Research On Scheme

A Schema in SQL is a collection of database objects associated with a database. The username of a database is called a Schema owner (owner of logically grouped structures of data). Schema always belong to a single database whereas a database can have single or multiple schemas. Also, it is also very similar to separate namespaces or containers, which stores database objects. It includes various database objects including your tables, views, procedures, index, etc.

Advantages of using Schema

- You can apply security permissions for separating and protecting database objects based on user access rights.
- A logical group of database objects can be managed within a database. Schemas play an important role in allowing the database objects to be organized into these logical groups.
- The schema also helps in situations where the database object name is the same. But these objects fall under different logical groups.
- A single schema can be used in multiple databases.
- The schema also helps in adding security.
- It helps in manipulating and accessing the objects which otherwise is a complex method.
- You can also transfer the ownership of several schemas.
- The objects created in the database can be moved among schemas.

These were few advantages, now the next topic is the method to create a schema.

How to create a Schema?

Syntax to create SQL:

```
1        CREATE SCHEMA [schema_name] [AUTHORIZATION owner_name]
```

```
    [DEFAULT CHARACTER SET char_set_name]
    [PATH schema_name[, ...]]
    [ ANSI CREATE statements [...] ]
    [ ANSI GRANT statements [...] ];
```

You can create a schema using SQL server management studio. Follow the mentioned steps! SQL Server CREATE SCHEMA statement overview

The CREATE SCHEMA statement allows you to create a new schema in the current database.

The following illustrates the simplified version of the CREATE SCHEMA statement:

```
CREATE SCHEMA schema_name
    [AUTHORIZATION owner_name]
```
Code language: SQL (Structured Query Language) (sql)

In this syntax,

- First, specify the name of the schema that you want to create in the CREATE SCHEMA clause.
- Second, specify the owner of the schema after the AUTHORIZATION keyword.

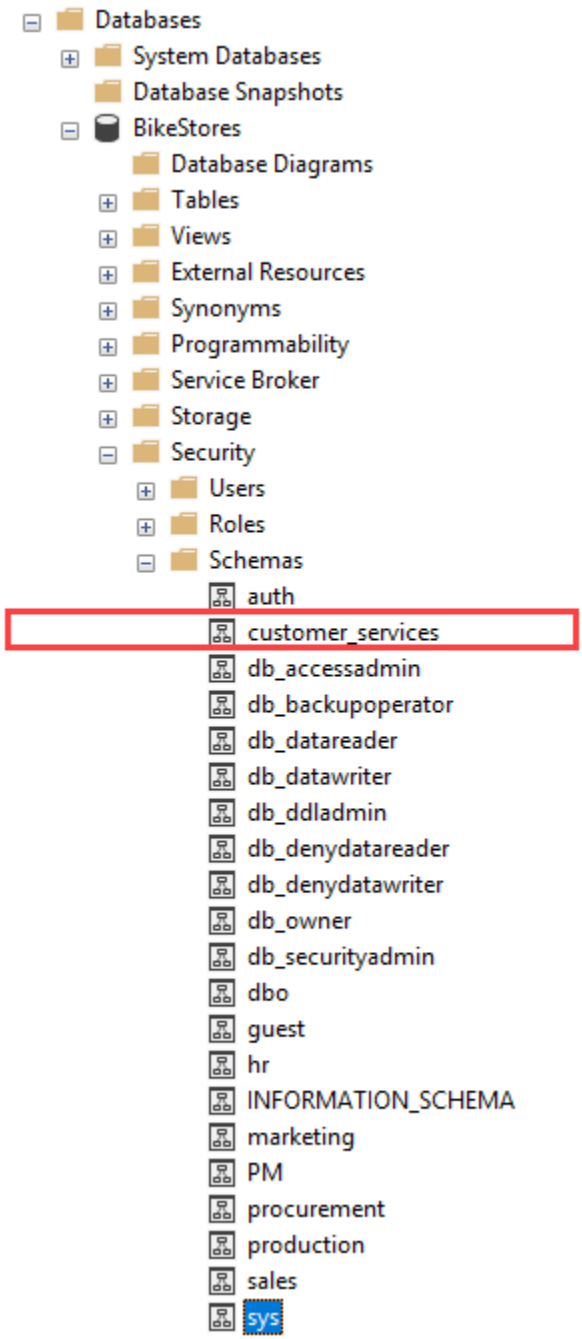
SQL Server CREATE SCHEMA statement example

The following example shows how to use the CREATE SCHEMA statement to create the customer_services schema:

```
CREATE SCHEMA customer_services;
GO
```
Code language: SQL (Structured Query Language) (sql)

Note that GO command instructs the SQL Server Management Studio to send the SQL statements up to the GO statement to the server to be executed.

Once you execute the statement, you can find the newly created schema under the **Security > Schemas** of the database name.



If you want to list all schemas in the current database, you can query schemas from the sys.schemas as shown in the following query:

```
SELECT
    s.name AS schema_name,
    u.name AS schema_owner
FROM
    sys.schemas s
INNER JOIN sys.sysusers u ON u.uid = s.principal_id
ORDER BY
    s.name;
```

Code language: SQL (Structured Query Language) (sql)

Here is the output:

schema_name	schema_owner
auth	dbo
customer_services	dbo
db_accessadmin	db_accessadmin
db_backupoperator	db_backupoperator
db_datareader	db_datareader
db_datawriter	db_datawriter
db_ddladmin	db_ddladmin
db_denydatareader	db_denydatareader
db_denydatawriter	db_denydatawriter
db_owner	db_owner
db_securityadmin	db_securityadmin
dbo	dbo
guest	guest
hr	dbo
INFORMATION_SCHEMA	INFORMATION_SCHEMA
marketing	dbo
PM	dbo
procurement	dbo
production	dbo
sales	dbo
sys	sys

After having the customer_services schema, you can create objects for the schema. For example, the following statement creates a new table named jobs in the customer_services schema:

```
CREATE TABLE customer_services.jobs(
    job_id INT PRIMARY KEY IDENTITY,
    customer_id INT NOT NULL,
    description VARCHAR(200),
    created_at DATETIME2 NOT NULL
);
```

Code language: SQL (Structured Query Language) (sql)

In this tutorial, you have learned how to use the SQL Server CREATE SCHEMA statement to create a new schema in the current database.

Using SQL Server Management Studio

Follow the steps in order to create a schema.

- In object explorer, click on the databases folder.
- Create the New database schema under database.

- Right click Security folder, click New, select Schema.
- Go on Schema-New dialog box, enter a specific name that you want to create for your new schema.
- In the schema owner box, enter the name of the database user in order to own the schema. Click search, to open the Search Roles and User dialogue box.
- Click OK.

This is how a schema is created. Now let us see how a schema is altered.

What is a schema in SQL Server

A schema is a collection of database objects including tables, views, triggers, stored procedures, indexes, etc. A schema is associated with a username which is known as the schema owner, who is the owner of the logically related database objects.

A schema always belongs to one database. On the other hand, a database may have one or multiple schemas. For example, in our BikeStores sample database, we have two schemas: sales and production. An object within a schema is qualified using the schema_name.object_name format like sales.orders. Two tables in two schemas can share the same name so you may have hr.employees and sales.employees.

Built-in schemas in SQL Server

SQL Server provides us with some pre-defined schemas which have the same names as the built-in database users and roles, for example: dbo, guest, sys, and INFORMATION_SCHEMA.

> Note that SQL Server reserves the sys and INFORMATION_SCHEMA schemas for system objects, therefore, you cannot create or drop any objects in these schemas.

The default schema for a newly created database is dbo, which is owned by the dbo user account. By default, when you create a new user with the CREATE USER command, the user will take dbo as its default schema.