Lab Assignment-2

Q. Create the following tables and answer the queries: (Take appropriate data types and relationships to define the columns and then insert relevant data).

1. SUPPLIER(SNO, SNAME, STATUS, CITY)
2. PARTS(PNO, PNAME, COLOR, WEIGHT, CITY)
3. PROJECT(JNO, JNAME, CITY)
4. SPJ(SNO, PNO, JNO, QTY)

Queries and Outputs of the Table

```
mysql> create table supplier(sno char(4), sname varchar(20), status varchar(20), city varchar(20));
Query OK, 0 rows affected (0.01 sec)

mysql> insert into supplier values('s1', 'Sanskriti', 'Active', 'Delhi');
Query OK, 1 row affected (0.00 sec)

mysql> insert into supplier values('s2', 'Karan', 'Inactive', 'Chennai');
Query OK, 1 row affected (0.00 sec)

mysql> insert into supplier values('s3', 'Atharva', 'Active', 'Bangalore');
Query OK, 1 row affected (0.00 sec)

mysql> insert into supplier values('s4', 'Samaira', 'Active', 'Mumbai');
Query OK, 1 row affected (0.00 sec)

mysql> select * from supplier;
+------+-----------+---------+-----------+
| sno  | sname     | sstatus | city      |
+------+-----------+---------+-----------+
| s1   | Sanskriti | Active  | Delhi     |
| s2   | Karan     | Inactive| Chennai   |
| s3   | Atharva   | Active  | Bangalore |
| s4   | Samaira   | Active  | Mumbai    |
+------+-----------+---------+-----------+
4 rows in set (0.00 sec)
```

```
mysql> create table parts(pno char(4), pname varchar(20), color varchar(20), weight numeric(20), city va
rchar(20));
Query OK, 0 rows affected (0.01 sec)

mysql> insert into parts values('p1','part1','red',14.2,'Delhi');
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> insert into parts values('p2','part2','blue',15.6,'Chennai');
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> insert into parts values('p3','part3','green',5.3,'Bangalore');
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> insert into parts values('p4','part4','yellow',44.2,'Chandigarh');
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> select * from parts;
+------+-------+--------+--------+------------+
| pno  | pname | color  | weight | city       |
+------+-------+--------+--------+------------+
| p1   | part1 | red    |     14 | Delhi      |
| p2   | part2 | blue   |     16 | Chennai    |
| p3   | part3 | green  |      5 | Bangalore  |
| p4   | part4 | yellow |     44 | Chandigarh |
+------+-------+--------+--------+------------+
4 rows in set (0.00 sec)
```

```
mysql> create table project(jno char(4), jname varchar(20), city varchar(20));
Query OK, 0 rows affected (0.01 sec)

mysql> insert into project values('j1','project1','Delhi');
Query OK, 1 row affected (0.00 sec)

mysql> insert into project values('j2','project2','Delhi');
Query OK, 1 row affected (0.00 sec)

mysql> insert into project values('j3','project3','Bangalore');
Query OK, 1 row affected (0.00 sec)

mysql> insert into project values('j4','project4','Chandigarh');
Query OK, 1 row affected (0.00 sec)

mysql> select * from project;
+------+----------+------------+
| jno  | jname    | city       |
+------+----------+------------+
| j1   | project1 | Delhi      |
| j2   | project2 | Delhi      |
| j3   | project3 | Bangalore  |
| j4   | project4 | Chandigarh |
+------+----------+------------+
4 rows in set (0.00 sec)
```

```
mysql> create table spj(sno char(4), pno char(4), jno char(4), qty int);
Query OK, 0 rows affected (0.01 sec)

mysql> insert into spj values('s1','p1','j2',2);
Query OK, 1 row affected (0.01 sec)

mysql> insert into spj values('s2','p1','j1',3);
Query OK, 1 row affected (0.00 sec)

mysql> insert into spj values('s1','p3','j3',2);
Query OK, 1 row affected (0.00 sec)

mysql> insert into spj values('s3','p4','j4',4);
Query OK, 1 row affected (0.00 sec)

mysql> insert into spj values('s2','p2','j4',1);
Query OK, 1 row affected (0.00 sec)

mysql> insert into spj values('s4','p3','j3',3);
Query OK, 1 row affected (0.00 sec)

mysql> insert into spj values('s3','p3','j1',4);
Query OK, 1 row affected (0.00 sec)

mysql> insert into spj values('s4','p4','j2',5);
Query OK, 1 row affected (0.00 sec)

mysql> select * from spj;
+------+------+------+------+
| sno  | pno  | jno  | qty  |
+------+------+------+------+
| s1   | p1   | j2   |    2 |
| s2   | p1   | j1   |    3 |
| s1   | p3   | j3   |    2 |
| s3   | p4   | j4   |    4 |
| s2   | p2   | j4   |    1 |
| s4   | p3   | j3   |    3 |
| s3   | p3   | j1   |    4 |
| s4   | p4   | j2   |    5 |
+------+------+------+------+
8 rows in set (0.00 sec)
```

SQL Queries:

1. Get sno values for suppliers who supply project j1.

```
mysql> select sno from spj where jno='j1';
+------+
| sno  |
+------+
| s2   |
| s3   |
+------+
2 rows in set (0.00 sec)
```

2. Get sno values for suppliers who supply project j1 with part p1.

```
mysql> select sno from spj where jno='j1' and pno='p1';
+------+
| sno  |
+------+
| s2   |
+------+
1 row in set (0.00 sec)
```

3. Get jname values for projects supplied by supplier s1.

```
mysql> select jname from project, spj where sno='s1' and project.jno=spj.jno;
+----------+
| jname    |
+----------+
| project2 |
| project3 |
+----------+
2 rows in set (0.00 sec)
```

4. Get color values for parts supplied by supplier s1.

```
mysql> select color from parts, spj where sno='s1' and parts.pno=spj.pno;
+-------+
| color |
+-------+
| red   |
| green |
+-------+
2 rows in set (0.00 sec)
```

5. Get pno values for parts supplied to any project in London.

```
mysql> select parts.pno from parts, spj, project where project.city='Delhi' and parts.pno=spj.pno and pr
oject.jno=spj.jno;
+------+
| pno  |
+------+
| p1   |
| p1   |
| p3   |
| p4   |
+------+
4 rows in set (0.00 sec)
```

6. Get sno values for suppliers who supply project j1 with a red part.

```
mysql> select sno from spj, parts where parts.color='red' and jno='j2' and spj.pno=parts.pno;
+------+
| sno  |
+------+
| s1   |
+------+
1 row in set (0.00 sec)
```

7. Get sno values for suppliers who supply a London or Paris project with a red part.

```
mysql> select sno from spj, parts, project where parts.color='red' and (project.city='Delhi' or project.
city='Chennai') and parts.pno=spj.pno and project.jno=spj.jno;
+------+
| sno  |
+------+
| s2   |
| s1   |
+------+
2 rows in set (0.00 sec)
```

8. Get pno values for parts supplied to any project by a supplier in the same city.

```
mysql> select parts.pno from parts, spj, project where parts.city=project.city and parts.pno=spj.pno and
 project.jno=spj.jno;
+------+
| pno  |
+------+
| p1   |
| p1   |
| p3   |
| p4   |
| p3   |
+------+
5 rows in set (0.00 sec)
```

9. Get pno values for parts supplied to any project in London by a supplier in London.

```
mysql> select parts.pno from parts, spj, project where parts.city='Chandigarh' and project.city='Chandig
arh' and parts.pno=spj.pno and project.jno=spj.jno;
+------+
| pno  |
+------+
| p4   |
+------+
1 row in set (0.00 sec)
```

10. Get jno values for projects supplied by at least one supplier not in the same city.

```
mysql> select distinct(project.jno) from project, supplier, spj where supplier.city!=project.city and su
pplier.sno=spj.sno and spj.jno=project.jno;
+------+
| jno  |
+------+
| j3   |
| j4   |
| j1   |
| j2   |
+------+
4 rows in set (0.00 sec)
```

11. Get all pairs of city values such that a supplier in the first city supplies a project in the second city.

```
mysql> select distinct supplier.city, project.city from supplier, project, spj where spj.sno=supplier.sn
o and spj.jno=project.jno and project.city!=supplier.city;
+-----------+------------+
| city      | city       |
+-----------+------------+
| Bangalore | Delhi      |
| Chennai   | Delhi      |
| Mumbai    | Delhi      |
| Mumbai    | Bangalore  |
| Delhi     | Bangalore  |
| Chennai   | Chandigarh |
| Bangalore | Chandigarh |
+-----------+------------+
7 rows in set (0.00 sec)
```

12. Get sno values for suppliers who supply the same part to all projects.

```
mysql> SELECT SNO FROM SPJ
    -> GROUP BY SNO, PNO
    -> HAVING COUNT(DISTINCT JNO) = (SELECT COUNT(*) FROM PROJECT);
Empty set (0.01 sec)
```

13. Get pno values for parts supplied to all projects in Delhi.

```
mysql> select parts.pno from parts, project, spj where parts.pno=spj.pno and spj.jno=project.jno and pro
ject.city='Delhi';
+------+
| pno  |
+------+
| p1   |
| p1   |
| p3   |
| p4   |
+------+
4 rows in set (0.00 sec)
```

14. Get sname values for suppliers who supplies at least one red part to any project.

```
mysql> select distinct(supplier.sname) from supplier, parts, spj where supplier.sno=spj.sno and parts.pn
o=spj.pno and parts.color='red';
+-----------+
| sname     |
+-----------+
| Sanskriti |
| Karan     |
+-----------+
2 rows in set (0.00 sec)
```

15. Get total quantity of part p1 supplied by supplier s1.

```
mysql> select count(pno) as total_quantity from spj where sno='s1' and pno='p1';
+----------------+
| total_quantity |
+----------------+
|              1 |
+----------------+
1 row in set (0.00 sec)
```

16. Get the total number of projects supplied by supplier s3.

```
mysql> select count(jno) as total_projects from spj where sno='s3';
+----------------+
| total_projects |
+----------------+
|              2 |
+----------------+
1 row in set (0.00 sec)
```

17. Change color of all red parts to orange.

```
mysql> update parts set color='orange' where color='red'; select * from parts;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

+------+-------+--------+--------+------------+
| pno  | pname | color  | weight | city       |
+------+-------+--------+--------+------------+
| p1   | part1 | orange |     14 | Delhi      |
| p2   | part2 | blue   |     16 | Chennai    |
| p3   | part3 | green  |      5 | Bangalore  |
| p4   | part4 | yellow |     44 | Chandigarh |
+------+-------+--------+--------+------------+
4 rows in set (0.00 sec)
```

18. Get sname values for suppliers who supply to both projects j1 and j2.

```
mysql> select distinct(sname) from supplier, spj where supplier.sno=spj.sno and (spj.jno='j1' or spj.jno
='j2');
+-----------+
| sname     |
+-----------+
| Sanskriti |
| Karan     |
| Atharva   |
| Samaira   |
+-----------+
4 rows in set (0.00 sec)
```

19. Get all city, pno, city triples such that a supplier in the first city supplies the specified part to a project in the second city.

```
mysql> SELECT DISTINCT S.CITY AS SupplierCity, SPJ.PNO, PJ.CITY AS ProjectCity
    -> FROM SUPPLIER S
    -> INNER JOIN SPJ ON S.SNO = SPJ.SNO
    -> INNER JOIN PARTS P ON SPJ.PNO = P.PNO
    -> INNER JOIN PROJECT PJ ON SPJ.JNO = PJ.JNO
    -> WHERE S.CITY <> PJ.CITY AND P.PNO = 'p1';
+--------------+------+-------------+
| SupplierCity | PNO  | ProjectCity |
+--------------+------+-------------+
| Chennai      | p1   | Delhi       |
+--------------+------+-------------+
```

20. Get jnames for those project which are supplied by supplier XYZ.

```
mysql> select distinct(jname) from project, spj where project.jno=spj.jno and spj.sno='s2';
+----------+
| jname    |
+----------+
| project1 |
| project4 |
+----------+
2 rows in set (0.00 sec)
```