



SOFTWARE ENGINEERING



DATABASE MANAGEMENT SYSTEMS

**STRUCTURED QUERY LANGUAGE (SQL) WITH
MICROSOFT SQL**

Lesson 06 – Structured Query Language (SQL) With Microsoft SQL Server 2019

Database Management System (DBMS)

A DBMS is a set of software programs that can be used to create and maintain a database.

Examples:

- MS Access
- MySQL
- SQL Server
- Oracle
- IBM DB2
- Mongo DB
- H2

Structured Query Language (SQL)

- SQL is used to communicate with a database.
- It acts as an interface language between the user and the database.
- It is a Keyword-based language.
- Each statement begins with a unique keyword.
- Statements are not case sensitive.
- SQL became a standard of the American National Standards Institute (ANSI) in 1986, and of the International Organization for Standardization (ISO) in 1987.
- Although SQL is an ANSI/ISO standard, there are different versions of the SQL language. However, to be compliant with the ANSI standard, they all support at least the major commands (such as SELECT, UPDATE, DELETE, INSERT, WHERE) in a similar manner.

Install SQL Server 2019

To install SQL Server 2019 visit following link and download SQL Server 2019 Developer Edition.

<https://www.microsoft.com/en-us/sql-server/sql-server-downloads>

Important Facts to Remember before Install SQL Server

- *SQL Server 2019 only support Windows 8.1 operating system or upper versions. If you have old versions of Windows Operating System you can install SQL Server 2014.*
- *If you are operating system is Linux or MAC, you need Docker App.*

Step 01: Visit <https://www.microsoft.com/en-us/sql-server/sql-server-downloads> and download Developer Edition.

The screenshot shows the Microsoft SQL Server Downloads page. At the top, there are two main sections: "SQL Server 2019 on-premises" and "SQL Server 2019 on Azure". Below each section is a "Download free trial" button. In the center, there is a heading "Or, download a free specialized edition" with two options: "Developer" and "Express". The "Developer" option has a blue "Download now" button, which is circled in red. The "Express" option also has a "Download now" button. At the bottom, there is a section titled "Install SQL Server 2019 on Windows, Linux, and Docker containers" with icons for Windows, Linux, and Docker.

Try SQL Server on-premises or in the cloud

SQL Server 2019 on-premises
Build intelligent, mission-critical applications using a scalable, hybrid data platform for demanding workloads. Get started with a 180-day free trial of SQL Server 2019 on Windows.

SQL Server 2019 on Azure
Get started with SQL Server 2019 on Azure Virtual Machines in minutes with preconfigured images on Linux and Windows. Take advantage of unique built-in security and manageability to automate tasks like patching and backup, and save with Azure Hybrid Benefit by mixing your existing on-premises licenses.

Download free trial >

Get started in Azure >

Or, download a free specialized edition

Developer
SQL Server 2019 Developer is a full-featured free edition, licensed for use as a development and test database in a non-production environment.
Download now >

Express
SQL Server 2019 Express is a free edition of SQL Server. Ideal for development and production for desktop, web, and small server applications.
Download now >

Install SQL Server 2019 on Windows, Linux, and Docker containers

Windows

Linux

Docker

Figure 6.0.1 Step 01: Download SQL Server 2019

Step 02: Select Basic Features then accept License Agreements. Keep default location to C: drive and install.

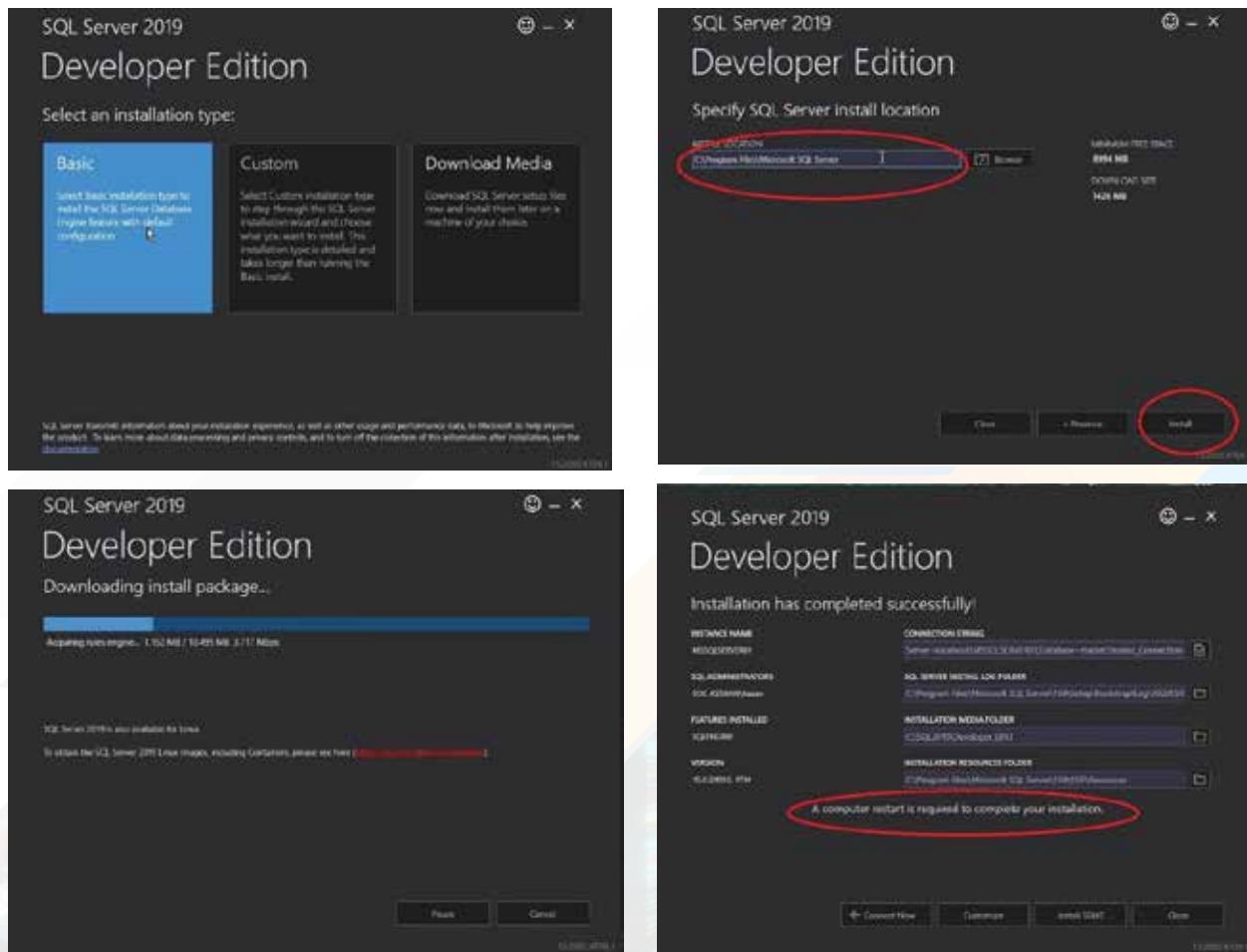


Figure 6.0.2 Step 02: Install SQL Server 2019

Install SQL Server Management Studio 2019

After you install SQL Server 2019 you need to download and install SQL Server Management Studio. SQL Server Management Studio is the development environment which help you to create and maintain the database. SQL Server Management Studio is the Tool and SQL Server is the main important service which is run inside the services.

Step 03: Visit <https://docs.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms?view=sql-server-ver15> and download SQL Server Management Studio (SSMS)

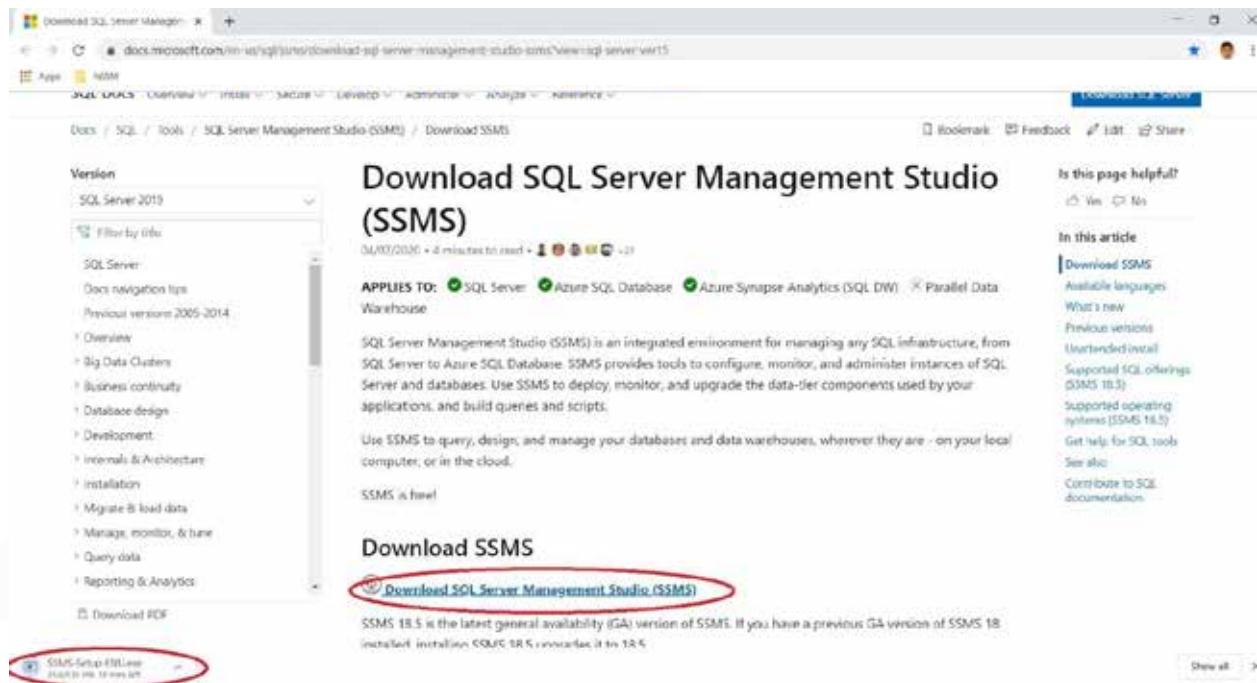


Figure 6.0.3 Step 03: Download SQL Server Management Studio

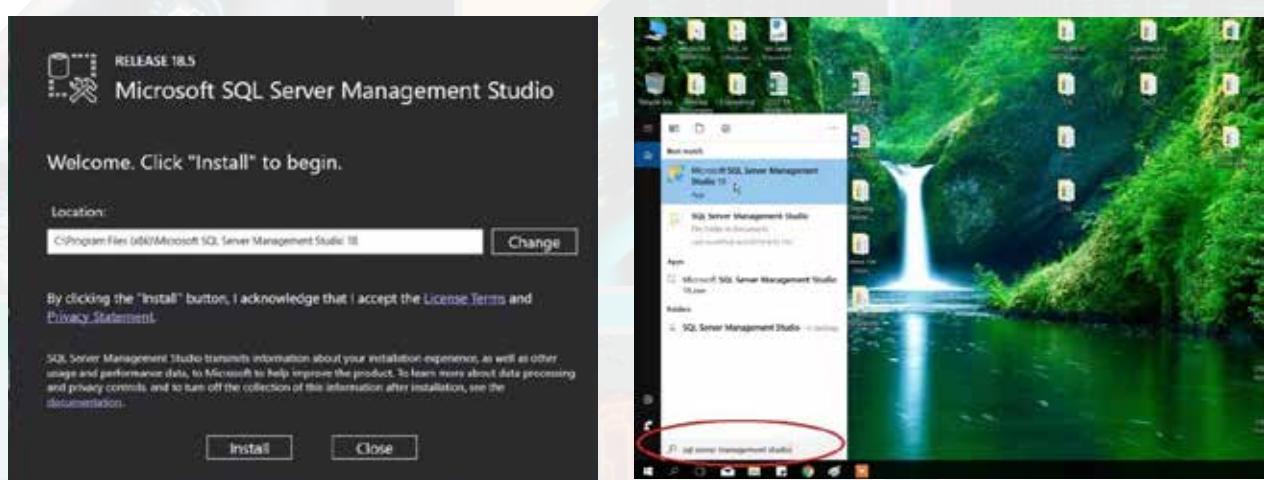


Figure 6.0.4 Install SQL Server Management Studio

Step 04: Now using SQL Server Management Studio you can connect with SQL Server. **SQL Server Name will be your computer name or else local.** You are connecting to that SQL Server object through the SQL Server Management Studio.

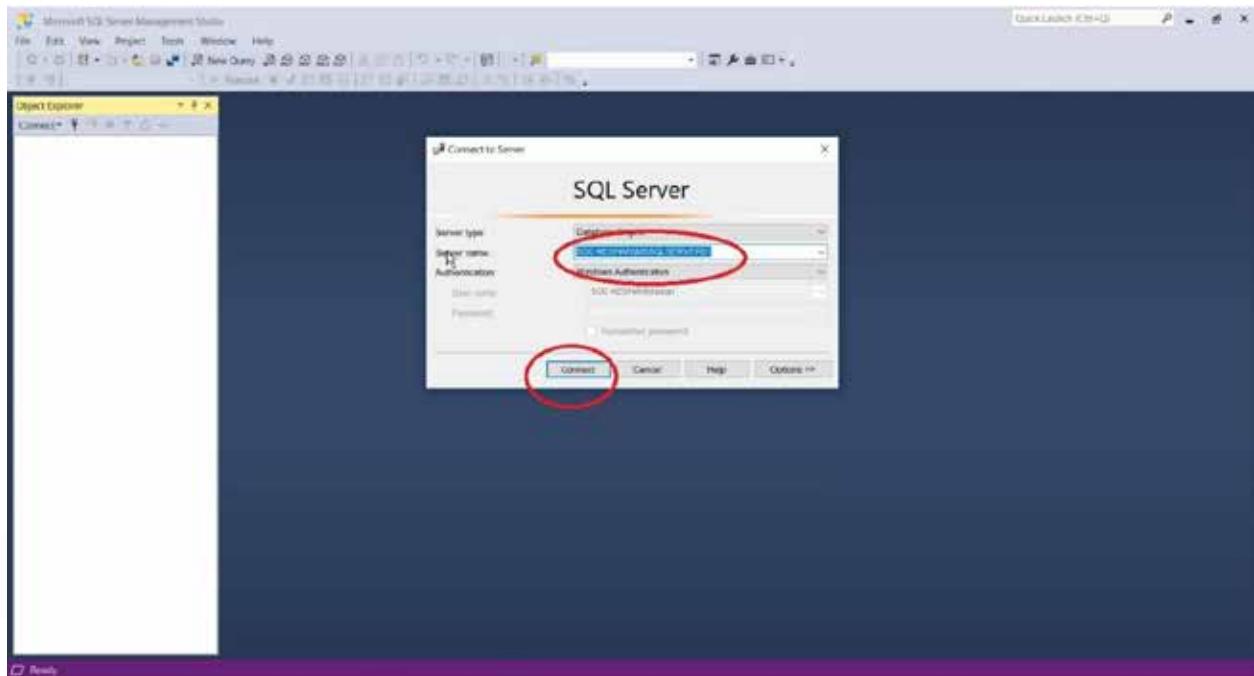


Figure 6.0.5 Launch and Connect with SQL Server using Management Studio

Still getting Errors?
Refer Practical
Guide and solve
your issues



Important Facts to Remember

- *This tool is Developer Version and you cannot use for Enterprise purpose.*
- *Always use genuine developer versions for education purpose, using your office 365 email you can access to many Microsoft Tools.*

SQL consists of three main types of statements

Data Definition Language (DDL)

These statements are used to create new objects, alter the structure of existing objects, or to remove objects from the system. These commands cannot be used to modify data.

CREATE, DROP, ALTER, RENAME, DESCRIBE, TRUNCATE

Data Manipulation Language (DML)

These statements change the data in the database.

INSERT, UPDATE, DELETE, SELECT

Data Control Language (DCL)

These statements control the access of the data in the database and determines how, when, and whom can manipulate data. They provide commands to specify access rights to tables, and views.

GRANT, REVOKE, ROLLBACK, COMMIT