

## 24. Collation

Collation in SQL Server is used to keep the case sensitivity of schema and data. By default, Microsoft SQL Server is not case sensitive. In other words, we can say SQL Server is case insensitive. There are three types of collations.

- Ø Server Collation
- Ø Database Collation
- Ø Column Collation

### Server Collation

In the installation process, you can change the collation property. By default, it is case Insensitive. But changing the server collation after the installation is a difficult process.

### Database Collation

You can change the collation property of your database. If you configured your server using default settings, your default database collation is case insensitive. When you create a new database, the collation will be case insensitive.

### Find the Collation

Let's create a sample database;

```
CREATE DATABASE CollationTestDatabase
```

Use the following command to identify the collation of a database.

```
SELECT SERVERPROPERTY('collation');
```

Output:

The output may be one of the following properties.

SQL\_Latin1\_General\_CP1\_CI\_AS

SQL\_Latin1\_General\_CP1\_CS\_AS

If the database using default collation settings, the collation property may be SQL\_Latin1\_General\_CP1\_CI\_AS.

If you change your database a case sensitive

### Change the Collation to Case Insensitive

Use the following command to change the collation of your created database to case insensitive.

```
ALTER DATABASE [CollationTestDatabase] COLLATE SQL_Latin1_General_CP1_CI_AS;
```

SQL

```
SELECT collation_name FROM sys.databases
```

```
WHERE name = 'CollationTestDatabase'
```

### Change the Collation to Case Sensitive

Use the following command to change the collation of your created database to case sensitive.

Use

```
ALTER DATABASE [CollationTestDatabase] COLLATE SQL_Latin1_General_CP1_CS_AS;
```

below script to create several tables using the same name but different in cases. You can do so as CollationTestDatabase is a case sensitive database.

```
CREATE TABLE Customers(Id INT NOT NULL, PRIMARY KEY (Id));

CREATE TABLE customers(Id INT NOT NULL, PRIMARY KEY (Id));

CREATE TABLE CUSTOMERS(Id INT NOT NULL, PRIMARY KEY (Id));
```

You can view tables in the database.

You can keep case sensitive columns if the database is case sensitive.

### Change the Collation using SQL Server Editor

Select a database and Go to the database “Properties”. By selecting “Options” you will get the below window.

### Column Collation

Column collation is the sensitivity of columns for SQL queries. If the database is case sensitive then the default setting of columns is case sensitive. If you like you can change the settings.

Data is case sensitive in SQL Server. But columns are not case sensitive for queries by default. By changing the columns as case sensitive, queries will filter case sensitive data.

Refer below chart for case sensitive data. We can set columns as case sensitive or case insensitive even if the database is case sensitive or not.

Database	Columns
Case sensitive	Case sensitive
	Case insensitive
Case insensitive	Case sensitive
	Case insensitive

Following script shows how to add a case sensitive column to a table

```
ALTER TABLE Customers ADD [Password2] varchar(50) COLLATE
SQL_Latin1_General_CP1_CS_AS;
```

Following script shows how to modify the existing column to a case insensitive column to a table

```
ALTER TABLE Customers ALTER COLUMN [Password2] varchar(50) COLLATE
SQL_Latin1_General_CP1_CI_AS;
```

Run the following data script for the below examples.

Data Script:

```
CREATE TABLE Users(Id INT NOT NULL
, [Password] VARCHAR (50) COLLATE SQL_Latin1_General_CP1_CI_AS, PRIMARY KEY (Id));

INSERT Users(Id, [Password]) VALUES (1, 'Aaa'), (2, 'Bbb'), (3, 'Ccc')
, (4, 'Ddd'), (5, 'Eee'), (6, 'Fff');
```

User Table:

Use the following script to identify the correct user for id = 1.

```
DECLARE @Id INT = 1
DECLARE @Password VARCHAR(50) = 'AAA'

SELECT * FROM Users
WHERE Id = @Id AND [Password] = @Password
```

Output:

It gives the wrong result as the Password column is not case sensitive. We can correct the column collation to case sensitive as shown below.

Corrected Script:

```
ALTER TABLE Customers ALTER COLUMN [Password2] varchar(50) COLLATE  
SQL_Latin1_General_CP1_CS_AS;
```

Now the query gives no result as the password is not correct. It will give the result when the password is "Aaa".