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SQL Exercise 1

1. Create the table SEMP with the following structure:-

EMPNO

CHAR(4)

EMPNAME

CHAR(20)

BASIC FLOAT

DEPTNO

CHAR(2)

DEPTHEAD

CHAR(4)

2. Create the table SDEPT with the following structure:-

DEPTNO

CHAR(2)

DEPTNAME CHAR(15)

3. Insert into the SDEPT table the following values:-

10, Development

20, Training

4. Insert into the SEMP table the following values:-

0001, SUNIL, 6000, 10

0002, HIREN, 8000, 20

0003, ALI, 4000, 10, 0001

0004, GEORGE, 6000, 0002

Create S, P, J, SPJ tables as specified below and insert a few rows in each table:-

SUPPLIER

(S#, Sname, Status, City)

-

S

```
CREATE TABLE SUPPLIER (
   ->    `S#` VARCHAR(10) PRIMARY KEY,
   ->    Sname VARCHAR(50),
   ->    Status INT,
   ->    City VARCHAR(50)
   -> );
```

PARTS

(P#, Pname, Color, Weight, City)

-

P

CREATE TABLE PARTS (

-> `P#` VARCHAR(10) PRIMARY KEY,

-> Pname VARCHAR(50),

-> Color VARCHAR(50),

-> Weight VARCHAR(50),

-> City VARCHAR(50));

PROJECTS

(J#, Jname, City)

-

J

CREATE TABLE PROJECTS (`J#` VARCHAR(10) PRIMARY KEY,Jname VARCHAR(50),City VARCHAR(50));

SUPPLIER-PARTS-PROJECT

(S#, P#, J#, Qty)

create table SJP(

`S#` varchar(10),

`P#` varchar(20),

`J#` varchar(30),

Qty int);

-

SPJ

Sample data for S# column:- ‘S1’, ‘S2’, ‘S3’, etc.

Sample data for P# column:- ‘P1’, ‘P2’, ‘P3’, etc.

Sample data for J# column:- ‘J1’, ‘J2’, ‘J3’, etc.

Sample data for Status column:- 10, 20, 30, etc.

Write the SELECT queries to do the following:-

5. Display all the data from the S table.

```
select * from SUPPLIER;
```

6. Display only the S# and SNAME fields from the S table.

```
select sname from SUPPLIER;
```

7. Display the PNAME and COLOR from the P table for the CITY=”London”.

```
select pname, color from parts
    -> where city ='London';
+-------+-------+
| pname | color |
+-------+-------+
| Part4 | Black |
| Part5 | Green |
+-------+-------+
```

8. Display all the Suppliers from London.

```
select * from SUPPLIER
```

```
    -> where city ='London';
+----+-------+--------+--------+
| S# | Sname | Status | City   |
+----+-------+--------+--------+
| S4 | Ravi  |     40 | London |
| S7 | Abhi  |     23 | London |
+----+-------+--------+--------+
```

9. Display all the Suppliers from Paris or Athens.

```
Select * from suppliers
Where city in( 'Paris'  ,' Athens' );
```

10. Display all the Projects in Athens.

```
Select * from Projects
Where city = ' Athens' ;
```

11. Display all the Partnames with the weight between 12 and 14 (inclusive of both).

```
Select pname from  parts
Where  weight between 12 and 14 ;
```

12. Display all the Suppliers with a Status greater than or equal to 20.

```
Select * from Suppliers
Where  ststus >=20;
```

13. Display all the Suppliers except the Suppliers from London.

```
Select * from Suppliers
Where city !=London;
```

14. Display only the Cities from where the Suppliers come from.

Select distinct city from Suppliers ;

15. Assuming that the Part Weight is in GRAMS, display the same in MILLIGRAMS and KILOGRAMS.

```
select  Pname,Weight,
Weight * 1000 MILLIGRAMS ,
Weight / 1000 KILOGRAM
 from parts;
```

SQL Exercise 2

1. Display the Supplier table in the descending order of CITY.

```
Select * from SUPPLIER
Order by city desc;
```

2. Display the Part Table in the ascending order of CITY and within the city in the ascending order of Part names.

```
Select * from parts
Order by  city asc,pname asc;
```

2. Display all the Suppliers with a status between 10 and 20.

```
Select * from Supplier
Where status between 10 and 20;
```

3. Display all the Parts and their Weight, which are not in the range of 10 and 15.

```
Select * from parts
Where Weight  not in(10,15);
```

```
Select * from parts
    -> Where Weight  not in(10,15);
+----+-------+--------+--------+--------+
| P# | Pname | Color  | Weight | City   |
+----+-------+--------+--------+--------+
| P1 | Part1 | Red    |  20.55 | Delhi  |
| P2 | Part2 | Black  |  45.55 | Mumbai |
| P3 | Part3 | Pink   |  45.55 | Mumbai |
| P4 | Part4 | Black  |  20.40 | London |
| P5 | Part5 | Green  |  80.40 | London |
| P6 | Part6 | Yellow |  50.40 | pune   |
+----+-------+--------+--------+--------+
```

```
Select * from parts
    -> Where Weight not between 10 And 15;
+----+-------+--------+--------+--------+
| P# | Pname | Color  | Weight | City   |
```

+----+-------+--------+--------+--------+

| P1 | Part1 | Red | 20.55 | Delhi |

| P2 | Part2 | Black | 45.55 | Mumbai |

| P3 | Part3 | Pink | 45.55 | Mumbai |

| P4 | Part4 | Black | 20.40 | London |

| P5 | Part5 | Green | 80.40 | London |

| P6 | Part6 | Yellow | 50.40 | pune |

+----+-------+--------+--------+--------+

4. Display all the Part names starting with the letter ‘S’.

```
Select PartName from parts
Where PartNname like 's%';
```

5. Display all the Suppliers, belonging to cities starting with the letter ‘L’.

```
Select * from Supplier
   Where city like 'L%';
```

6. Display all the Projects, with the third letter in JNAME as ‘n’.

```
Select * from Projects
Where JNAME like '__n%';
```

SQL Exercise 3

1. Display all the Supplier names with the initial letter capital.

select concat(upper(substring(Sname,1,1)),substring(Sname,2)) from supplier;

2. Display all the Supplier names in upper case.

select upper(Sname) from supplier;

3. Display all the Supplier names in lower case.

select lower(Sname) from supplier;

4. Display all the Supplier names padded to 25 characters, with spaces on the left.

select lpad(sname,25,' ') from supplier;

5. Display all the Supplier names (with ‘la’ replaced by ‘ro’).

HINT: REPLACE.

select replace(sname,'la','ro') from supplier;

6. Implement the above command such that ‘l’ is replaced with ‘r’ and ‘a’ is replaced with ‘o’.

select replace(replace(sname,'l','r'),'a','o') from supplier;

6. Display the Supplier names and the lengths of the names.

Select sname,length(sname) from supplier;

Select sname,length(sname) from supplier group by sname;

7. Use the soundex function to search for a supplier by the name of ‘BLOKE’.

select sname from supplier where soundex(sname) = soundex('samir');

8. Display the Supplier name and the status (as Ten, Twenty, Thirty, etc.).

select sname,case when status = 10 then 'Ten' when status = 20 then 'Twenty' when status = 30 then 'Thirty' else 'other' end "deptno" from supplier;

9.Display the current day (e.g. Thursday).

select dayname(sysdate()) from dual;

SQL Exercise 4

1. Display the minimum Status in the Supplier table.

- **Select min(status) from supplier;**

2. Display the maximum Weight in the Parts table.

- **Select max(Weight) from parts;**

3. Display the average Weight of the Parts.

- **Select AVG(Weight) FROM Parts;**

4. Display the total Quantity sold for part 'P1'.

- **Select SUM(Qty) from spj where P#=p1;**

5. Display the total Quantity sold for each part.

- **Select P#, SUM(Qty) from spj group by P#;**

6. Display the average Quantity sold for each part.

- **Select P#, avg(qty) from spj group by P#;**

7. Display the maximum Quantity sold for each part, provided the maximum Quantity is greater than 800.

- **Select P#, Max(qty) from spj group by p# having max(qty)>800;**

8.Display the Status and the count of Suppliers with that Status.

- **Select status, count(*) from supplier group by status;**

9.Display the count of Projects going on in different cities.

- **Select city, count(*)from projects group by city;**

10.What is the difference between COUNT(Status) and COUNT(*) ?

- **count (status) counts only non null status values, whereas COUNT(*) counts all rows;**

11. Display the Status and the Count of Suppliers with that Status in the following format as shown below:-

Status

Count

Ten 1

Twenty 2

Thirty 3

- **Select case status when 10 then 'ten' when 20 then 'twenty' when 30 then 'thirty' else 'other' end as status, count(*) as count from supplier group by status;**

SQL Exercise 5

1. Display the Supplier name and the Quantity sold.

Answer: SELECT Supplier.Sname, SPJ.Qty FROM Supplier JOIN SPJ ON Supplier.S# = SPJ.S#;

2. Display the Part name and Quantity sold.

SELECT Parts.Pname, SPJ.Qty FROM Parts JOIN SPJ ON Parts.P# = SPJ.P#;

3. Display the Project name and Quantity sold.

SELECT Projects.Jname, SPJ.Qty FROM Projects JOIN SPJ ON Projects.J# = SPJ.J#;

4. Display the Supplier name, Part name, Project name and Quantity sold.

SELECT S.Sname, P.Pname, J.Jname, SPJ.Qty FROM SPJ JOIN Supplier S ON SPJ.S# = S.S# JOIN Parts P ON SPJ.P# = P.P# JOIN Projects J ON SPJ.J# = J.J#;

5. Display the Supplier name, Supplying Parts to a Project in the same City.

SELECT DISTINCT S.Sname FROM SPJ JOIN Supplier S ON SPJ.S# = S.S# JOIN Projects J ON SPJ.J# = J.J# WHERE S.City = J.City;

6. Display the Part name that is 'Red' is color, and the Quantity sold.

SELECT P.Pname, SPJ.Qty FROM Parts P JOIN SPJ ON P.P# = SPJ.P# WHERE Color = 'Red';

7. Display all the Quantity sold by Suppliers with the Status = 20.

SELECT SPJ.* FROM SPJ JOIN Supplier ON SPJ.S# = Supplier.S# WHERE Supplier.Status = 20;

8. Display all the Parts and Quantity with a Weight > 14.

SELECT Parts.Pname, SPJ.Qty FROM Parts JOIN SPJ ON Parts.P# = SPJ.P# WHERE Parts.Weight > 14;

9. Display all the Project names and City, which has bought more than 500 Parts.

SELECT Projects.Jname, Projects.City FROM Projects JOIN SPJ ON Projects.J# = SPJ.J# GROUP BY Projects.Jname, Projects.City HAVING SUM(SPJ.Qty) > 500;

10. Display all the Part names and Quantity sold that have a Weight less than 15.

SELECT Parts.Pname, SPJ.Qty FROM Parts JOIN SPJ ON Parts.P# = SPJ.P# WHERE Weight < 15;

11.Display all the Employee names and the name of their Managers.

SELECT E.EMPNAME, M.EMPNAME AS Manager FROM SEMP E JOIN SEMP M ON E.DEPTHEAD = M.EMPNO;

SQL

Exercise 6

1. Display all the Suppliers with the same Status as the supplier, 'CLARK'.

- **SELECT ***

  FROM Supplier

  WHERE Status = (

  SELECT Status

  FROM Supplier

  WHERE Sname = 'CLARK'

  );

2.Display all the Employees in the same department as the employee ‘MILLER’.

- **SELECT ***

  FROM SEMP

  WHERE DEPTNO = (

  SELECT DEPTNO

  FROM SEMP

  WHERE EMPNAME = 'MILLER'

  );

3. Display all the Parts which have more Weight than all the Red parts.

```
SELECT *
FROM Parts
WHERE Weight > ALL (
   SELECT Weight
   FROM Parts
   WHERE Color = 'Red'
);
```

4. Display all the Projects going on in the same city as the project ‘TAPE’.

- **SELECT ***

```
FROM Projects
WHERE City = (
   SELECT City
   FROM Projects
   WHERE Jname = 'TAPE'
);
```

5. Display all the Parts with Weight less than all the Green parts.

- **SELECT ***

```
FROM Parts
WHERE Weight < ALL (
   SELECT Weight
   FROM Parts
   WHERE Color = 'Green'
);
```

6. Display the name of the Supplier who has sold the maximum Quantity (in one sale).

- **SELECT S.Sname**

```
FROM Supplier S
JOIN SPJ ON S.S# = SPJ.S#
WHERE SPJ.Qty = (
   SELECT MAX(Qty)
   FROM SPJ
);
```

7.Display the name of the Employee with the minimum Salary.

```
SELECT EMPNAME
FROM SEMP
WHERE BASIC = (
   SELECT MIN(BASIC)
   FROM SEMP
);
```

8. Display the name of the Supplier who has sold the maximum overall Quantity (sum of Sales).

- **SELECT S.Sname**

```
FROM Supplier S
JOIN SPJ ON S.S# = SPJ.S#
GROUP BY S.Sname
HAVING SUM(Qty) = (
   SELECT MAX(TotalQty)
   FROM (
      SELECT SUM(Qty) AS TotalQty
      FROM SPJ
      GROUP BY S#
   ) AS SubTotals
);
```

9. Display the name of the Department with the maximum number of Employees.

```
-SELECT D.DEPTNAME
FROM SDEPT D
JOIN SEMP E ON D.DEPTNO = E.DEPTNO
GROUP BY D.DEPTNAME
HAVING COUNT(*) = (
   SELECT MAX(EmpCount)
   FROM (
      SELECT COUNT(*) AS EmpCount
      FROM SEMP
      GROUP BY DEPTNO
   ) AS DeptCounts  );
```