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How to use Auto Increment in SQL?

Databases are known to store a humongous amount of data in a logical format. But, have you ever thought about a situation, wherein you have to mention a unique number for every new record in a table? Well, I think, it’s practically impossible to enter the numbers manually. So, instead, you can use Auto Increment in SQL, to automatically enter a unique number for every new record in the table.

The following topics will be covered in this article:

1)What is an auto-increment in SQL?

2)How do you set up Auto Increment?

- SQL Server
- MySQL
- MS Access
- Oracle
- PostgreSQL

What is an auto-increment in SQL?

I am sure the name suggests its functionality by itself. Auto Increment is a field used to generate a unique number for every new record added to a table. This is generally used for the primary key column as it becomes easy for the developers to automatically generate a unique number for every new record.

Now, that you know, what is an auto-increment in SQL, let us discuss how to use this field in various DBMS.

How do you set up Auto Increment?

For your better understanding, I will consider the following table:

CustomerID	CustomerName	Age	PhoneNumber

Syntax and Example for SQL Server

To use the auto-increment field, in SQL Server, you have to use the **IDENTITY** keyword.

Syntax:

```
CREATE TABLE TableName (
Column1 DataType IDENTITY(starting value, increment by),
Column2 DataType,
);
```

Example:

Create a table with the name Customers, and columns CustomerID, CustomerName, Age, and PhoneNumber. Here, auto-increment the CustomerID and make it the primary key for the table.

```
CREATE TABLE Customers (
CustomerID int IDENTITY(1,1) PRIMARY KEY,
CustomerName varchar(255),
Age int,
PhoneNumber int);
```

In the above example, the Also, to insert values in the above table, you have to use the **starting value for IDENTITY is 1** and it should INSERT query in the following way: **increment by 1** for every new record added. You can mention these values, according to your wish.

```
INSERT INTO Customers (CustomerName,Age, PhoneNumber)
VALUES ('Abhay','25','9876543210');
```

Here, if you observe, I have not mentioned the CustomerID column, as the ID will be automatically generated. So, if you see insert 4 more values using the below queries:

```
INSERT INTO Customers (CustomerName,Age, PhoneNumber)
VALUES ('Sonal','22','9812313210');

INSERT INTO Customers (CustomerName,Age, PhoneNumber)
VALUES ('Anuj','19','9956413210');

INSERT INTO Customers (CustomerName,Age, PhoneNumber)
VALUES ('Mona','24','9876543911');

INSERT INTO Customers (CustomerName,Age, PhoneNumber)
VALUES ('Sanjay','31','9657154310');
```

Then, you will see the below output:

CustomerID	CustomerName	Age	PhoneNumber
1	Abhay	25	9876543210
2	Sonal	22	9812313210
3	Anuj	19	9956413210
4	Mona	24	9876543911
5	Sanjay	31	9657154310

Next, in this article on auto-increment in SQL, let us see how to auto-increment a column in MySQL.

Syntax and Example for MySQL

To use the auto-increment field, in MySQL, you have to use the **AUTO_INCREMENT keyword**. the **starting value** for AUTO_INCREMENT **is 1 by default**, and it will **increment by 1** for each new record.

Syntax:

```
CREATE TABLE TableName ( Column1 DataType AUTO_INCREMENT, Column2 DataType, );
```

Example:

Create a table with the name Customers, and columns CustomerID, CustomerName, Age, and PhoneNumber. Here, auto-increment the CustomerID and make it the primary key for the table.

```
CREATE TABLE Customers ( CustomerID int AUTO_INCREMENT PRIMARY KEY, CustomerName varchar(255), Age int, PhoneNumber int);
```

If you wish to start the AUTO_INCREMENT value by any other number, then you can use the keyword in the following way:

Syntax:

```
ALTER TABLE TableName AUTO_INCREMENT=50;
```

Example:

```
ALTER TABLE Customers AUTO_INCREMENT=50;
```

Similar to that of SQL Server, you can INSERT values into the table, by using the INSERT statement. On inserting values, you will see the same output, as that of the above table. Next, in this article on auto-increment in SQL, let us see how to auto-increment a column in MS Access.

Syntax and Example for MS Access

To use the auto-increment field, in MS Access, you have to use the **AUTOINCREMENT** keyword.

Syntax:

Syntax:

```
CREATE TABLE TableName ( Column1 DataType AUTOINCREMENT, Column2 DataType,
);
```

Example:

Create a table with the name Customers, and columns CustomerID, CustomerName, Age, and PhoneNumber. Here, auto-increment the CustomerID and make it the primary key for the table.

```
CREATE TABLE Customers ( CustomerID int AUTOINCREMENT PRIMARY KEY,
CustomerName varchar, Age int, PhoneNumber int);
```

The **default starting value** of **AUTOINCREMENT is 1** and it will also **increment by 1** for each record. But, if you wish to change this, and let us say, you want to set the starting value to be 20 and increment by 2, you can use the auto-increment feature as below:

```
AUTOINCREMENT(20,2)
```

Similar to that of SQL Server, you can INSERT values into the table, by using the INSERT statement. On inserting values, you will see the same output, as that of the above table. Next, in this article on auto-increment in SQL, let us see how to auto-increment a column in Oracle.

Syntax and Example for Oracle

To use the auto-increment field, in Oracle, you have to create an auto-increment field with the sequence object. The sequence object generates a number sequence.

Syntax to create a sequence:

```
CREATE SEQUENCE name_of_sequence MINVALUE 1 START WITH 1 INCREMENT BY
1 CACHE 10;
```

In the above syntax,

1. **Name_of_sequence** — Creation of sequence named name_of_sequence
2. **START** — Mentions the starting value
3. **INCREMENT BY** — Mentions the value incremented by
4. **CACHE** — Mentions the maximum number of values to be stored for faster access.

Example:

Create a sequence object where the starting value is 1, is incremented by 3, and a maximum number of values to be stored is 20.

```
CREATE SEQUENCE seq_customers MINVALUE 1 START WITH 1 INCREMENT BY 3
CACHE 20;
```

Similar to that of MySQL and SQL Server, you can INSERT values into the table, by using the INSERT statement. On inserting values, you will see the same output, as that of the above table. Next, in this article on auto-increment in SQL, let us see how to auto-increment a column in PostgreSQL.

Syntax and Example for PostgreSQL

To use the auto-increment field, in PostgreSQL, you have to create an auto-increment field with the sequence object. The sequence object generates a number sequence.

Syntax:

```
CREATE TABLE TableName ( Column1 DataType SERIAL PRIMARY KEY, Column2
DataType, );
```

Example:

Create a table with the name Customers, and columns CustomerID,

CustomerName, Age and PhoneNumber. Here, auto-increment the CustomerID and make it the primary key for the table.

```
CREATE TABLE Customers ( CustomerID int SERIAL PRIMARY KEY, CustomerName varchar(255), Age int, PhoneNumber int);
```

Similar to that of MySQL, SQL Server, and other DBMS you can INSERT values into the table, by using the INSERT statement. On inserting values, you will see the same output, as that of the above table. I hope you guys enjoyed this article and understood all the differences. If you wish to check out more articles on the market's most trending technologies like Artificial Intelligence, DevOps, Ethical Hacking, then you can refer to Edureka's official site.

Do look out for other articles in this series which will explain the various other aspects of SQL.

1. Differences Between SQL & NoSQL Databases

2. SQL For Data Science

3.Top 65 SQL Interview Questions

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