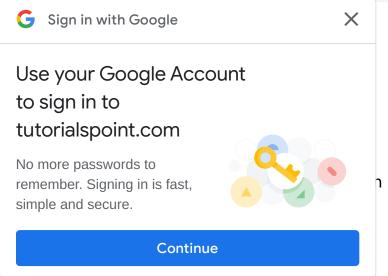


### **Common Table Expressions**

A common table expression in MyS confined to a single statement. You the statement.

The WITH clause in MySQL is used clause can have one or more comn



# Syntax

Following is the syntax of the WITH clause –

```
WITH
name_for_summary_data AS (SELECT Statement)
SELECT columns
FROM name_for_summary_data
WHERE conditions <=> (
    SELECT column
    FROM name_for_summary_data
)[ORDER BY columns]
```

## Example

Assume we have created a table named data and populated it as shown below -

```
CREATE TABLE data(
   ID INT,
   NAME CHAR(20),
   AGE INT,
   SALARY INT
);
```

Let's insert some records into the data table -

```
INSERT INTO data values (101, 'Raja', 25, 55452),
```

```
(102, 'Roja', 29, 66458),
(103, 'Roja', 35, 36944);
```

Following query demonstrates the usage of the WITH clause –

```
WITH CTE
AS (SELECT ID, NAME, AGE, SALARY FROM data)
SELECT * From CTE;
```

### Output

Following is the output of the above query –

ID	NAME	AGE	SALARY
101	Raja	25	55452
102	Roja	29	66458
103	Roja	35	36944

### CTE from multiples tables

You can also create a Common Table Expression from multiple tables.

### Example

Suppose we have created a table with name EMPLOYEE and populated data into it as shown below —

```
CREATE TABLE EMPLOYEE(
   ID INT NOT NULL,
   FIRST_NAME CHAR(20) NOT NULL,
   LAST_NAME CHAR(20),
   AGE INT,
   SEX CHAR(1),
   INCOME FLOAT,
   CONTACT INT
);
```

Now, let's insert two records into the Employee table –

```
INSERT INTO Employee VALUES
(101, 'Ramya', 'Rama Priya', 27, 'F', 9000, 101),
(102, 'Vinay', 'Bhattacharya', 20, 'M', 6000, 102);
```

And, if we have created another table and populated it as -

```
CREATE TABLE CONTACT(
   ID INT NOT NULL,
   EMAIL CHAR(20) NOT NULL,
   PHONE LONG,
   CITY CHAR(20)
);
```

Now, let us insert some records into the CONTACT table –

```
INSERT INTO CONTACT (ID, EMAIL, CITY) VALUES
(101, 'ramya@mymail.com', 'Hyderabad'),
(102, 'vinay@mymail.com', 'Vishakhapatnam');
```

Following query create a Common Table Expression from the above two tables -

```
WITH
exp1 AS (SELECT ID, FIRST_NAME, LAST_NAME FROM EMPLOYEE),
exp2 AS (SELECT EMAIL, PHONE FROM CONTACT)
SELECT * FROM exp1 JOIN exp2;
```

### Output

The above query produces the following output –

ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE
102	Vinay	Bhattacharya	ramya@mymail.com	NULL
101	Ramya	Rama Priya	ramya@mymail.com	NULL
102	Vinay	Bhattacharya	vinay@mymail.com	NULL
101	Ramya	Rama Priya	vinay@mymail.com	NULL

#### **Recursive WITH**

Recursive WITH or Hierarchical queries, is a form of CTE where a CTE can reference to itself, i.e., a WITH query can refer to its own output, hence the name recursive.

### Example

Following query demonstrates the usage of the Recursive WITH statement -

```
WITH RECURSIVE t AS (
    SELECT SALARY FROM data
    UNION ALL
    SELECT SALARY FROM data WHERE SALARY < 50000
)
SELECT * FROM t;</pre>
```

#### Output

Following is the output of the above mysql query -

SALARY		
55452		
66458		
36944		
36944		