



# SQL INSERT INTO Statement

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The INSERT INTO statement of SQL is used to insert a new row/record in a table. There are two ways of using the SQL INSERT INTO statement for inserting rows.

## SQL INSERT Query

### 1. Only Values

The first method is to specify only the value of data to be inserted without the column names.

#### INSERT INTO Syntax:

```
INSERT INTO table_name VALUES (value1, value2, value3);
```

*table\_name: name of the table. value1, value2*

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*value of first column, second column,... for the new record*

### Column Names And Values Both

In the second method we will specify both the columns which we want to fill and their corresponding values as shown below:

#### Insert Data in Specified Columns – Syntax:

```
INSERT INTO table_name (column1, column2, column3)
```

*VALUES ( value1, value2, value3); table\_name:*

*name of the table.*

*column1: name of first column, second column .*

*value1, value2, value3 value of first column, second column,... for the new record*

Suppose there is a Student database and we want to add values.

ROLL_NO	NAME	ADDRESS	PHONE	AGE
1	Ram	Delhi	xxxxxxxxxxxxxx	18
2	RAMESH	GURGAON	xxxxxxxxxxxxxx	18
3	SUJIT	ROHTAK	xxxxxxxxxxxxxx	20
4	SURESH	ROHTAK	xxxxxxxxxxxxxx	18
3	SUJIT	ROHTAK	xxxxxxxxxxxxxx	20
2	RAMESH	GURGAON	xxxxxxxxxxxxxx	18

### Method 1 (Inserting only values) – SQL INSERT Query

If we want to insert only values then we use the following query:

**Query:**

```
INSERT INTO Student VALUES
('5', 'HARSH', 'WEST BENGAL',
'XXXXXXXXXX', '19');
```

**Output:**

The table **Student** will now look like this:

ROLL_NO	NAME	ADDRESS	PHONE	Age
1	Ram	Delhi	XXXXXXXXXX	18
2	RAMESH	GURGAON	XXXXXXXXXX	18

ROLL_NO	NAME	ADDRESS	PHONE	Age
3	SUJIT	ROHTAK	XXXXXXXXXX	20
4	SURESH	Delhi	XXXXXXXXXX	18
3	SUJIT	ROHTAK	XXXXXXXXXX	20
2	RAMESH	GURGAON	XXXXXXXXXX	18
5	HARSH	WEST BENGAL	XXXXXXXXXX	19

## Method 2 (Inserting values in only specified columns) – SQL INSERT INTO Statement

If we want to insert values in the specified columns then we use the following query:

### Query:

```
INSERT INTO Student (ROLL_NO,
NAME, Age) VALUES ('5', 'PRATIK', '19');
```

### Output:

The table **Student** will now look like this:

ROLL_NO	NAME	ADDRESS	PHONE	Age
1	Ram	Delhi	XXXXXXXXXX	18
2	RAMESH	GURGAON	XXXXXXXXXX	18
3	SUJIT	ROHTAK	XXXXXXXXXX	20
4	SURESH	Delhi	XXXXXXXXXX	18
3	SUJIT	ROHTAK	XXXXXXXXXX	20
2	RAMESH	GURGAON	XXXXXXXXXX	18
5	PRATIK	null	null	19

Notice that the columns for which the values are not provided are filled by null. Which are the default values for those columns?

## 2. Using SELECT in INSERT INTO Statement

We can use the SELECT statement with INSERT INTO statement to copy rows from one table and insert them into another table. The use of this statement is similar to that of the INSERT INTO statement. The difference is that the SELECT statement is used here to select data from a different table. The different ways of using INSERT INTO SELECT statement are shown below:

### Inserting all columns of a table – INSERT INTO SELECT Statement

We can copy all the data of a table and insert it into a different table.

#### Syntax:

```
INSERT INTO first_table SELECT * FROM second_table;
```

*first\_table: name of first table.*

*second\_table: name of second table.*

We have used the SELECT statement to copy the data from one table and the INSERT INTO statement to insert from a different table.

### Inserting specific columns of a table – INSERT INTO SELECT Statement

We can copy only those columns of a table that we want to insert into a different table.

#### Syntax:

```
INSERT INTO first_table(names_of_columns1)
```

```
SELECT names_of_columns2 FROM second_table;
```

*first\_table: name of first table. second\_table: name of second table.*

*names of columns1: name of columns separated by comma(,) for table 1.*

*names of columns2: name of columns separated by comma(,) for table 2.*

We have used the SELECT statement to copy the data of the selected columns only from the second table and the INSERT INTO statement to insert in the first table.

### Copying specific rows from a table – INSERT INTO SELECT Statement

We can copy specific rows from a table to insert into another table by using the WHERE clause with the SELECT statement. We have to provide appropriate conditions in the WHERE clause to select specific rows.

*INSERT INTO table1 SELECT \* FROM table2 WHERE condition;*

*first\_table: name of first table.*

*second\_table: name of second table.*

*condition: condition to select specific rows.*

Suppose there is a LateralStudent database.

ROLL_NO	NAME	ADDRESS	PHONE	Age
7	SOUVIK	HYDERABAD	XXXXXXXXXX	18
8	NIRAJ	NOIDA	XXXXXXXXXX	19
9	SOMESH	ROHTAK	XXXXXXXXXX	20

### Method 1 – (Inserting all rows and columns)

If we want to insert only values then we use the following query:

#### SQL INSERT INTO SELECT Query:

```
INSERT INTO Student
SELECT * FROM LateralStudent;
```

#### Output:

This query will insert all the data of the table LateralStudent in the table Student. The table Student will now look like this,

ROLL_NO	NAME	ADDRESS	PHONE	Age
1	Ram	Delhi	XXXXXXXXXX	18

ROLL_NO	NAME	ADDRESS	PHONE	Age
2	RAMESH	GURGAON	XXXXXXXXXX	18
3	SUJIT	ROHTAK	XXXXXXXXXX	20
4	SURESH	Delhi	XXXXXXXXXX	18
3	SUJIT	ROHTAK	XXXXXXXXXX	20
2	RAMESH	GURGAON	XXXXXXXXXX	18
7	SOUVIK	DUMDUM	XXXXXXXXXX	18
8	NIRAJ	NOIDA	XXXXXXXXXX	19
9	SOMESH	ROHTAK	XXXXXXXXXX	20

### Method 2(Inserting specific columns)

If we want to insert values in the specified columns then we use the following query:

#### SQL INSERT INTO SELECT Query:

```
INSERT INTO Student(ROLL_NO,NAME,Age)
SELECT ROLL_NO, NAME, Age FROM LateralStudent;
```

#### Output:

This query will insert the data in the columns ROLL\_NO, NAME, and Age of the table LateralStudent in the table Student and the remaining columns in the Student table will be filled by *null* which is the default value of the remaining columns. The table Student will now look like this,

ROLL_NO	NAME	ADDRESS	PHONE	Age
1	Ram	Delhi	XXXXXXXXXX	18
2	RAMESH	GURGAON	XXXXXXXXXX	18
3	SUJIT	ROHTAK	XXXXXXXXXX	20

ROLL_NO	NAME	ADDRESS	PHONE	Age
4	SURESH	Delhi	XXXXXXXXXX	18
3	SUJIT	ROHTAK	XXXXXXXXXX	20
2	RAMESH	GURGAON	XXXXXXXXXX	18
7	SOUVIK	null	null	18
8	NIRAJ	null	null	19
9	SOMESH	null	null	20

### Select specific rows to insert:

```
INSERT INTO Student SELECT *  
FROM LateralStudent WHERE Age = 18;
```

### Output:

This query will select only the first row from table LateralStudent to insert into the table Student. The table Student will now look like this,

ROLL_NO	NAME	ADDRESS	PHONE	Age
1	Ram	Delhi	XXXXXXXXXX	18
2	RAMESH	GURGAON	XXXXXXXXXX	18
3	SUJIT	ROHTAK	XXXXXXXXXX	20
4	SURESH	Delhi	XXXXXXXXXX	18
3	SUJIT	ROHTAK	XXXXXXXXXX	20
2	RAMESH	GURGAON	XXXXXXXXXX	18
7	SOUVIK	DUMDUM	XXXXXXXXXX	18

## To insert multiple rows in a table using Single SQL Statement:

### Syntax:

```
INSERT INTO table_name(Column1,Column2,Column3,.....)
VALUES (Value1, Value2,Value3,.....),
      (Value1, Value2,Value3,.....),
      (Value1, Value2,Value3,.....),
      ..... ;
```

Where,

- **table\_name:** name of the table.  
**Column 1:** name of the first column, second column.
- **Values:** Value1, Value2, Value3: the value of the first column, second column.
- For each new row inserted, you need To provide Multiple lists of values where each list is separated by “,”. Every list of values corresponds to values to be inserted in each new row of the table. Values in the next list tell values to be inserted in the next Row of the table.

### Example:

The following SQL statement inserts multiple rows in Student Table.

### Query:

```
INSERT INTO STUDENT(ID, NAME,AGE,GRADE,CITY)
VALUES(1,"AMIT KUMAR",15,10,"DELHI"),
(2,"GAURI RAO",18,12,"BANGALORE"),
(3,"MANAV BHATT",17,11,"NEW DELHI"),
(4,"RIYA KAPOOR",10,5,"UDAIPUR");
```

### Output:

Thus STUDENT Table will look like this:

ID	NAME	AGE	GRADE	CITY
1	AMIT KUMAR	15	10	DELHI
2	GAURI RAO	18	12	BANGALORE



ID	NAME	AGE	GRADE	CITY
3	MANAV BHATT	17	11	NEW DELHI
4	RIYA KAPOOR	10	5	UDAIPUR

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