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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:-**

1. **Display all the data from the S table.**

**select \* from SUPPLIER;**

1. **Display only the S# and SNAME fields from the S table.**

**select sname from SUPPLIER;**

1. **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 |**

**+-------+-------+**

1. **Display all the Suppliers from London.**

**select \* from SUPPLIER**

**-> where city ='London';**

**+----+-------+--------+--------+**

**| S# | Sname | Status | City |**

**+----+-------+--------+--------+**

**| S4 | Ravi | 40 | London |**

**| S7 | Abhi | 23 | London |**

**+----+-------+--------+--------+**

1. **Display all the Suppliers from Paris or Athens.**

**Select \* from suppliers**

**Where city in( 'Paris' ,' Athens' );**

1. **Display all the Projects in Athens.**

**Select \* from Projects**

**Where city = ' Athens' ;**

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

**Select pname from parts**

**Where weight between 12 and 14 ;**

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

**Select \* from Suppliers**

**Where ststus >=20;**

1. **Display all the Suppliers except the Suppliers from London.**

**Select \* from Suppliers**

**Where city !=London;**

1. **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;**

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

**Select \* from Supplier**

**Where status between 10 and 20;**

1. 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 |**

**+----+-------+--------+--------+--------+**

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

**Select PartName from parts**

**Where PartNname like 's%';**

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

**Select \* from Supplier**

**Where city like 'L%'**;

1. 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;**

1. Display all the Supplier names in upper case.

**select upper(Sname) from supplier;**

1. Display all the Supplier names in lower case.

**select lower(Sname) from supplier;**

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

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

1. 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;**

1. 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;**

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

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

1. 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;**

1. **Display the maximum Weight in the Parts table.**

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

1. **Display the average Weight of the Parts.**

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

1. **Display the total Quantity sold for part ‘P1’.**

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

1. **Display the total Quantity sold for each part.**

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

1. **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#;

1. **Display the Part name and Quantity sold.**

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

1. **Display the Project name and Quantity sold.**

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

1. **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#;

1. **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;

1. **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';

1. **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;

1. **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;

1. **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;

1. **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'**

**);**

1. **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'**

**);**

1. **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 );**