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Subject: DBMS LAB

ASSIGNEMENT -5

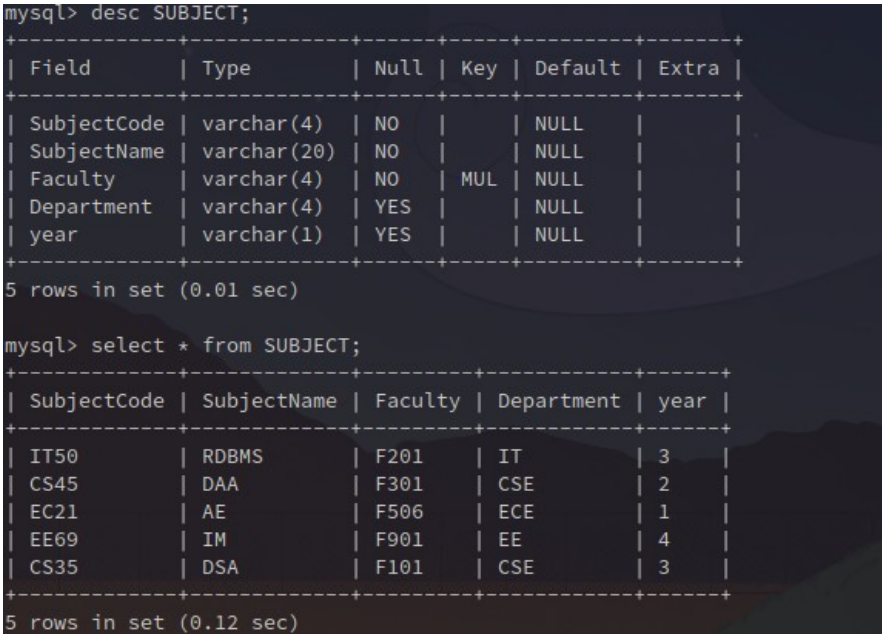
1.Create table **SUBJECT** and insert appropriate values.

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:

```
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';

```
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)
```

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)
```