |
| F201 | S.Mazumder  |
| F506 | N.Biswas    |
| F901 | R.Roy       |
+------+-------------+
4 rows in set (0.00 sec)
```

8. Add extra attribute to the Subject table - department varchar2(4), year varchar2(1)

Ans: alter table SUBJECT add column Department varchar(4);
alter table SUBJECT add column year varchar(1);

```
mysql> desc SUBJECT;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| SubjectCode | varchar(4)  | NO   |     | NULL    |       |
| SubjectName | varchar(20) | NO   |     | NULL    |       |
| Faculty     | varchar(4)  | NO   | MUL | NULL    |       |
| Department  | varchar(4)  | YES  |     | NULL    |       |
| year        | varchar(1)  | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
5 rows in set (0.01 sec)
```

9. Insert values into the fields - department, year.

Ans:
update SUBJECT set Department = 'IT', year = 3 where SubjectName = 'RDBMS';
update SUBJECT set Department = 'CSE', year = 2 where SubjectCode = 'CS45';
update SUBJECT set Department = 'ECE', year = 1 where SubjectCode = 'EC21';
update SUBJECT set Department = 'IM', year = 4 where SubjectCode = 'EE69';
update SUBJECT set Department = 'CSE', year = 3 where SubjectCode = 'CS35';

select * from SUBJECT;

```
mysql> select * from SUBJECT;
+-------------+-------------+---------+------------+------+
| SubjectCode | SubjectName | Faculty | Department | year |
+-------------+-------------+---------+------------+------+
| IT50        | RDBMS       | F201    | IT         | 3    |
| CS45        | DAA         | F301    | CSE        | 2    |
| EC21        | AE          | F506    | ECE        | 1    |
| EE69        | IM          | F901    | EE         | 4    |
| CS35        | DSA         | F101    | CSE        | 3    |
+-------------+-------------+---------+------------+------+
5 rows in set (0.12 sec)
```

10.Find the names of faculties who earn more than the average of all faculties.
Ans:
select FacultyName from FACULTY group by FacultyName having avg(Salary) > (select avg(salary) from FACULTY);

```
mysql> select FacultyName from FACULTY group by FacultyName having avg(Salary) > (select a
vg(salary) from FACULTY);
+-------------+
| FacultyName |
+-------------+
| K.Das       |
| R.Paul      |
| S.Sarkar    |
| R.Biswas    |
+-------------+
4 rows in set (0.00 sec)
```

11. List the names of faculties of CSE department who earn more than the average salary of the department.

Ans: select FacultyName from FACULTY group by FacultyName having avg(Salary) > (select avg(Salary) from FACULTY where DeptCode = 'CSE');

```
mysql> select FacultyName from FACULTY group by FacultyName having avg(Salary) > (select a
vg(Salary) from FACULTY where DeptCode = 'CSE');
+-------------+
| FacultyName |
+-------------+
| K.Das       |
| M.Sinha     |
| S.Mazumder  |
| S.Mondal    |
| D.Majumdar  |
| N.Biswas    |
| R.Paul      |
| S.Sarkar    |
| R.Roy       |
| R.Biswas    |
+-------------+
10 rows in set (0.00 sec)
```

12. Find the maximum and minimum salaries among faculties.

Ans: select max(Salary) as MaxSal, min(Salary) as MinSal from FACULTY;

```
mysql> select max(Salary) as MaxSal, min(Salary) as MinSal from FACULTY;
+----------+---------+
| MaxSal   | MinSal  |
+----------+---------+
| 41500.00 | 7300.00 |
+----------+---------+
1 row in set (0.00 sec)
```

13. Find the second maximum samary among all faculties.

Ans: select * from FACULTY order by Salary desc limit 1,1;

```
mysql> select * from FACULTY order by Salary desc limit 1,1;
+-------------+-------------+-----------+----------+----------+
| FacultyCode | FacultyName | DateOfJoin | DeptCode | Salary   |
+-------------+-------------+-----------+----------+----------+
| F902        | R.Biswas    | 2018-06-15 | ECE      | 20500.00 |
+-------------+-------------+-----------+----------+----------+
1 row in set (0.01 sec)
```

14. Find the names of faculties who are not the HOD's of any department.

Ans select FacultyName from FACULTY where FacultyCode Not in(select HOD from DEPARTMENT);

```
mysql> select FacultyName from FACULTY where FacultyCode Not in(select HOD from DEPARTMENT
);
+-------------+
| FacultyName |
+-------------+
| K.Das       |
| P.sarkar    |
| S.Mondal    |
| D.Majumdar  |
| R.Paul      |
| S.Sarkar    |
| K.Das       |
| R.Biswas    |
+-------------+
8 rows in set (0.00 sec)
```

15. Find the names of subjects for students of CSE 3rd year.

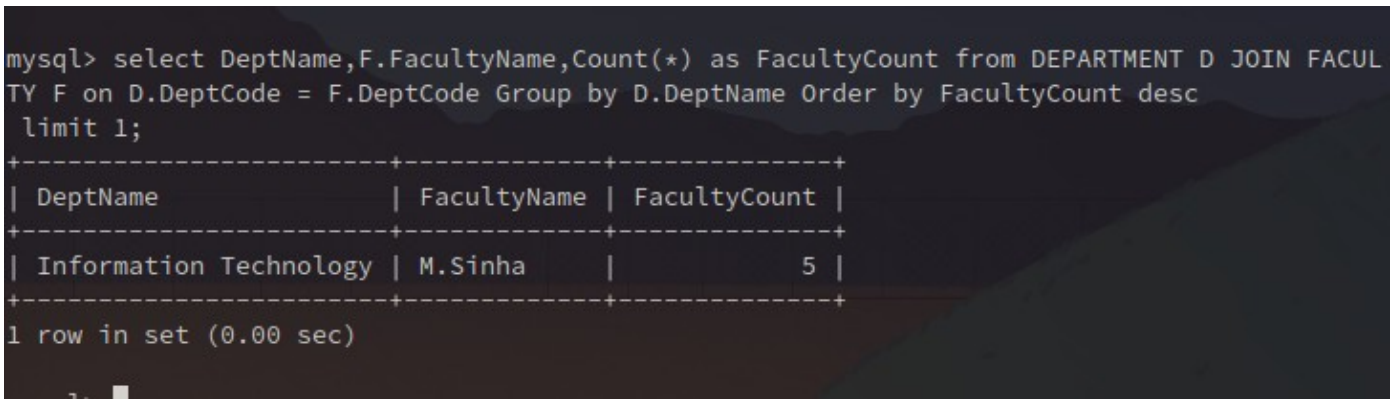
Ans: select SubjectName from SUBJECT where Department = 'CSE' and year = '3';

```
mysql> select SubjectName from SUBJECT where Department = 'CSE' and year = '3';
+-------------+
| SubjectName |
+-------------+
| DSA         |
+-------------+
1 row in set (0.00 sec)
```

Date:

16. Name the departments having highest number of faculties and display the names of faculties.

Ans: select DeptName,F.FacultyName,Count(*) as FacultyCount from DEPARTMENT D JOIN FACULTY F on D.DeptCode = F.DeptCode Group by D.DeptName Order by FacultyCount desc limit 1;



```
mysql> select DeptName,F.FacultyName,Count(*) as FacultyCount from DEPARTMENT D JOIN FACUL
TY F on D.DeptCode = F.DeptCode Group by D.DeptName Order by FacultyCount desc
 limit 1;
+----------------------+-------------+--------------+
| DeptName             | FacultyName | FacultyCount |
+----------------------+-------------+--------------+
| Information Technology | M.Sinha     |            5 |
+----------------------+-------------+--------------+
1 row in set (0.00 sec)
```

Date: **26/1/2022**

ASSIGNMENT - 6

Create a view on the STUDENT table named V_STD selecting all the columns. Run the following queries on the view.

1. **Display all data from the view.**

   Ans create view V_STD as select * from STUDENT;
   select * from V_STD;

```
mysql> create view V_STD as select * from STUDENT;
Query OK, 0 rows affected (0.29 sec)

mysql> select * from V_STD;
+--------+--------+---------+----------+----------+-----------+----------+------+------------+
| RegNo  | RollNo | Name    | Address  | PhoneNo  | YearofAdm | DeptCode | Year | BirthDate  |
+--------+--------+---------+----------+----------+-----------+----------+------+------------+
| 12315  | 123015 | Kamal   | Kashba   | 24424987 |      2003 | IT       |    3 | 1981-09-19 |
| 12424  | 124024 | Ipsita  | Kaikhali | 25739608 |      2004 | CSE      |    2 | 1982-08-15 |
| 12344  | 123044 | Biplab  | Howrah   |     NULL |      2003 | IT       |    3 | 1982-01-03 |
| 12357  | 123057 | Samik   | Barasat  | 25426742 |      2003 | IT       |    3 | 1981-07-15 |
| 12419  | 124019 | Srija   | Garia    | 24755655 |      2004 | EE       |    2 | 1982-10-25 |
| 12427  | 124027 | Saibal  | Garia    | 24753306 |      2004 | ECE      |    2 | 1983-03-22 |
| 012301 | 123001 | Ashish  | Jadavpur | 24761892 |      2003 | CSE      |    3 | 1981-06-01 |
| 012301 | 123001 | Ashish  | Jadavpur | 24761892 |      2003 | CSE      |    3 | 1981-06-01 |
| 12363  | 123011 | Bishakh | Sector V | 23371987 |      2005 | IT       |    2 | 1982-05-01 |
| 5353   |      0 | Kami    |          |     NULL |         0 | CSE      |    2 | 0000-00-00 |
+--------+--------+---------+----------+----------+-----------+----------+------+------------+
10 rows in set (0.14 sec)
```

2. Insert a new row into the view with the following data –

012363 123011 Bishakh Salt Lake 23371987 2005 IT 2 01-May-82

Ans: insert into V_STD values (012363, 123011, 'Bishakh', 'Salt Lake', 23371987,2005,'IT', 2, '1982-05-01');

```
mysql> insert into V_STD values (012363, 123011, 'Bishakh', 'Salt Lake', 23371987,
    -> 2005,'IT', 2, '1982-05-01');
Query OK, 1 row affected (0.36 sec)

mysql> select * from V_STD;
+--------+--------+---------+-----------+----------+-----------+----------+------+------------+
| RegNo  | RollNo | Name    | Address   | PhoneNo  | YearofAdm | DeptCode | Year | BirthDate  |
+--------+--------+---------+-----------+----------+-----------+----------+------+------------+
| 12315  | 123015 | Kamal   | Kashba    | 24424987 |      2003 | IT       |    3 | 1981-09-19 |
| 12424  | 124024 | Ipsita  | Kaikhali  | 25739608 |      2004 | CSE      |    2 | 1982-08-15 |
| 12344  | 123044 | Biplab  | Howrah    |     NULL |      2003 | IT       |    3 | 1982-01-03 |
| 12357  | 123057 | Samik   | Barasat   | 25426742 |      2003 | IT       |    3 | 1981-07-15 |
| 12419  | 124019 | Srija   | Garia     | 24755655 |      2004 | EE       |    2 | 1982-10-25 |
| 12427  | 124027 | Saibal  | Garia     | 24753306 |      2004 | ECE      |    2 | 1983-03-22 |
| 012301 | 123001 | Ashish  | Jadavpur  | 24761892 |      2003 | CSE      |    3 | 1981-06-01 |
| 012301 | 123001 | Ashish  | Jadavpur  | 24761892 |      2003 | CSE      |    3 | 1981-06-01 |
| 12363  | 123011 | Bishakh | Sector V  | 23371987 |      2005 | IT       |    2 | 1982-05-01 |
| 5353   |      0 | Kami    |           |     NULL |         0 | CSE      |    2 | 0000-00-00 |
| 12363  | 123011 | Bishakh | Salt Lake | 23371987 |      2005 | IT       |    2 | 1982-05-01 |
+--------+--------+---------+-----------+----------+-----------+----------+------+------------+
11 rows in set (0.00 sec)
```

3. Display data from student table to verify that the row has been inserted into the table.

Ans: select * from V_STD where Name = 'Bishakh';

```
mysql> select * from V_STD where Name = 'Bishakh';
+-------+--------+---------+-----------+----------+-----------+----------+------+------------+
| RegNo | RollNo | Name    | Address   | PhoneNo  | YearofAdm | DeptCode | Year | BirthDate  |
+-------+--------+---------+-----------+----------+-----------+----------+------+------------+
| 12363 | 123011 | Bishakh | Sector V  | 23371987 |      2005 | IT       |    2 | 1982-05-01 |
| 12363 | 123011 | Bishakh | Salt Lake | 23371987 |      2005 | IT       |    2 | 1982-05-01 |
+-------+--------+---------+-----------+----------+-----------+----------+------+------------+
2 rows in set (0.00 sec)
```

4.Update the address of Bishakh to "SectorV" & verify the change in the table.

Ans: update V_STD set Address = 'Sector V' where RegNo = '12363';
select * from V_STD where RegNo = '12363';

```
mysql> update V_STD set Address = 'Sector V' where RegNo = '12363';
Query OK, 1 row affected (0.14 sec)
Rows matched: 2  Changed: 1  Warnings: 0

mysql> select * from V_STD where RegNo = '12363';
+-------+--------+---------+----------+----------+-----------+----------+------+------------+
| RegNo | RollNo | Name    | Address  | PhoneNo  | YearofAdm | DeptCode | Year | BirthDate  |
+-------+--------+---------+----------+----------+-----------+----------+------+------------+
| 12363 | 123011 | Bishakh | Sector V | 23371987 |      2005 | IT       |    2 | 1982-05-01 |
| 12363 | 123011 | Bishakh | Sector V | 23371987 |      2005 | IT       |    2 | 1982-05-01 |
+-------+--------+---------+----------+----------+-----------+----------+------+------------+
2 rows in set (0.00 sec)
```

4(i). Create a view on student tables named V_STD_2 selecting the columns – RegNo, Name, Year, Deptcode.
Display data from the view.

Ans: create view V_STD_2 as select RegNo,Name,Year,DeptCode from STUDENT;
select * from V_STD_2;

```
mysql> create view V_STD_2 as select RegNo,Name,Year,DeptCode from STUDENT;
Query OK, 0 rows affected (0.24 sec)

mysql> select * from V_STD_2;
+--------+---------+------+----------+
| RegNo  | Name    | Year | DeptCode |
+--------+---------+------+----------+
| 12315  | Kamal   |    3 | IT       |
| 12424  | Ipsita  |    2 | CSE      |
| 12344  | Biplab  |    3 | IT       |
| 12357  | Samik   |    3 | IT       |
| 12419  | Srija   |    2 | EE       |
| 12427  | Saibal  |    2 | ECE      |
| 012301 | Ashish  |    3 | CSE      |
| 012301 | Ashish  |    3 | CSE      |
| 12363  | Bishakh |    2 | IT       |
| 5353   | Kami    |    2 | CSE      |
| 12363  | Bishakh |    2 | IT       |
+--------+---------+------+----------+
11 rows in set (0.01 sec)
```

5. Try to insert data into table through view.

Ans: insert into V_STD_2 values (5419, 'Kamisato', 2, 'CSE');

```
mysql> insert into V_STD_2 values (5419, 'Kamisato', 2, 'CSE');
Query OK, 1 row affected, 4 warnings (0.46 sec)

mysql> select * from V_STD_2;
+--------+----------+------+----------+
| RegNo  | Name     | Year | DeptCode |
+--------+----------+------+----------+
| 12315  | Kamal    |    3 | IT       |
| 12424  | Ipsita   |    2 | CSE      |
| 12344  | Biplab   |    3 | IT       |
| 12357  | Samik    |    3 | IT       |
| 12419  | Srija    |    2 | EE       |
| 12427  | Saibal   |    2 | ECE      |
| 012301 | Ashish   |    3 | CSE      |
| 012301 | Ashish   |    3 | CSE      |
| 12363  | Bishakh  |    2 | IT       |
| 12363  | Bishakh  |    2 | IT       |
| 5419   | Kamisato |    2 | CSE      |
+--------+----------+------+----------+
11 rows in set (0.00 sec)
```

6. Update the Deptcode of ‘Kamal’ to ‘IT’ through view.

Ans: update V_STD_2 set DeptCode = 'CSE' where Name = 'Kamal';

```
mysql> update V_STD_2 set DeptCode = 'CSE' where Name = 'Kamal';
Query OK, 1 row affected (0.65 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from V_STD_2;
+--------+----------+------+----------+
| RegNo  | Name     | Year | DeptCode |
+--------+----------+------+----------+
| 12315  | Kamal    |    3 | CSE      |
| 12424  | Ipsita   |    2 | CSE      |
| 12344  | Biplab   |    3 | IT       |
| 12357  | Samik    |    3 | IT       |
| 12419  | Srija    |    2 | EE       |
| 12427  | Saibal   |    2 | ECE      |
| 012301 | Ashish   |    3 | CSE      |
| 012301 | Ashish   |    3 | CSE      |
| 12363  | Bishakh  |    2 | IT       |
| 12363  | Bishakh  |    2 | IT       |
| 5419   | Kamisato |    2 | CSE      |
+--------+----------+------+----------+
11 rows in set (0.01 sec)
```

Date:

7. Delete records of students of 4th year through view.

Ans: delete from V_STD_2 where Year = 4;

```
mysql> delete from V_STD_2 where Year = 4;
Query OK, 0 rows affected (0.00 sec)

mysql> select * from V_STD_2;
+--------+----------+------+----------+
| RegNo  | Name     | Year | DeptCode |
+--------+----------+------+----------+
| 12315  | Kamal    |    3 | IT       |
| 12424  | Ipsita   |    2 | CSE      |
| 12344  | Biplab   |    3 | IT       |
| 12357  | Samik    |    3 | IT       |
| 12419  | Srija    |    2 | EE       |
| 12427  | Saibal   |    2 | ECE      |
| 012301 | Ashish   |    3 | CSE      |
| 012301 | Ashish   |    3 | CSE      |
| 12363  | Bishakh  |    2 | IT       |
| 12363  | Bishakh  |    2 | IT       |
| 5419   | Kamisato |    2 | CSE      |
+--------+----------+------+----------+
11 rows in set (0.00 sec)
```

I. Create a view named V_FACULTY consisting of columns FacultyName, DeptCode from FACULTY table and HOD from Department table.
II .Display data from V_FACULTY

Ans: create view V_FACULTY as select FACULTY.FacultyName,FACULTY.DeptCode,DEPARTMENT.HOD from FACULTY join DEPARTMENT on FACULTY.DeptCode = DEPARTMENT.DeptCode;

select * from V_FACULTY;

```
mysql> select * from V_FACULTY;
+-------------+----------+------+
| FacultyName | DeptCode | HOD  |
+-------------+----------+------+
| K.Das       | CSE      | F101 |
| M.Sinha     | IT       | F201 |
| P.sarkar    | CSE      | F101 |
| S.Mazumder  | IT       | F201 |
| S.Mondal    | CSE      | F101 |
| D.Majumdar  | IT       | F201 |
| N.Biswas    | ECE      | F506 |
| R.Paul      | EE       | F901 |
| S.Sarkar    | IT       | F201 |
| K.Das       | IT       | F201 |
| R.Roy       | EE       | F901 |
| R.Biswas    | ECE      | F506 |
+-------------+----------+------+
12 rows in set (0.06 sec)
```

8. Try to insert a new row into this view V_FACULTY.

Ans: insert into V_FACULTY(FacultyName,DeptCode) values ('B.Bas','CSE');

```
mysql> insert into V_FACULTY(FacultyName,DeptCode) values ('B.Bas','CSE');
Query OK, 1 row affected, 2 warnings (0.41 sec)

mysql> select * from V_FACULTY;
+-------------+----------+------+
| FacultyName | DeptCode | HOD  |
+-------------+----------+------+
| B.Bas       | CSE      | F101 |
| P.sarkar    | CSE      | F101 |
| S.Mondal    | CSE      | F101 |
| M.Sinha     | IT       | F201 |
| S.Mazumder  | IT       | F201 |
| D.Majumdar  | IT       | F201 |
| S.Sarkar    | IT       | F201 |
| K.Das       | IT       | F201 |
| N.Biswas    | ECE      | F506 |
| R.Biswas    | ECE      | F506 |
| R.Paul      | EE       | F901 |
| R.Roy       | EE       | F901 |
+-------------+----------+------+
12 rows in set (0.00 sec)
```

9. Try to update the DeptCode of a CSE faculty to IT.

Ans: update V_FACULTY set DeptCode = 'IT' where FacultyName = 'B.Bas';

```
mysql> update V_FACULTY set DeptCode = 'IT' where FacultyName = 'B.Bas';
Query OK, 1 row affected (0.10 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from V_FACULTY;
+-------------+----------+------+
| FacultyName | DeptCode | HOD  |
+-------------+----------+------+
| P.sarkar    | CSE      | F101 |
| S.Mondal    | CSE      | F101 |
| B.Bas       | IT       | F201 |
| M.Sinha     | IT       | F201 |
| S.Mazumder  | IT       | F201 |
| D.Majumdar  | IT       | F201 |
| S.Sarkar    | IT       | F201 |
| K.Das       | IT       | F201 |
| N.Biswas    | ECE      | F506 |
| R.Biswas    | ECE      | F506 |
| R.Paul      | EE       | F901 |
| R.Roy       | EE       | F901 |
+-------------+----------+------+
12 rows in set (0.00 sec)
```

Date: **27/01/2022**

ASSIGNMENT - 7

Consider the Employee table

emp_id	emp_name	job_name	manager_id	hire_date	salary	commission	dep_id
68319	KAYLING	PRESIDENT		1991-11-18	6000.00		1001
66928	BLAZE	MANAGER	68319	1991-05-01	2750.00		3001
67832	CLARE	MANAGER	68319	1991-06-09	2550.00		1001
65646	JONAS	MANAGER	68319	1991-04-02	2957.00		2001
67858	SCARLET	ANALYST	65646	1997-04-19	3100.00		2001
69062	FRANK	ANALYST	65646	1991-12-03	3100.00		2001
63679	SANDRINE	CLERK	69062	1990-12-18	900.00		2001
64989	ADELYN	SALESMAN	66928	1991-02-20	1700.00	400.00	3001
65271	WADE	SALESMAN	66928	1991-02-22	1350.00	600.00	3001

Department Table

dep_id	dep_name	dep_location
1001	FINANCE	SYDNEY
2001	AUDIT	MELBOURNE
3001	MARKETING	PERTH
4001	PRODUCTION	BRISBANE

Order table

Emp_id	Order_id	Amount	Order_Date
64989	5001	50000	25-06-2021
64989	5010	65000	20-04-2020
64989	5004	45000	21-03-2021

Solve using SQL query

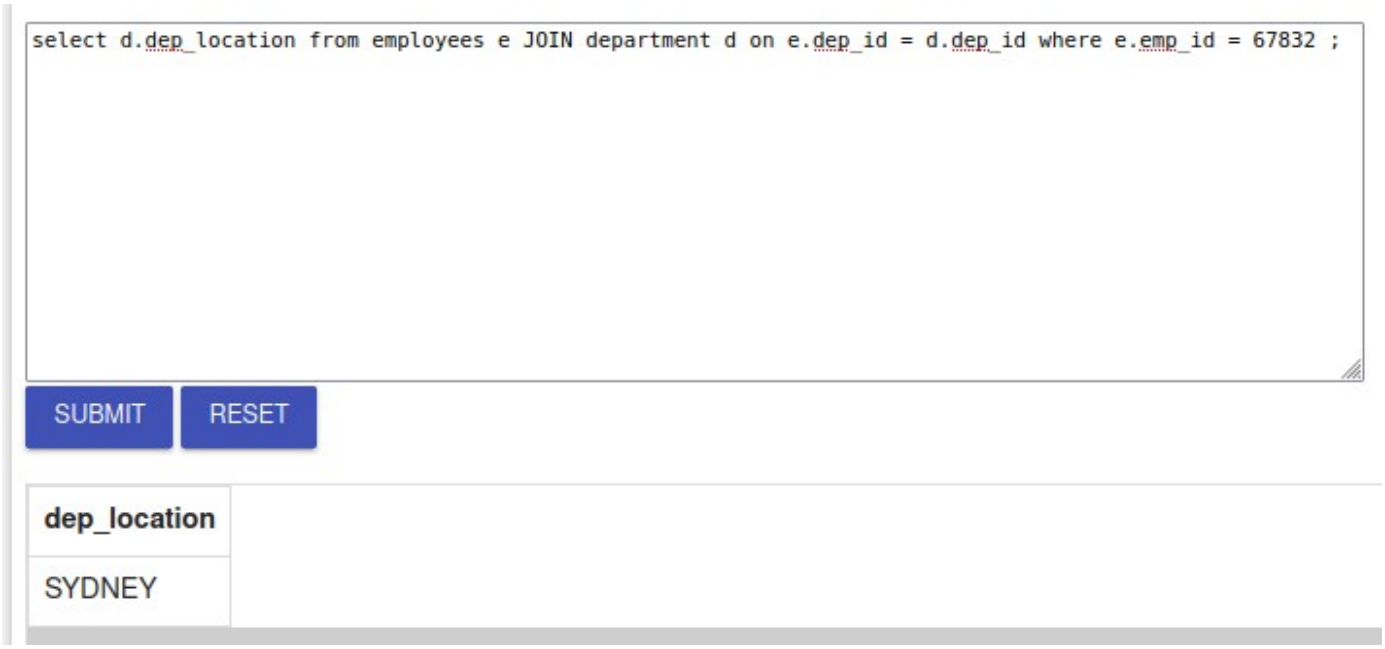
1. List the employee names along with the department name and salary.

Ans: select emp_name,salary, d.dep_name from employees e,department d WHERE e.dep_id = d.dep_id;

emp_name	salary	dep_name
KAYLING	6000.00	FINANCE
BLAZE	2750.00	MARKETING
CLARE	2550.00	FINANCE
JONAS	2957.00	AUDIT
ADELYN	1700.00	MARKETING
WADE	1350.00	MARKETING
MADDEN	1350.00	MARKETING
TUCKER	1600.00	MARKETING
ADNRES	1200.00	AUDIT
JULIUS	1050.00	MARKETING
MARKER	1400.00	FINANCE
SCARLET	3100.00	AUDIT
FRANK	3100.00	AUDIT
SANDRINE	900.00	AUDIT

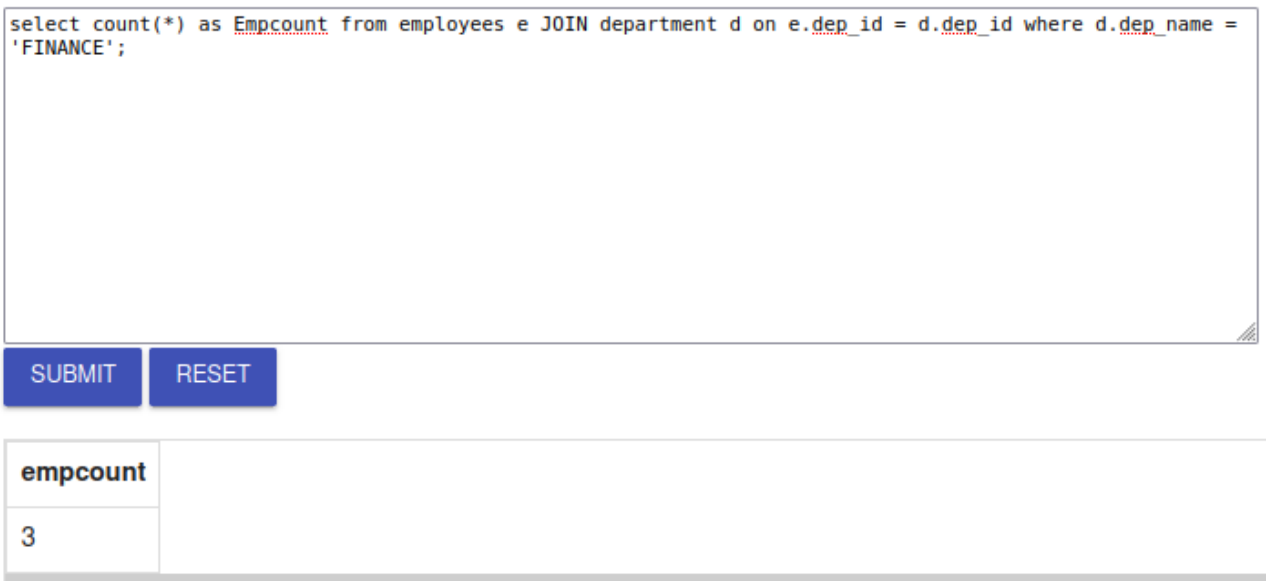
2. Write the location of the emp_id=67832

Ans: select d.dep_location from employees e JOIN department d on e.dep_id = d.dep_id where e.emp_id = 67832 ;



3. How many employees are working in the finance department?

Ans: select count(*) as Empcount from employees e JOIN department d on e.dep_id = d.dep_id where d.dep_name = 'FINANCE';



4. Write the name of the manager of Scarlet.

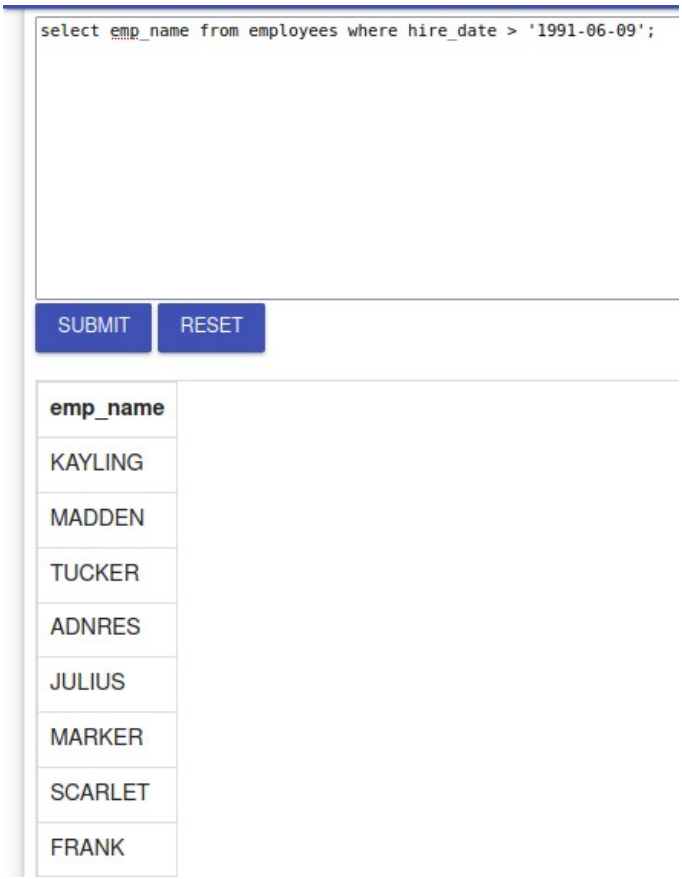
Ans: //In Question 4 there's no attribute named Manager name in the given table(s). only manager id, for manager id. //

```
select manager_id from employees where emp_name = 'SCARLET';
```

Date:

5. List the employees who have joined after Clare.

Ans: select emp_name from employees where hire_date > '1991-06-09';



emp_name
KAYLING
MADDEN
TUCKER
ADNRES
JULIUS
MARKER
SCARLET
FRANK

6. Name the employee having highest salary.

Ans: select emp_name from employees where salary = (select Max(salary) from employees);

```
select emp_name from employees where salary = (select Max(salary) from employees);
```

SUBMIT RESET

emp_name
KAYLING

7. List the details of the departments where maximum number of employees are working.

Ans: select dep_name from department JOIN employees on department.dep_id = employees.dep_id group by department.dep_name;

```
select dep_name from department JOIN employees on department.dep_id = employees.dep_id group by
department.dep_name;
```

SUBMIT RESET

dep_name
AUDIT
MARKETING
FINANCE

8. Name and highest salary of each department.

Ans: SELECT d.dep_name,max(salary) from employees e JOIN department d on e.dep_id = d.dep_id group by d.dep_name;

```
SELECT d.dep_name,max(salary) from employees e JOIN department d on e.dep_id = d.dep_id group by
d.dep_name;
```

SUBMIT RESET

dep_name	max
AUDIT	3100.00
MARKETING	2750.00
FINANCE	6000.00

9. Name the salesman who has not made any order.

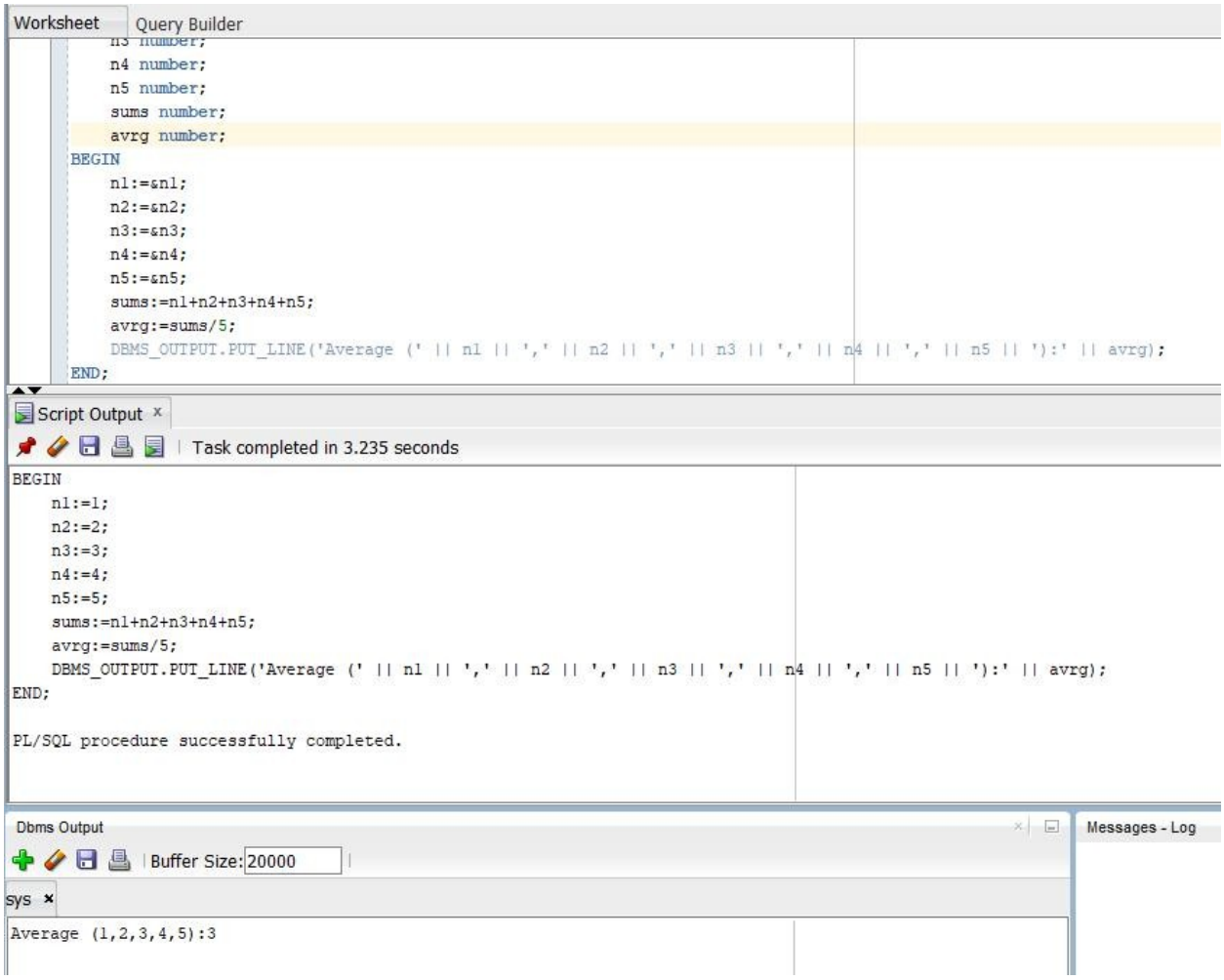
Ans: //In Question 9 No table/attribute provided for Salesman//

10 Write name department and order_id of the all the employees.

Date: 28/01/2022

ASSIGNMENT - 8

1. To read several input values and compute their average



```
Worksheet | Query Builder
    n3 number;
    n4 number;
    n5 number;
    sums number;
    avrg number;
BEGIN
    n1:=&n1;
    n2:=&n2;
    n3:=&n3;
    n4:=&n4;
    n5:=&n5;
    sums:=n1+n2+n3+n4+n5;
    avrg:=sums/5;
    DBMS_OUTPUT.PUT_LINE('Average (' || n1 || ',' || n2 || ',' || n3 || ',' || n4 || ',' || n5 || '):' || avrg);
END;

Script Output
Task completed in 3.235 seconds

BEGIN
    n1:=1;
    n2:=2;
    n3:=3;
    n4:=4;
    n5:=5;
    sums:=n1+n2+n3+n4+n5;
    avrg:=sums/5;
    DBMS_OUTPUT.PUT_LINE('Average (' || n1 || ',' || n2 || ',' || n3 || ',' || n4 || ',' || n5 || '):' || avrg);
END;

PL/SQL procedure successfully completed.

Dbms Output
Buffer Size: 20000
Messages - Log
sys
Average (1,2,3,4,5):3
```

2. To take radius as input and calculate area and perimeter of a circle. Insert radius, area and perimeter in a table (already created before)

```
DECLARE
    area   NUMBER;
    perimeter   NUMBER;
    radius NUMBER;
    pi CONSTANT NUMBER(3, 2) := 3.14;
BEGIN
    radius:=&radius;
    area := pi * radius * radius;
    perimeter := 2 * pi * radius;
    dbms_output.Put_line('Area = ' || area);
    dbms_output.Put_line('Perimeter = ' || perimeter);
    insert into circle(radius,area,perimeter) values(radius,area,perimeter);
END;
```

Script Output

Task completed in 2.488 seconds

```
    radius NUMBER;
    pi CONSTANT NUMBER(3, 2) := 3.14;
BEGIN
    radius:=5;
    area := pi * radius * radius;
    perimeter := 2 * pi * radius;
    dbms_output.Put_line('Area = ' || area);
    dbms_output.Put_line('Perimeter = ' || perimeter);
    insert into circle(radius,area,perimeter) values(radius,area,perimeter);
END;

PL/SQL procedure successfully completed.
```

Dbms Output

Buffer Size: 20000

```
Area = 78.5
Perimeter = 31.4
```

sys.sql | Welcome Page | CIRCLE

Columns | Data | Model | Constraints | Grants | Statistics | Triggers | Flashbac

Sort.. | Filter:

	RADIUS	AREA	PERIMETER
1	5	78.5	31.4

3. To display the number of faculties in each department. Also update the salary by 10% if number of faculties is less than 10 in the department, else update salary by 5%.

EDIT	FACULTYID	NAME	DEPT	SALARY
	202201	S. Roy	IT	35000
	202203	P. Das	IT	43000
	202204	F. Ahmed	IT	50000
	202208	W. Bagchi	IT	52000
	202215	A. Das	CSE	27000
	202251	L. Roy	CSE	45000
	202241	D. Agarwal	CSE	35000
	202255	P. Ghosh	IT	33000
	202266	A. Ghoshal	IT	40000
	202233	H. Verma	IT	40000
	202274	A. Khan	IT	28000
	202219	S. George	IT	30000
	202237	S. Dam	IT	30000

row(s) 1 - 13 of 13

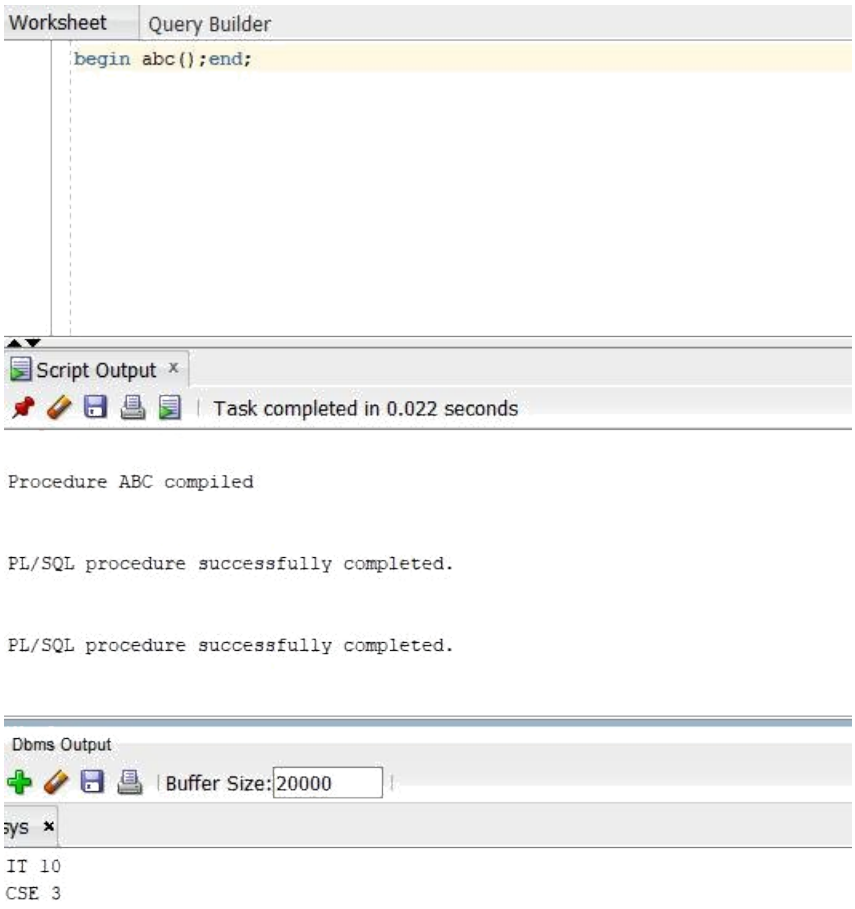
Worksheet Query Builder

```
create or replace procedure abc
is
cursor c1 is
select dept,count(dept) as ct from faculties group by dept;
rec1 c1%rowtype;
begin
for rec1 in c1 loop
dbms_output.put_line(rec1.dept || ' ' ||rec1.ct);
end loop;
end;
```

Script Output

Task completed in 0.034 seconds

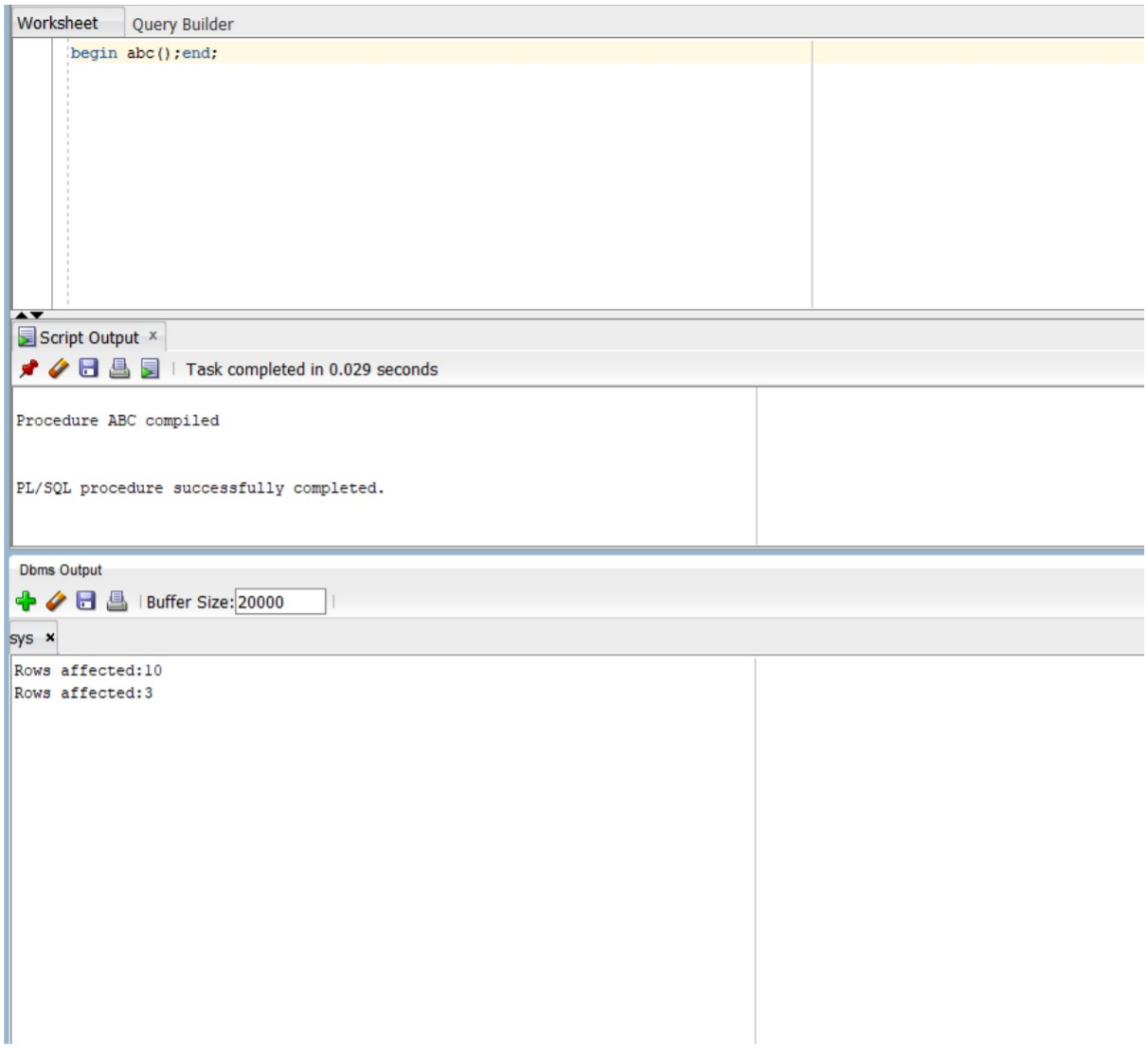
```
Procedure ABC compiled


PL/SQL procedure successfully completed.


Procedure ABC compiled
```


Worksheet
Query Builder
begin abc();end;
Script Output
Task completed in 0.022 seconds
Procedure ABC compiled
PL/SQL procedure successfully completed.
PL/SQL procedure successfully completed.
Dbms Output
Buffer Size: 20000
sys
IT 10
CSE 3

Date:

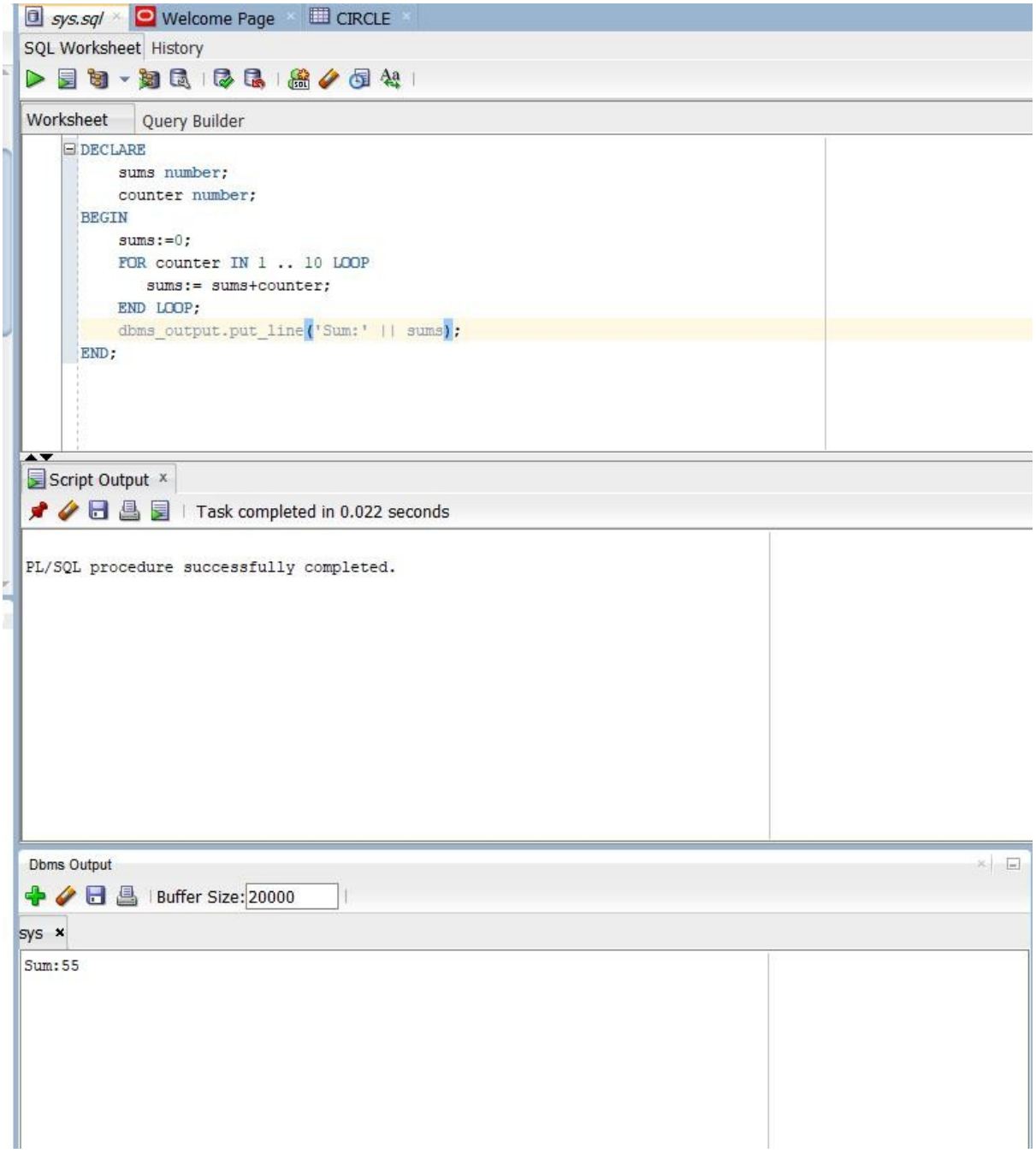
Worksheet | Query Builder

```
create or replace procedure abc
is
cursor c1 is
select dept,count(dept) as ct from faculties group by dept;
rec1 c1%rowtype;
var_rows number;
begin
for rec1 in c1 loop
if rec1.ct < 10 then
 update faculties set salary=salary+(salary*10/100) where dept=rec1.dept;
 if SQL%FOUND then
    var_rows := SQL%ROWCOUNT;
    dbms_output.put_line('Rows affected:'||var_rows);
    end if;
else
 update faculties set salary=salary+(salary*5/100) where dept=rec1.dept;
  if SQL%FOUND then
    var_rows := SQL%ROWCOUNT;
    dbms_output.put_line('Rows affected:'||var_rows);
    end if;
end if;
end loop;
end;
```

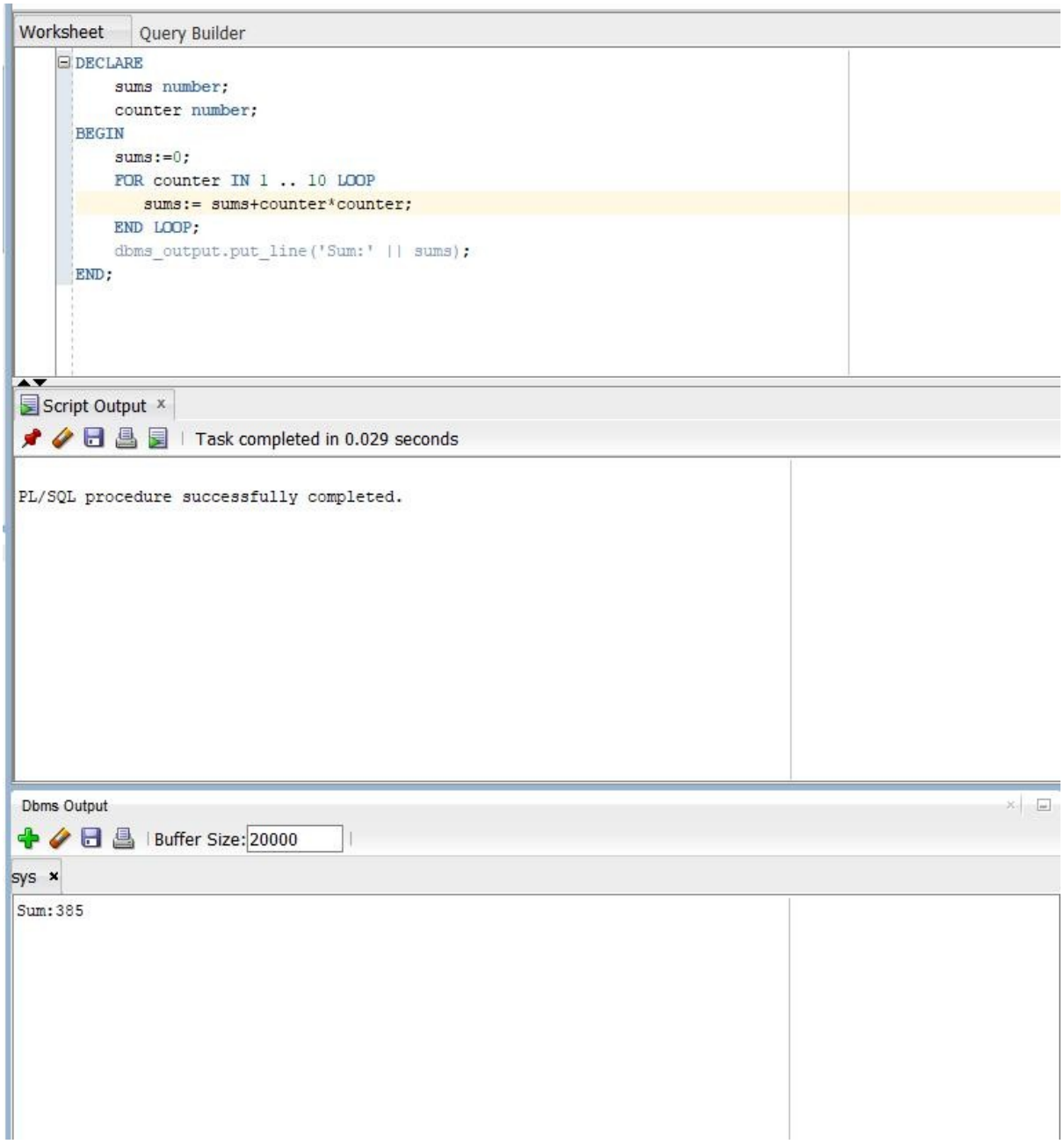


	FACULTYID	NAME	DEPT	SALARY
1	202201	S. Roy	IT	36750
2	202203	P. Das	IT	45150
3	202204	F. Ahmed	IT	52500
4	202208	W. Bagchi	IT	54600
5	202215	A. Das	CSE	29700
6	202251	L. Roy	CSE	49500
7	202241	D. Agarwal	CSE	38500
8	202255	P. Ghosh	IT	34650
9	202266	A. Ghoshal	IT	42000
10	202233	H. Verma	IT	42000
11	202274	A. Khan	IT	29400
12	202219	S. George	IT	31500
13	202237	S. Dam	IT	31500

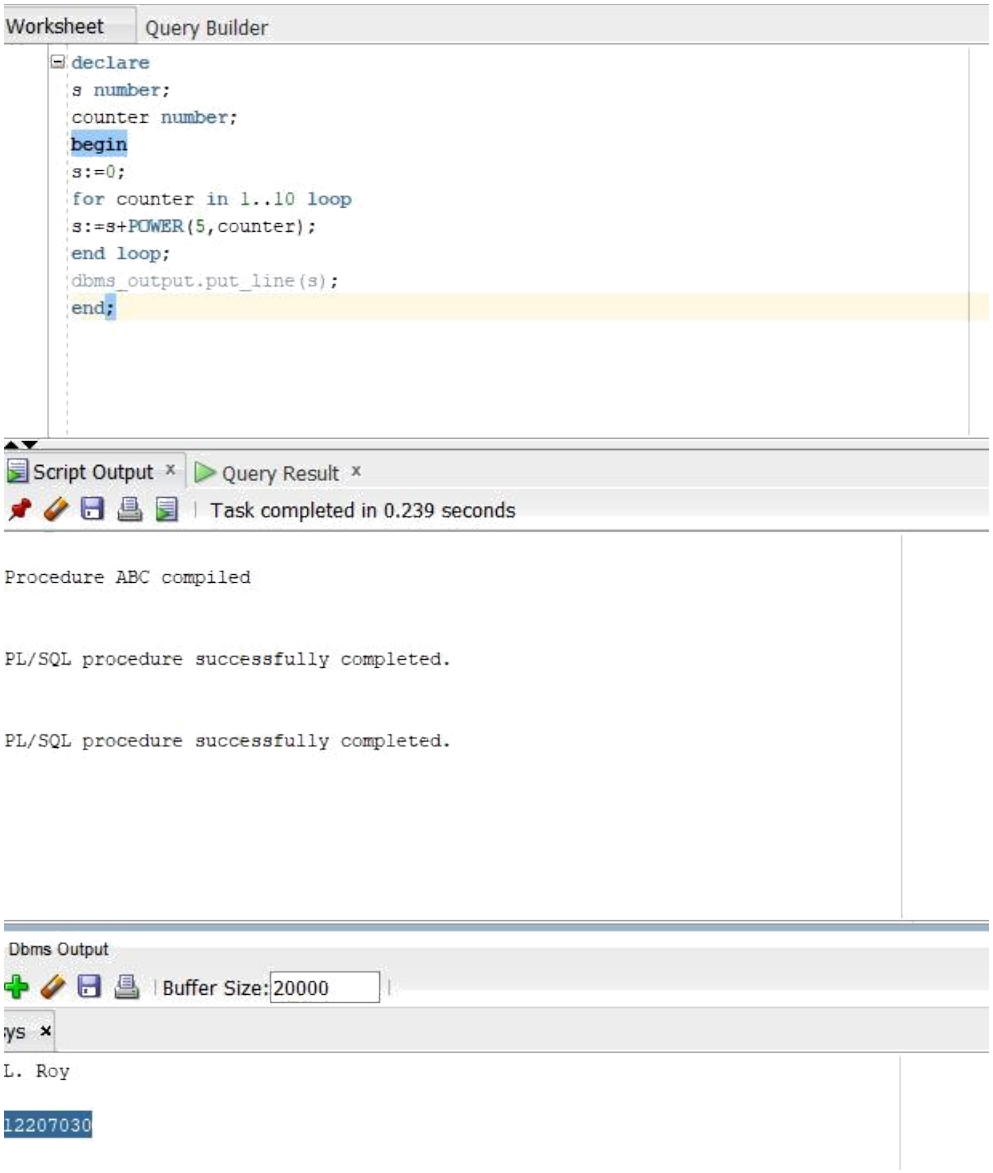
4. Find the sum upto 10th term of the following series: 1+2+3+…….



1 +4+9+.....


Worksheet
Query Builder
DECLARE
sums number;
counter number;
BEGIN
sums:=0;
FOR counter IN 1 .. 10 LOOP
sums:= sums+counter*counter;
END LOOP;
dbms_output.put_line('Sum:' || sums);
END;
Script Output
Task completed in 0.029 seconds
PL/SQL procedure successfully completed.
Dbms Output
Buffer Size: 20000
sys
Sum:385

5+25+125+..



5. Find the sum of the digits of a number .(number is user input)

Worksheet Query Builder

```
DECLARE
    n number;
    sums number;
    d number;
BEGIN
    n:=&n;
    sums:=0;
    WHILE n!=0 LOOP
        d:=MOD(n,10);
        sums:=sums+d;
        n:=Trunc(n/10);
    END LOOP;
    DBMS_OUTPUT.PUT_LINE('SUM OF DIGITS: ' || sums);
END;
```

Script Output | Task completed in 1.637 seconds

```
BEGIN
    n:=123;
    sums:=0;
    WHILE n!=0 LOOP
        d:=MOD(n,10);
        sums:=sums+d;
        n:=Trunc(n/10);
    END LOOP;
    DBMS_OUTPUT.PUT_LINE('SUM OF DIGITS: ' || sums);
END;

PL/SQL procedure successfully completed.
```

Dbms Output | Buffer Size: 20000

sys

```
SUM OF DIGITS: 6
```

6. Find the sum of first n numbers using while loop & for loop.

Worksheet Query Builder

```
DECLARE
    n number;
    sums number;
BEGIN
    n:=&n;
    sums:=0;
    WHILE n!=0 LOOP
        sums:=sums+n;
        n:=n-1;
    END LOOP;
    DBMS_OUTPUT.PUT_LINE('Sum of first n numbers using while loop: ' || sums);
END;
```

Script Output | Task completed in 1.51 seconds

```
    sums number;
BEGIN
    n:=5;
    sums:=0;
    WHILE n!=0 LOOP
        sums:=sums+n;
        n:=n-1;
    END LOOP;
    DBMS_OUTPUT.PUT_LINE('Sum of first n numbers using while loop: ' || sums);
END;

PL/SQL procedure successfully completed.
```

Dbms Output | Buffer Size: 20000

sys

```
Sum of first n numbers using while loop: 15
```

7. Find the 3rd maximum salary among the faculties.

Worksheet Query Builder

```
create or replace procedure abc
is cursor c1 is
select name, rownum as r from(select name from faculties order by salary desc);
rec1 c1%rowtype;
begin
for rec1 in c1 loop
if rec1.r=3 then
dbms_output.put_line(rec1.name);
end if;
end loop;
end;
```

Script Output × Query Result ×

Task completed in 0.022 seconds

```
Procedure ABC compiled
```

Worksheet Query Builder

```
begin abc();end;
```

Script Output × Query Result ×

Task completed in 0.022 seconds

```
Procedure ABC compiled


PL/SQL procedure successfully completed.
```

Dbms Output

Buffer Size: 20000

sys ×

```
L. Roy
```