

SQL Queries to Practice

Prepare Sample Data to Practice SQL.

Sample Table – Worker

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
001	Monika	Arora	100000	2014-02-20 09:00:00	HR
002	Niharika	Verma	80000	2014-06-11 09:00:00	Admin
003	Vishal	Singhal	300000	2014-02-20 09:00:00	HR
004	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin
005	Vivek	Bhati	500000	2014-06-11 09:00:00	Admin
006	Vipul	Diwan	200000	2014-06-11 09:00:00	Account
007	Satish	Kumar	75000	2014-01-20 09:00:00	Account
008	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin

Sample Table – Bonus

WORKER_REF_ID	BONUS_DATE	BONUS_AMOUNT
1	2016-02-20 00:00:00	5000
2	2016-06-11 00:00:00	3000
3	2016-02-20 00:00:00	4000
1	2016-02-20 00:00:00	4500
2	2016-06-11 00:00:00	3500

Sample Table – Title

WORKER_REF_ID	WORKER_TITLE	AFFECTED_FROM
1	Manager	2016-02-20 00:00:00
2	Executive	2016-06-11 00:00:00
8	Executive	2016-06-11 00:00:00
5	Manager	2016-06-11 00:00:00
4	Asst. Manager	2016-06-11 00:00:00
7	Executive	2016-06-11 00:00:00

6	Lead	2016-06-11 00:00:00
3	Lead	2016-06-11 00:00:00

To prepare the sample data, you can run the following queries in your database query executor or on the SQL command line. We've tested them with MySQL Server 5.7 and MySQL Workbench 6.3.8 query browser. You can also download these Software's and install them to carry on the SQL exercise.

SQL Script To Seed Sample Data

```
CREATE DATABASE ORG;
SHOW DATABASES;
USE ORG;

CREATE TABLE Worker (
    WORKER_ID INT NOT NULL PRIMARY KEY AUTO_INCREMENT,
    FIRST_NAME CHAR(25),
    LAST_NAME CHAR(25),
    SALARY INT(15),
    JOINING_DATE DATETIME,
    DEPARTMENT CHAR(25)
);

INSERT INTO Worker
(WORKER_ID, FIRST_NAME, LAST_NAME, SALARY, JOINING_DATE, DEPARTMENT) VALUES
(001, 'Monika', 'Arora', 100000, '14-02-20 09.00.00', 'HR'),
(002, 'Niharika', 'Verma', 80000, '14-06-11 09.00.00', 'Admin'),
```

```
(003, 'Vishal', 'Singhal', 300000, '14-02-20 09.00.00', 'HR'),
(004, 'Amitabh', 'Singh', 500000, '14-02-20 09.00.00', 'Admin'),
(005, 'Vivek', 'Bhati', 500000, '14-06-11 09.00.00', 'Admin'),
(006, 'Vipul', 'Diwan', 200000, '14-06-11 09.00.00', 'Account'),
(007, 'Satish', 'Kumar', 75000, '14-01-20 09.00.00', 'Account'),
(008, 'Geetika', 'Chauhan', 90000, '14-04-11 09.00.00', 'Admin');
```

```
CREATE TABLE Bonus (
    WORKER_REF_ID INT,
    BONUS_AMOUNT INT(10),
    BONUS_DATE DATETIME,
    FOREIGN KEY (WORKER_REF_ID)
        REFERENCES Worker(WORKER_ID)
    ON DELETE CASCADE
);
```

```
INSERT INTO Bonus
(WORKER_REF_ID, BONUS_AMOUNT, BONUS_DATE) VALUES
    (001, 5000, '16-02-20'),
    (002, 3000, '16-06-11'),
    (003, 4000, '16-02-20'),
    (001, 4500, '16-02-20'),
    (002, 3500, '16-06-11');
```

```
CREATE TABLE Title (
    WORKER_REF_ID INT,
    WORKER_TITLE CHAR(25),
    AFFECTED_FROM DATETIME,
    FOREIGN KEY (WORKER_REF_ID)
        REFERENCES Worker(WORKER_ID)
```

```

        ON DELETE CASCADE
    );

INSERT INTO Title
    (WORKER_REF_ID, WORKER_TITLE, AFFECTED_FROM) VALUES
    (001, 'Manager', '2016-02-20 00:00:00'),
    (002, 'Executive', '2016-06-11 00:00:00'),
    (008, 'Executive', '2016-06-11 00:00:00'),
    (005, 'Manager', '2016-06-11 00:00:00'),
    (004, 'Asst. Manager', '2016-06-11 00:00:00'),
    (007, 'Executive', '2016-06-11 00:00:00'),
    (006, 'Lead', '2016-06-11 00:00:00'),
    (003, 'Lead', '2016-06-11 00:00:00');

```

Once above SQL would run, you'll see a result similar to the one attached below.

Output			
Action Output			
#	Time	Action	Message
1	21:51:34	CREATE DATABASE ORG	1 row(s) affected
2	21:51:34	SHOW DATABASES	7 row(s) returned
3	21:51:34	USE ORG	0 row(s) affected
4	21:51:34	CREATE TABLE Worker (WORKER_ID INT NOT NULL PRIMARY KEY AUT...	0 row(s) affected
5	21:51:34	INSERT INTO Worker (WORKER_ID, FIRST_NAME, LAST_NAME, SALARY...	8 row(s) affected Records: 8 Duplicates: 0 Warnings: 0
6	21:51:34	CREATE TABLE Bonus (WORKER_REF_ID INT, BONUS_AMOUNT INT(10)...	0 row(s) affected
7	21:51:34	INSERT INTO Bonus (WORKER_REF_ID, BONUS_AMOUNT, BONUS_DAT...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0

50 SQL Query Questions and Answers

Q-1. Write a SQL Query To Fetch "FIRST_NAME" From Worker Table Using The Alias Name As <WORKER_NAME>.

Ans.

The required query is:

```
Select FIRST_NAME AS WORKER_NAME from Worker;
```

Q-2. Write a SQL Query To Fetch "FIRST_NAME" From Worker Table In Upper Case.

Ans.

The required query is:

```
Select upper(FIRST_NAME) from Worker;
```

Q-3. Write a SQL Query To Fetch Unique Values Of DEPARTMENT From Worker Table.

Ans.

The required query is:

```
Select distinct DEPARTMENT from Worker;
```

Q-4. Write a SQL Query To Print The First Three Characters Of FIRST_NAME From Worker Table.

Ans.

The required query is:

```
Select substring(FIRST_NAME,1,3) from Worker;
```

Q-5. Write a SQL Query To Find The Position Of The Alphabet ('A') In The First Name Column 'Amitabh' From Worker Table.

Ans.

The required query is:

```
Select INSTR(FIRST_NAME, BINARY'a') from Worker where FIRST_NAME = 'Amitabh';
```

Notes.

- The INSTR method is in case-sensitive by default.
- Using Binary operator will make INSTR work as the case-sensitive function.

Q-6. Write a SQL Query To Print The FIRST_NAME From Worker Table After Removing White Spaces From The Right Side.

Ans.

The required query is:

```
Select RTRIM(FIRST_NAME) from Worker;
```

Q-7. Write a SQL Query To Print The DEPARTMENT From Worker Table After Removing White Spaces From The Left Side.

Ans.

The required query is:

```
Select LTRIM(DEPARTMENT) from Worker;
```

Q-8. Write a SQL Query That Fetches The Unique Values Of DEPARTMENT From Worker Table And Prints Its Length.

Ans.

The required query is:

```
Select distinct length(DEPARTMENT) from Worker;
```

Q-9. Write a SQL Query To Print The FIRST_NAME From Worker Table After Replacing 'A' With 'A'.

Ans.

The required query is:

```
Select REPLACE(FIRST_NAME, 'a', 'A') from Worker;
```

Q-10. Write a SQL Query To Print The FIRST_NAME And LAST_NAME From Worker Table Into A Single Column COMPLETE_NAME. A Space Char Should Separate Them.

Ans.

The required query is:

```
Select CONCAT(FIRST_NAME, ' ', LAST_NAME) AS 'COMPLETE_NAME' from Worker;
```

Q-11. Write a SQL Query To Print All Worker Details From The Worker Table Order By FIRST_NAME Ascending.

Ans.

The required query is:


```
Select * from Worker order by FIRST_NAME asc;
```

Q-12. Write a SQL Query To Print All Worker Details From The Worker Table Order By FIRST_NAME Ascending And DEPARTMENT Descending.

Ans.

The required query is:

```
Select * from Worker order by FIRST_NAME asc,DEPARTMENT desc;
```

Q-13. Write a SQL Query To Print Details For Workers With The First Name As "Vipul" And "Satish" From Worker Table.

Ans.

The required query is:

```
Select * from Worker where FIRST_NAME in ('Vipul','Satish');
```

Q-14. Write a SQL Query To Print Details Of Workers Excluding First Names, "Vipul" And "Satish" From Worker Table.

Ans.

The required query is:

```
Select * from Worker where FIRST_NAME not in ('Vipul','Satish');
```

Q-15. Write a SQL Query To Print Details Of Workers With DEPARTMENT Name As "Admin".

Ans.

The required query is:

```
Select * from Worker where DEPARTMENT like 'Admin%';
```

Q-16. Write a SQL Query To Print Details Of The Workers Whose FIRST_NAME Contains 'A'.

Ans.

The required query is:

```
Select * from Worker where FIRST_NAME like '%a%';
```

Q-17. Write a SQL Query To Print Details Of The Workers Whose FIRST_NAME Ends With 'A'.

Ans.

The required query is:

```
Select * from Worker where FIRST_NAME like '%a';
```

Q-18. Write a SQL Query To Print Details Of The Workers Whose FIRST_NAME Ends With 'H' And Contains Six Alphabets.

Ans.

The required query is:

```
Select * from Worker where FIRST_NAME like '_____h';
```

Q-19. Write a SQL Query To Print Details Of The Workers Whose SALARY Lies Between 100000 And 500000.

Ans.

The required query is:

```
Select * from Worker where SALARY between 100000 and 500000;
```

Q-20. Write a SQL Query To Print Details Of The Workers Who Have Joined In Feb'2014.

Ans.

The required query is:

```
Select * from Worker where year(JOINING_DATE) = 2014 and month(JOINING_DATE) = 2;
```

Q-21. Write a SQL Query To Fetch The Count Of Employees Working In The Department 'Admin'.

Ans.

The required query is:

```
SELECT COUNT(*) FROM worker WHERE DEPARTMENT = 'Admin';
```

*** Count means total number of Rows

Q-22. Write a SQL Query To Fetch Worker Names With Salaries >= 50000 And <= 100000.

Ans.

The required query is:

```
SELECT CONCAT(FIRST_NAME, ' ', LAST_NAME) As Worker_Name, Salary  
FROM worker  
WHERE WORKER_ID IN
```

```
(SELECT WORKER_ID FROM worker  
WHERE Salary BETWEEN 50000 AND 100000);
```

Q-23. Write a SQL Query To Fetch The No. Of Workers For Each Department In The Descending Order.

Ans.

The required query is:

```
SELECT DEPARTMENT, count(WORKER_ID) No_Of_Workers  
FROM worker  
GROUP BY DEPARTMENT  
ORDER BY No_Of_Workers DESC;
```

Q-24. Write a SQL Query To Print Details Of The Workers Who Are Also Managers.

Ans.

The required query is:

```
SELECT DISTINCT W.FIRST_NAME, T.WORKER_TITLE  
FROM Worker W  
INNER JOIN Title T  
ON W.WORKER_ID = T.WORKER_REF_ID  
AND T.WORKER_TITLE in ('Manager');
```

Q-25. Write a SQL Query To Fetch Duplicate Records Having Matching Data In Some Fields Of A Table.

Ans.

The required query is:

```
SELECT WORKER_TITLE, AFFECTED_FROM, COUNT(*)  
FROM Title  
GROUP BY WORKER_TITLE, AFFECTED_FROM
```

```
HAVING COUNT(*) > 1;
```

Q-26. Write a SQL Query To Show Only Odd Rows From A Table.

Ans.

The required query is:

```
SELECT * FROM Worker WHERE MOD (WORKER_ID, 2) <> 0;
```

Q-27. Write a SQL Query To Show Only Even Rows From A Table.

Ans.

The required query is:

```
SELECT * FROM Worker WHERE MOD (WORKER_ID, 2) = 0;
```

Q-28. Write a SQL Query To Clone A New Table From Another Table.

Ans.

The general query to clone a table with data is:

```
SELECT * INTO WorkerClone FROM Worker;
```

The general way to clone a table without information is:

```
SELECT * INTO WorkerClone FROM Worker WHERE 1 = 0;
```

An alternate way to clone a table (for MySQL) without is:

```
CREATE TABLE WorkerClone LIKE Worker;
```

Q-29. Write a SQL Query To Fetch Intersecting Records Of Two Tables.

Ans.

The required query is:

```
(SELECT * FROM Worker)  
INTERSECT  
(SELECT * FROM WorkerClone);
```

Q-30. Write a SQL Query To Show Records From One Table That Another Table Does Not Have.

Ans.

The required query is:

```
SELECT * FROM Worker  
MINUS  
SELECT * FROM Title;
```

Q-31. Write a SQL Query To Show The Current Date And Time.

Ans.

Following MySQL query returns the current date:

```
SELECT CURDATE();
```

Following MySQL query returns the current date and time:

```
SELECT NOW();
```

Following SQL Server query returns the current date and time:

```
SELECT getdate();
```

Following Oracle query returns the current date and time:

```
SELECT SYSDATE FROM DUAL;
```

Q-32. Write a SQL Query To Show The Top N (Say 10) Records Of A Table.

Ans.

Following MySQL query will return the top n records using the LIMIT method:

```
SELECT * FROM Worker ORDER BY Salary DESC LIMIT 10;
```

Following SQL Server query will return the top n records using the TOP command:

```
SELECT TOP 10 * FROM Worker ORDER BY Salary DESC;
```

Following Oracle query will return the top n records with the help of ROWNUM:

```
SELECT * FROM (SELECT * FROM Worker ORDER BY Salary DESC)
WHERE ROWNUM <= 10;
```

Q-33. Write a SQL Query To Determine The Nth (Say N=5) Highest Salary From A Table.

Ans.

The following MySQL query returns the nth highest salary:

```
SELECT Salary FROM Worker ORDER BY Salary DESC LIMIT n-1,1;
```

The following SQL Server query returns the nth highest salary:

```
SELECT TOP 1 Salary
FROM (
```

```

SELECT DISTINCT TOP n Salary
FROM Worker
ORDER BY Salary DESC
)
ORDER BY Salary ASC;

```

Q-34. Write a SQL Query To Determine The 5th Highest Salary Without Using TOP Or Limit Method.

Ans.

The following query is using the correlated subquery to return the 5th highest salary:

```

SELECT Salary
FROM Worker W1
WHERE 4 = (
    SELECT COUNT( DISTINCT ( W2.Salary ) )
    FROM Worker W2
    WHERE W2.Salary >= W1.Salary
);

```

Use the following generic method to find nth highest salary without using TOP or limit.

```

SELECT Salary
FROM Worker W1
WHERE n-1 = (
    SELECT COUNT( DISTINCT ( W2.Salary ) )
    FROM Worker W2
    WHERE W2.Salary >= W1.Salary
);

```


Q-35. Write a SQL Query To Fetch The List Of Employees With The Same Salary.

Ans.

The required query is:

```
Select distinct W.WORKER_ID, W.FIRST_NAME, W.Salary
from Worker W, Worker W1
where W.Salary = W1.Salary
and W.WORKER_ID != W1.WORKER_ID;
```

Q-36. Write a SQL Query To Show The Second Highest Salary From A Table.

Ans.

The required query is:

```
Select max(Salary) from Worker
where Salary not in (Select max(Salary) from Worker);
```

Q-37. Write a SQL Query To Show One Row Twice In Results From A Table.

Ans.

The required query is:

```
select FIRST_NAME, DEPARTMENT from worker W where W.DEPARTMENT='HR'
union all
select FIRST_NAME, DEPARTMENT from Worker W1 where W1.DEPARTMENT='HR';
```

Q-38. Write a SQL Query To Fetch Intersecting Records Of Two Tables.

Ans.

The required query is:

```
(SELECT * FROM Worker)  
INTERSECT  
(SELECT * FROM WorkerClone);
```

Q-39. Write a SQL Query To Fetch The First 50% Records From A Table.

Ans.

The required query is:

```
SELECT *  
FROM WORKER  
WHERE WORKER_ID <= (SELECT count(WORKER_ID)/2 from Worker);
```

Q-40. Write a SQL Query To Fetch The Departments That Have Less Than Five People In It.

Ans.

The required query is:

```
SELECT DEPARTMENT, COUNT(WORKER_ID) as 'Number of Workers' FROM Worker GROUP BY  
DEPARTMENT HAVING COUNT(WORKER_ID) < 5;
```

Q-41. Write a SQL Query To Show All Departments Along With The Number Of People In There.

Ans.

The following query returns the expected result:

```
SELECT DEPARTMENT, COUNT(DEPARTMENT) as 'Number of Workers' FROM Worker GROUP BY DEPARTMENT;
```

Q-42. Write a SQL Query To Show The Last Record From A Table.

Ans.

The following query will return the last record from the Worker table:

```
Select * from Worker where WORKER_ID = (SELECT max(WORKER_ID) from Worker);
```

Q-43. Write a SQL Query To Fetch The First Row Of A Table.

Ans.

The required query is:

```
Select * from Worker where WORKER_ID = (SELECT min(WORKER_ID) from Worker);
```

Q-44. Write a SQL Query To Fetch The Last Five Records From A Table.

Ans.

The required query is:

```
SELECT * FROM Worker WHERE WORKER_ID <=5  
UNION  
SELECT * FROM (SELECT * FROM Worker W order by W.WORKER_ID DESC) AS W1 WHERE W1.WORKER_ID <=5;
```

Q-45. Write a SQL Query To Print The Name Of Employees Having The Highest Salary In Each Department.

Ans.

The required query is:

```
SELECT t.DEPARTMENT,t.FIRST_NAME,t.Salary from (SELECT max(Salary) as  
TotalSalary,DEPARTMENT from Worker group by DEPARTMENT) as TempNew  
Inner Join Worker t on TempNew.DEPARTMENT=t.DEPARTMENT  
and TempNew.TotalSalary=t.Salary;
```

Q-46. Write a SQL Query To Fetch Three Max Salaries From A Table.

Ans.

The required query is:

```
SELECT distinct Salary from worker a WHERE 3 >= (SELECT count(distinct Salary) from  
worker b WHERE a.Salary <= b.Salary) order by a.Salary desc;
```

Q-47. Write a SQL Query To Fetch Three Min Salaries From A Table.

Ans.

The required query is:

```
SELECT distinct Salary from worker a WHERE 3 >= (SELECT count(distinct Salary) from  
worker b WHERE a.Salary >= b.Salary) order by a.Salary desc;
```

Q-48. Write a SQL Query To Fetch Nth Max Salaries From A Table.

Ans.

The required query is:

```
SELECT distinct Salary from worker a WHERE n >= (SELECT count(distinct Salary) from worker b WHERE a.Salary <= b.Salary) order by a.Salary desc;
```

Q-49. Write a SQL Query To Fetch Departments Along With The Total Salaries Paid For Each Of Them.

Ans.

The required query is:

```
SELECT DEPARTMENT, sum(Salary) from worker group by DEPARTMENT;
```

Q-50. Write a SQL Query To Fetch The Names Of Workers Who Earn The Highest Salary.

Ans.

The required query is:

```
SELECT FIRST_NAME, SALARY from Worker WHERE SALARY=(SELECT max(SALARY) from Worker);
```