ASP.NET Core Certification Training Lab Guide

ScholarHat

ASP.NET Core Training: Coding Lab Guide

Our learn-by-doing method enables you to build practical/coding experience that sticks. 95% of our learners say they remember more when they learn by doing hands-on which is required to translate knowledge into real-world results.

The recommended hardware and software requirements for our training are given below:

Hardware Requirements

- 1.8 GHz or faster 64-bit processor; Intel i5 or better recommended.
- 4 GB or higher RAM; 8GB recommended.
- 40 GB of available hard disk space.
- A higher display resolution; 1920 X 1080 or higher is recommended.

Software Requirements

- Windows 10 or Higher
- Visual Studio 2022 Community or higher
- Latest Visual Studio Code
- SQL Server Management Studio
- SQL Server 2019 Express or higher
- IIS Web Server
- Internet Connectivity

Software Download Links

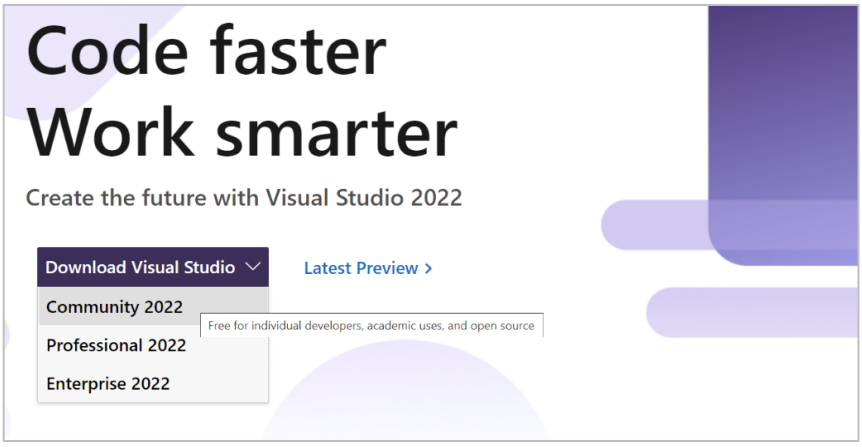
- Visual Studio 2022 Community or Higher: https://visualstudio.microsoft.com/thank-you-downloading-visual-studio/?sku=Community&rel=17
- SQL Server 2019 Express or Higher: https://go.microsoft.com/fwlink/?linkid=866658
- SQL Server Management Studio: https://aka.ms/ssmsfullsetup
- Visual Studio Code: http://code.visualstudio.com/

1. Visual Studio 2022 Installation

Visual Studio is an Integrated Development Environment (IDE) developed by Microsoft to develop GUI (Graphical User Interface), Web applications, web apps, mobile apps, cloud, and web services, etc.

To install and use Visual Studio for commercial purposes one must buy a license from Microsoft. For learning (non-commercial) purposes, Microsoft provided a free Visual Studio Community Version. We will use the Visual Studio Community Version 2022.

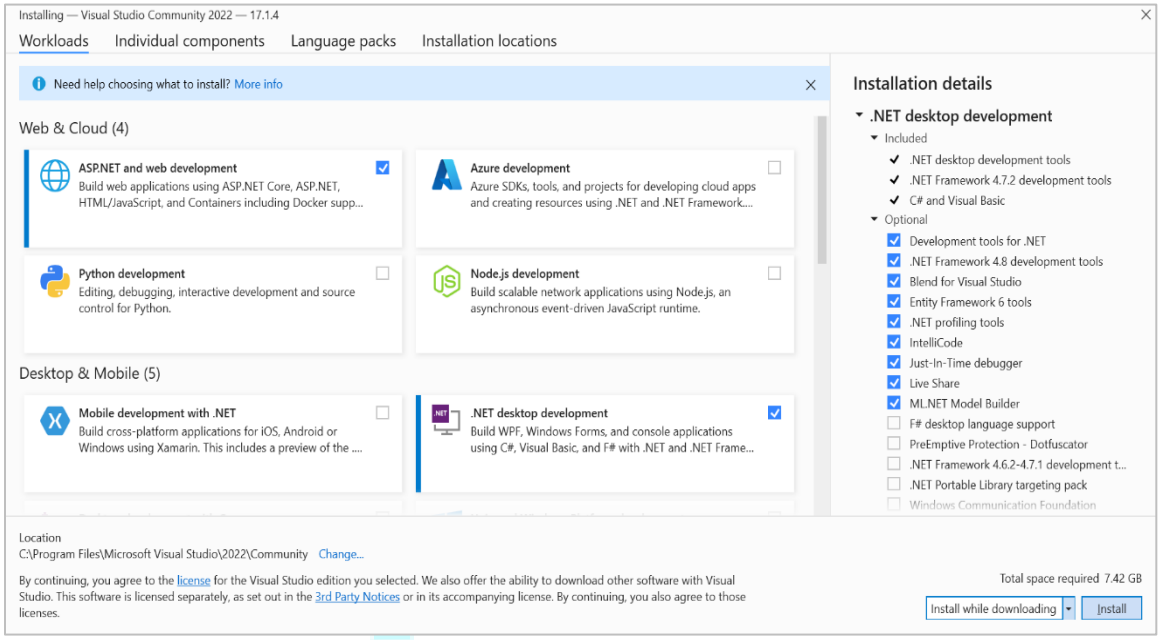
- **Step 1: Download the** https://visualstudio.microsoft.com/downloads/

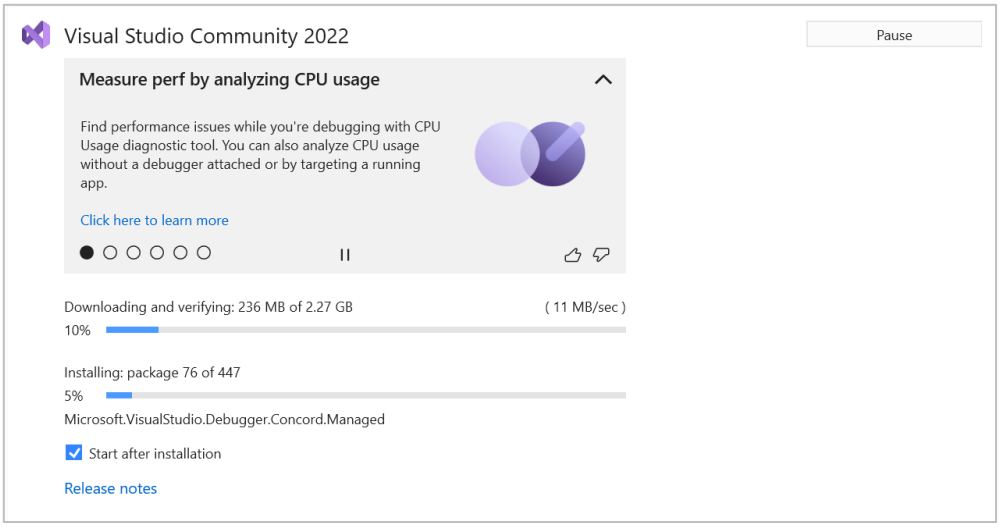


- **Step 2: Run the .exe file and follow the instructions to install the Visual Studio Community Version on the system.**

- **Step 3: Select ASP.NET and web development and .NET desktop development for windows forms and console applications etc. from the options and click to install in the bottom right corner as shown below.**

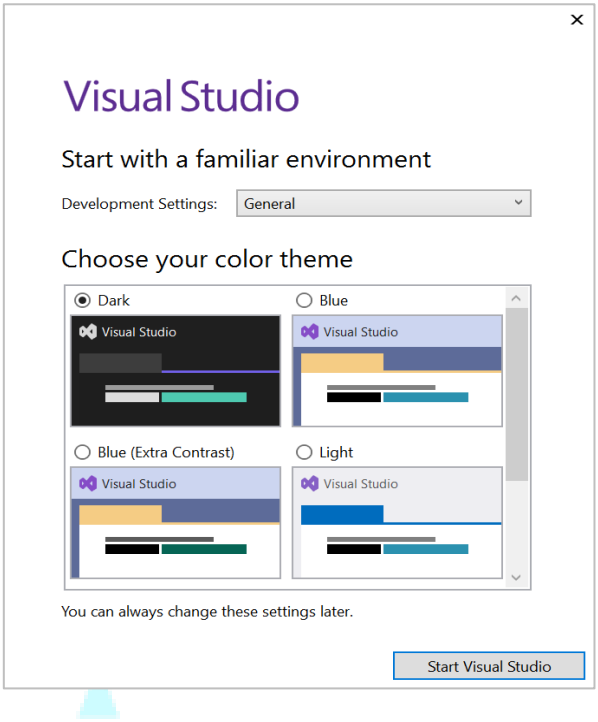
We are selecting both options. We can also modify it after installation.



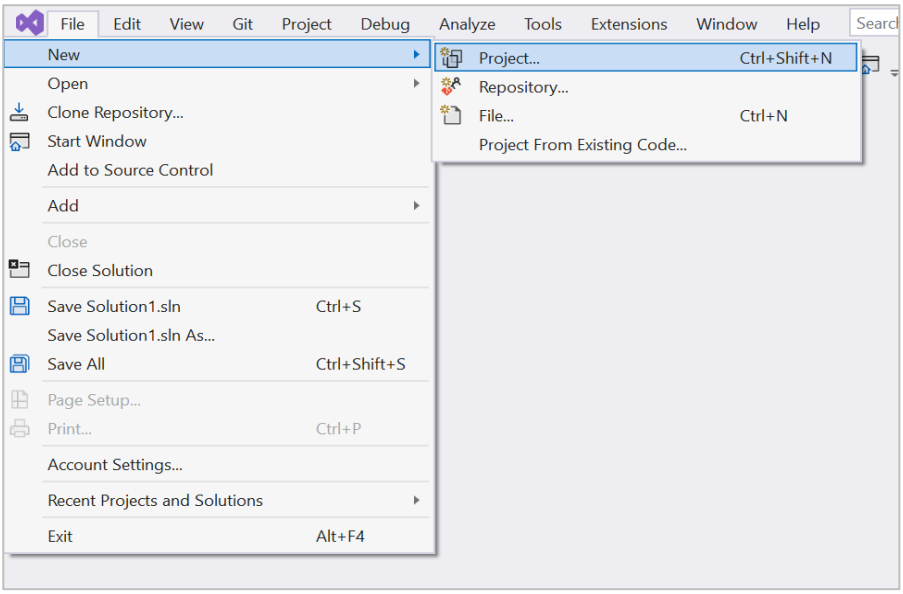


- **Step 4: Click on launch and then it displays the sign-in step which is completely optional.**
  The dialog box will appear to choose the Development Settings and color theme. You need not to change the development settings.

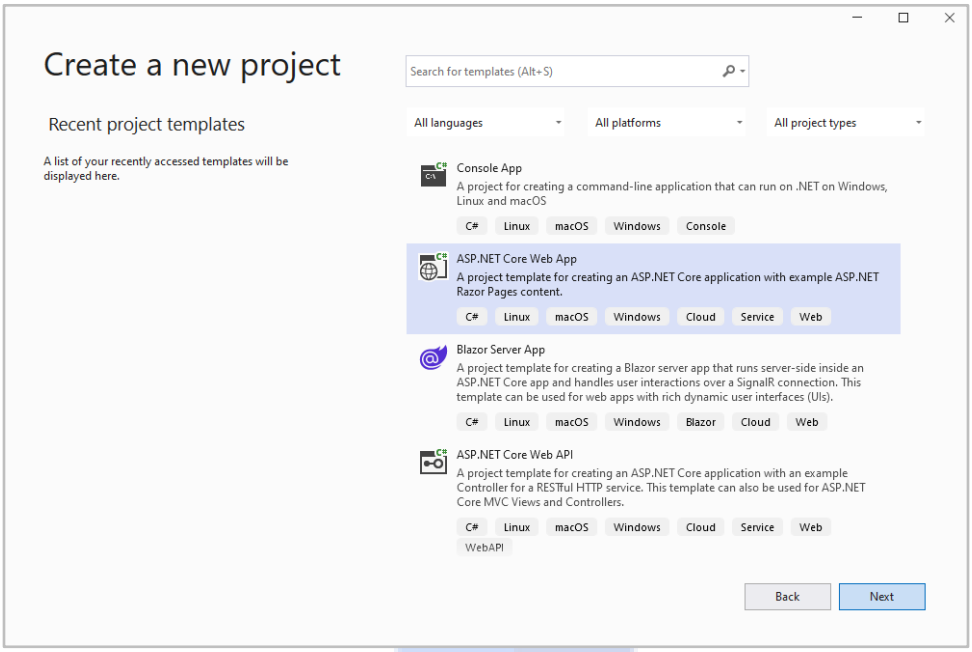
  Once select the required options, click on the Start Visual Studio option.



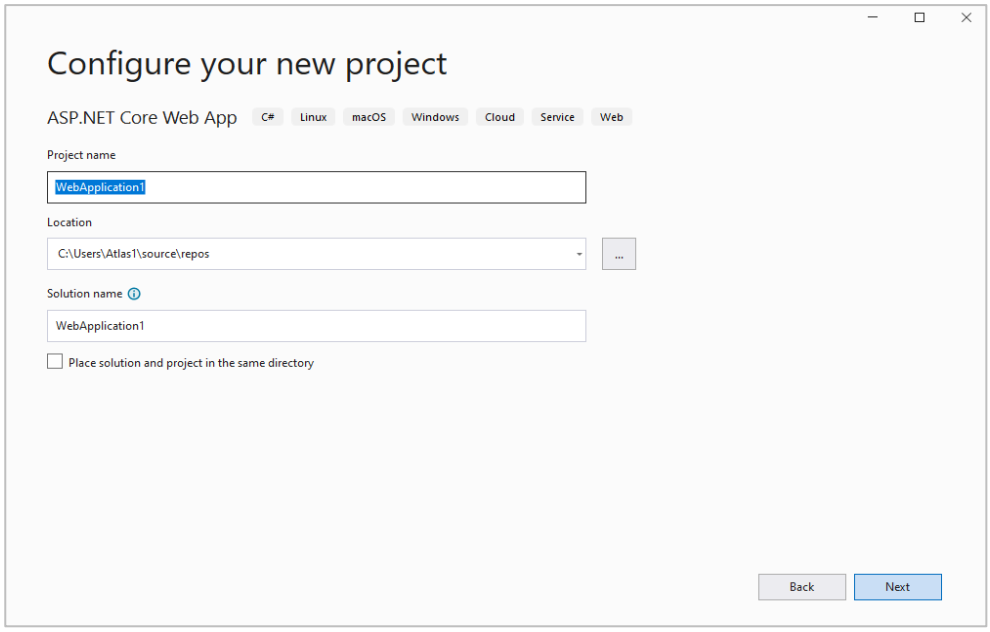
- **Step 5: To create a new ASP.NET Web application, Go to File –> New –>Project like as shown below:**



- **Step 6: As soon as we select the project, we will notice the different options of the Project.**
  Select ASP.NET Core Web App and click *Next*.

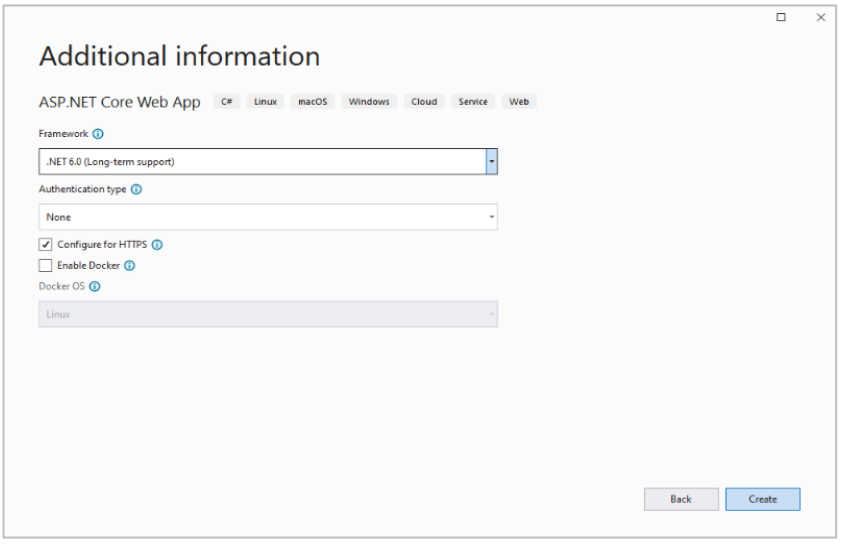


- **Step 7: The next step is to configure the project. Here, we have to choose the Project Name and Solution name and click on Next Button.**
  We can also change the location of the project. We can put a different name for the solution as the solution is like a container for projects. We are putting the Project name and Solution name as WebApplication1 as shown in the below screenshot.

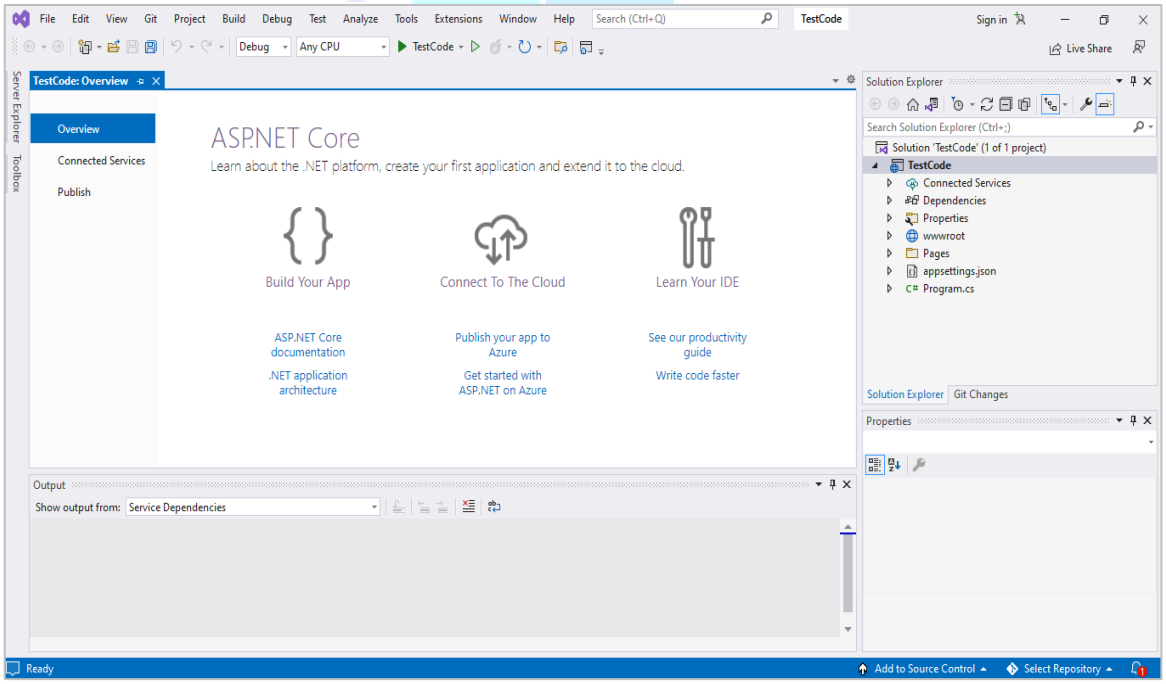


After Clicking the Next button, the Additional Information dialog box appears.

You don’t have to modify anything. Just click on Create button.



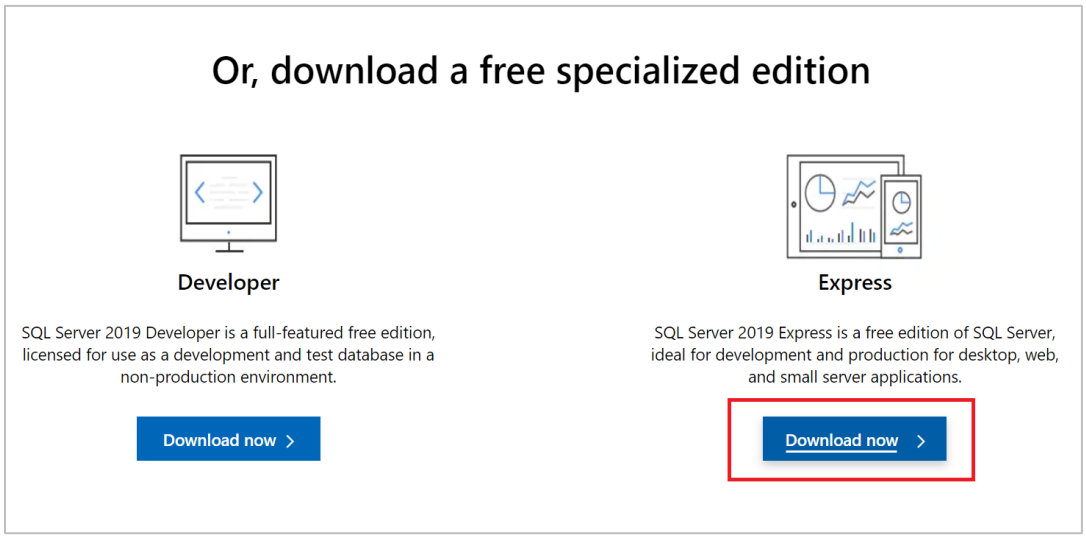
- **Step 8: After Clicking on Create, Your Project is being created as shown in the following image.**
  Visual Studio has been successfully installed. You’re all set!



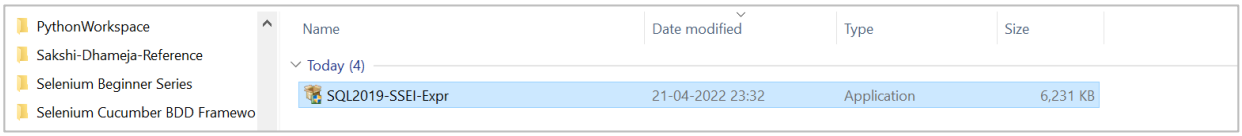
2. SQL Server 2019 Express Installation

MS SQL Server Express 2019 is a free version of Microsoft's SQL Server relational database management system used to develop databases and SQL queries, manipulate data, and perform database-related tasks that do not require large volumes of database storage. We are going to install SQL Server 2019 Express Edition on Windows Server 2019.

- **Step 1: Before we begin, head over to the https://www.microsoft.com/en-us/sql-server/sql-server-downloads and download SQL Server 2019 Express Edition.**

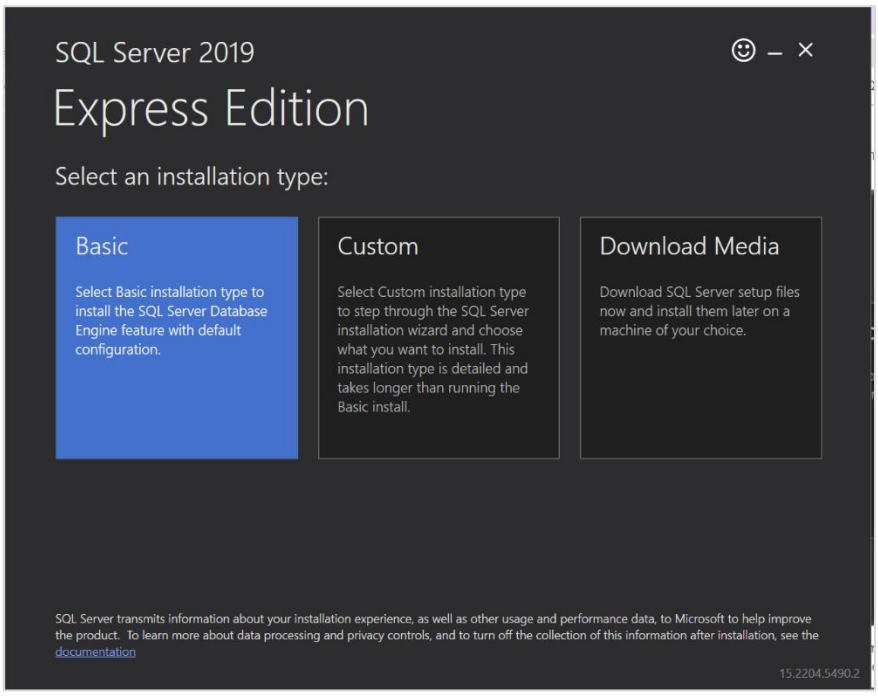


- **Step 2: An .exe file will be downloaded to your system. Double Click that file for further installation.**

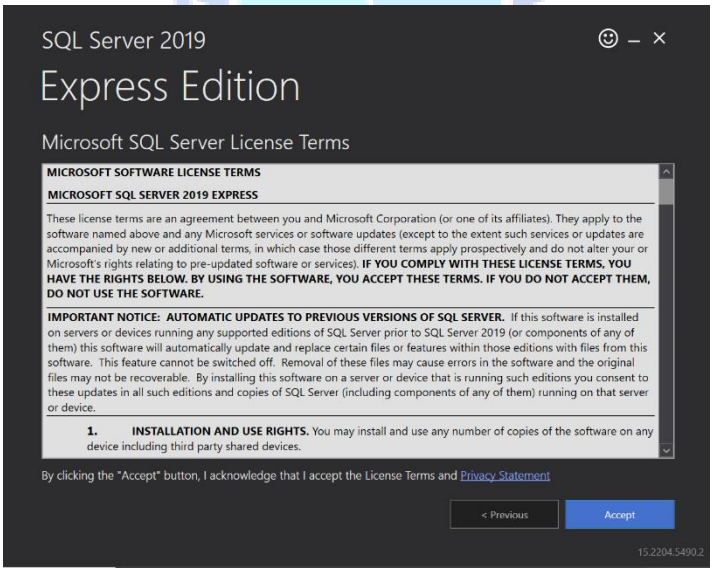


- **Step 3: After Double Clicking that .exe file, we have to choose our installation type.**

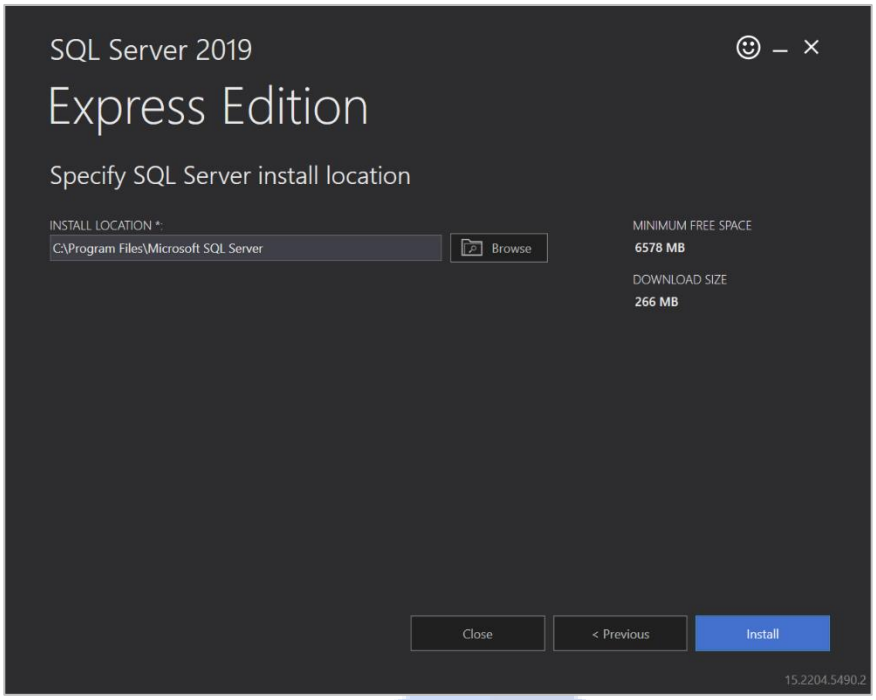
Let's start with Basic type as it will install default packages by downloading them from the internet whereas Custom Type provides customized features of SQL Server.



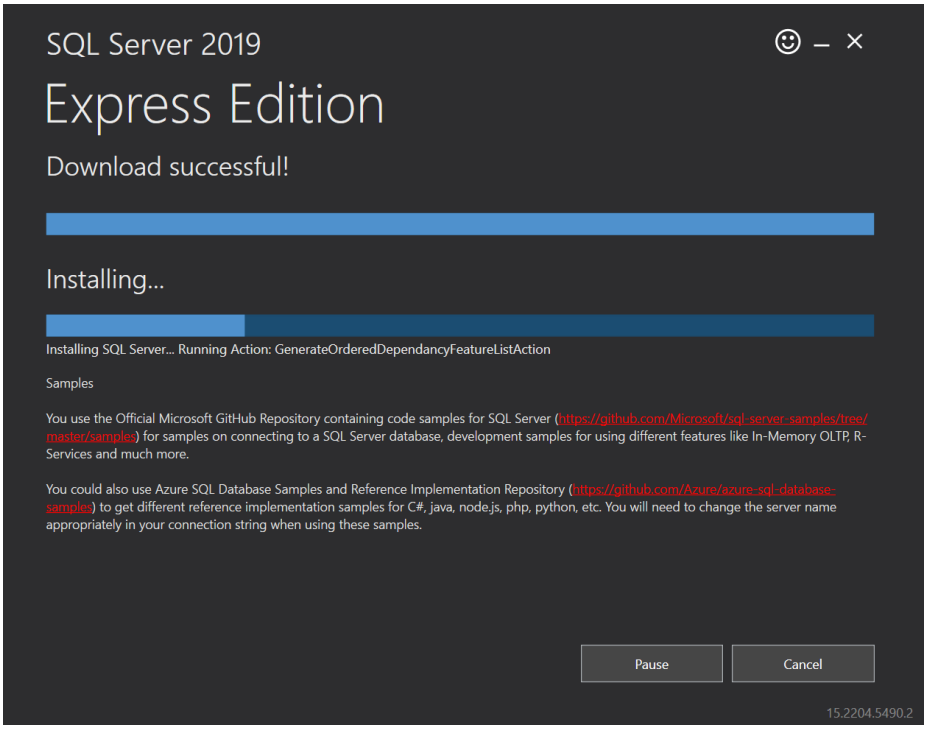
Step 4: Accept the License Agreement.



- **Step 5: After that, Specify the location for the install package and click install.**



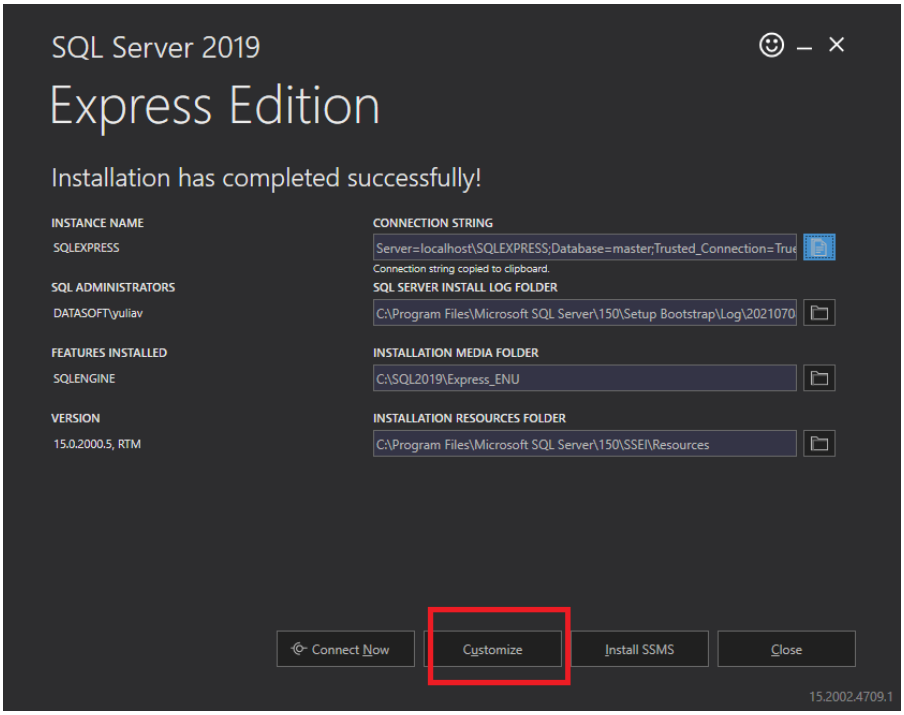
Step 6: After launching the installation process, you will see a progress bar informing that the install package is being downloaded and that SQL Server Express is being installed.



- **Step 7: After the installation has been completed, we can do the following:**

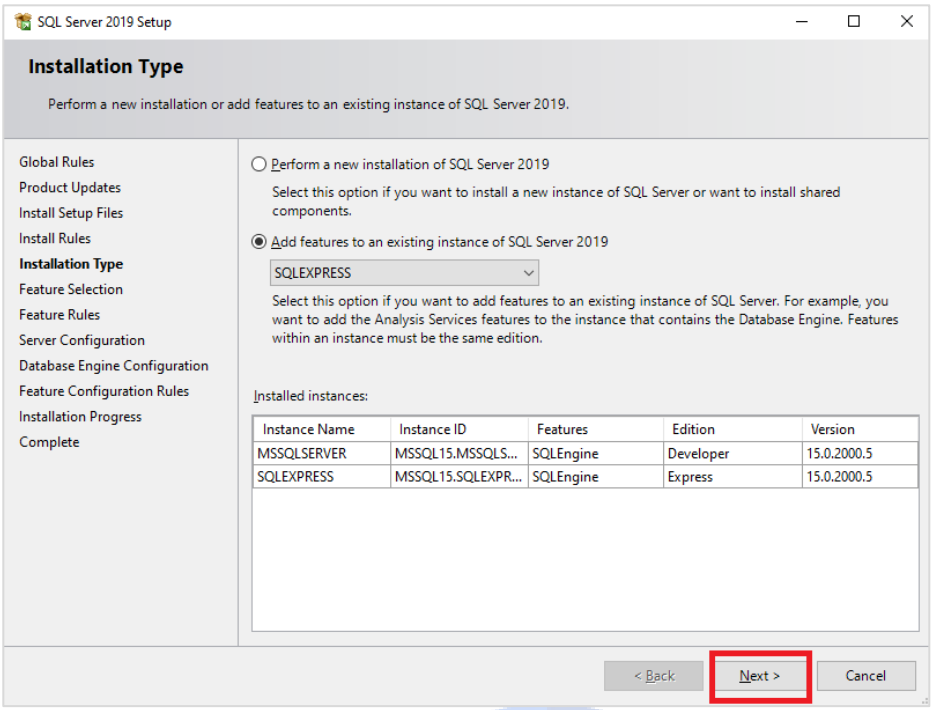
  - Connect to the SQL Server we have just installed via the sqlcmd utility.
  - Launch the SQL Server setup to customize the default configuration for the installation.
  - Install SQL Server Management Studio.
  - Close the installer.

Let's customize or modify the configuration of the SQL Server 2019 Express Edition we have just installed.

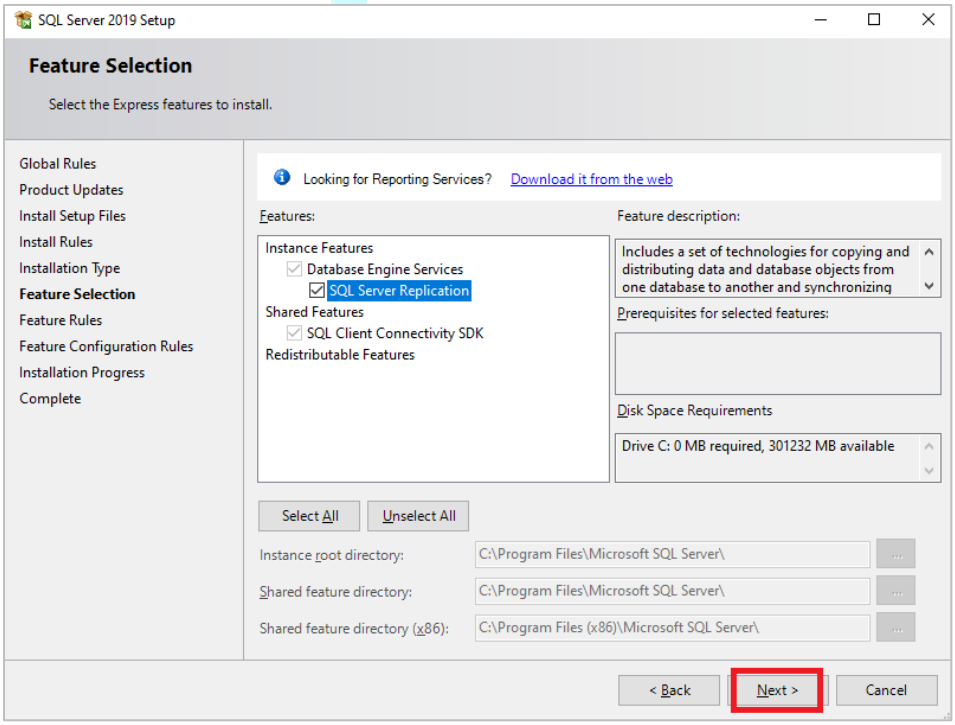


- **Step 8: The SQL Server 2019 Setup wizard open on the Installation Type tab where you choose either to install a new instance or modify the existing one.**

Here, we are adding features to an existing instance of SQL Server 2019. Click ‘Next’.

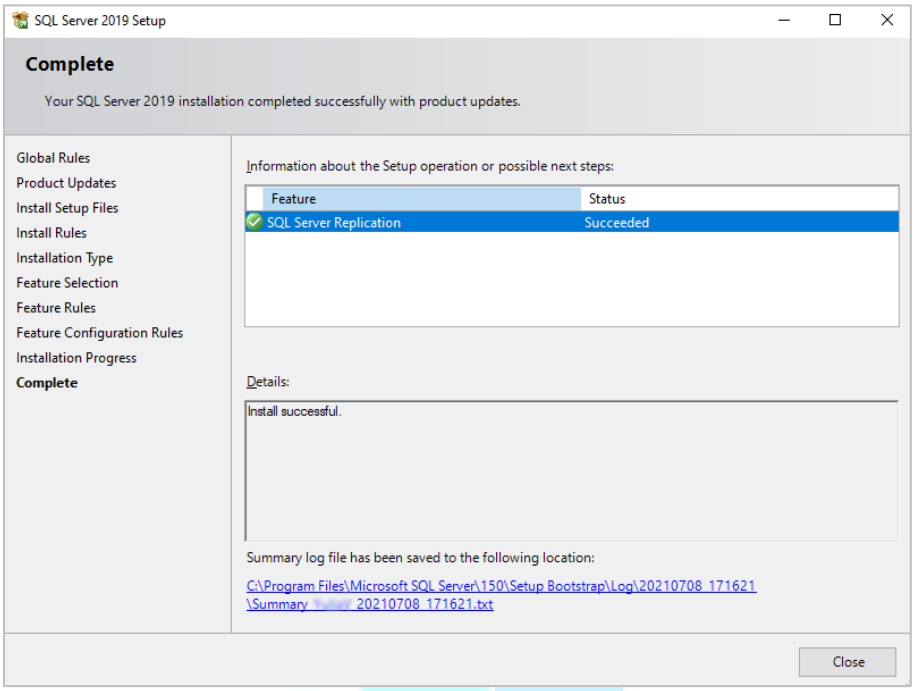


- **Step 9: On the Feature Selection tab, select the instance features to be installed. Click Next.**



- **Step 10: Following that, the installation starts.**

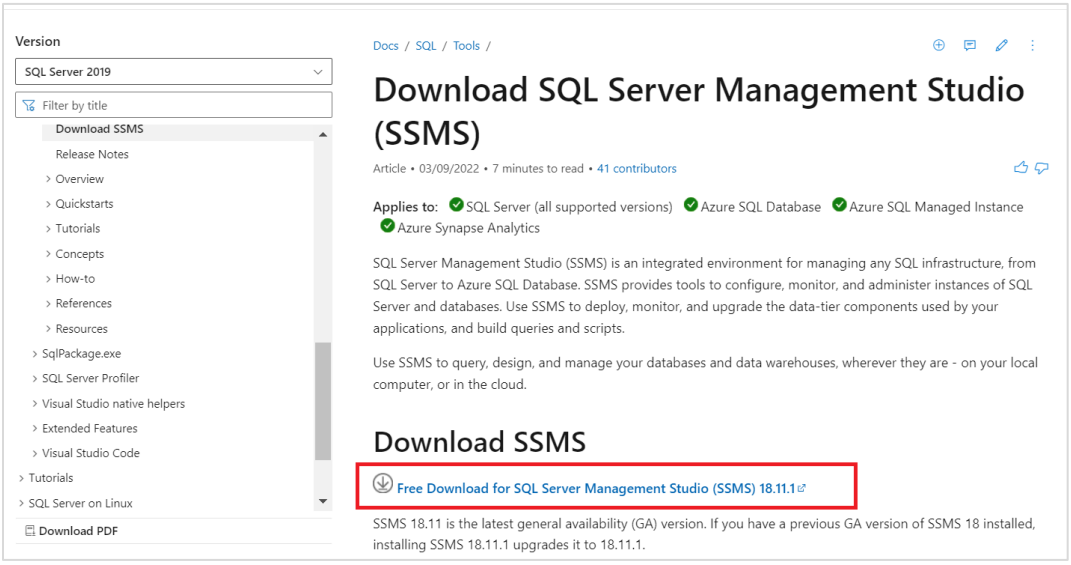
After the installation is complete, the Complete tab opens displaying the features installed or failed. In addition, you can view the log file for the feature.



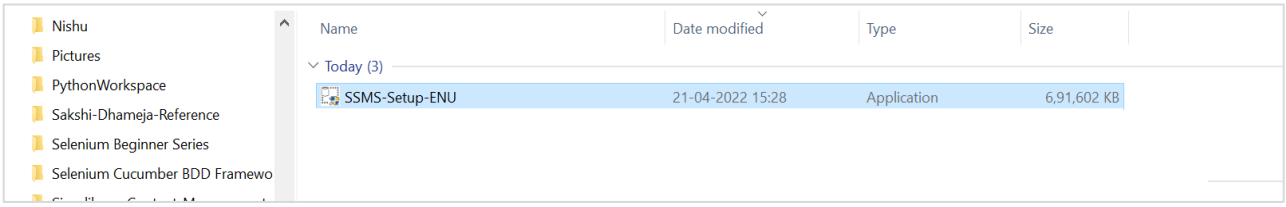
2.1 SQL Server Management Studio (SSMS) Installation

SQL Server Management Studio (SSMS) is an integrated environment for managing any SQL infrastructure. SSMS provides a single comprehensive utility that combines a broad group of graphical tools with many rich script editors to provide access to SQL Server for developers and database administrators of all skill levels.

- **Step 1: Download the SQL Server Management Studio - https://docs.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms?view=sql-server-ver15**

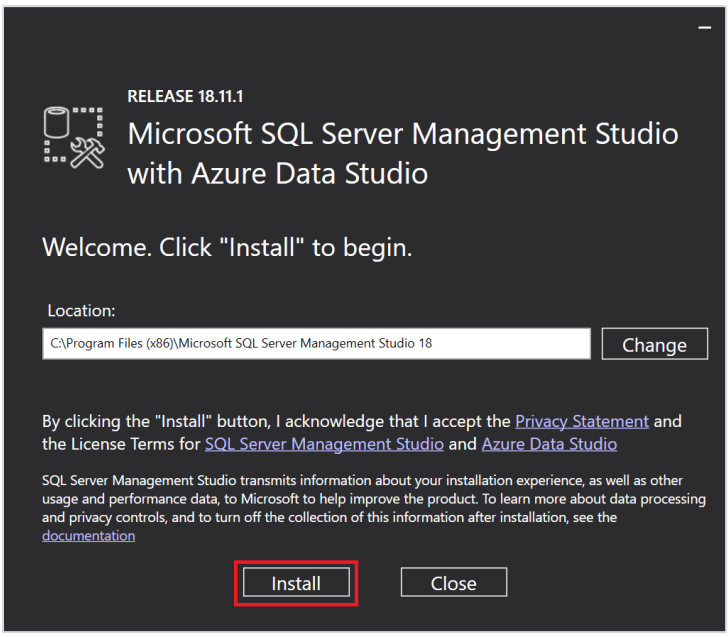


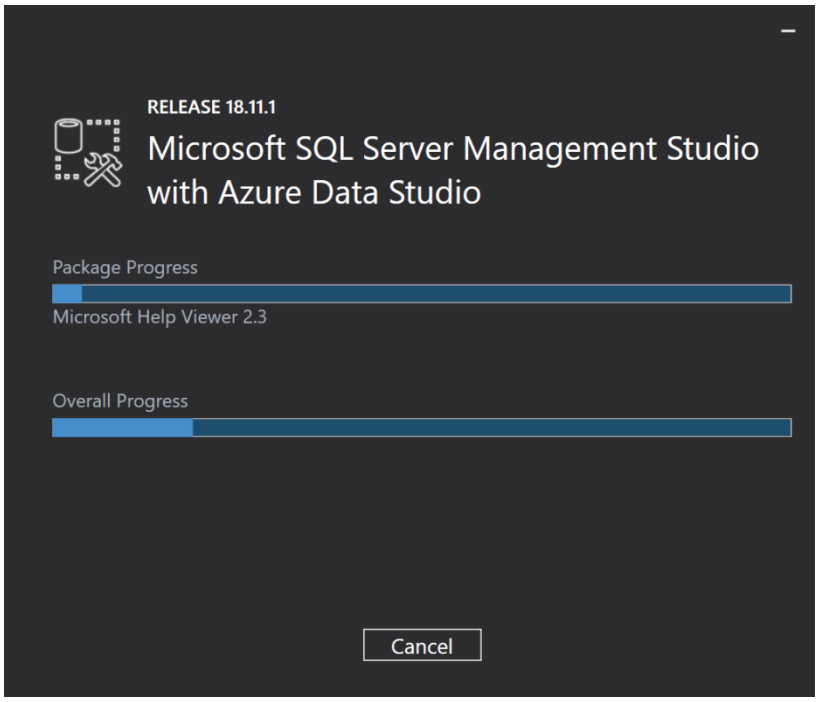
- **Step 2: Once the download is complete, go to the downloads folder in your system.** Find the **SSMS-Setup-ENU.exe** and double click to install SSMS.



- **Step 3: An SSMS (SQL Server Management Studio) installation wizard appear.**

Click on the **Install** button to start installing SSMS. This will take a few minutes to complete installation.





- **Step 4: After the completion of Installation, Restart the server.**
  Finally, SQL Server Management Studio (SSMS) is installed on your Server.

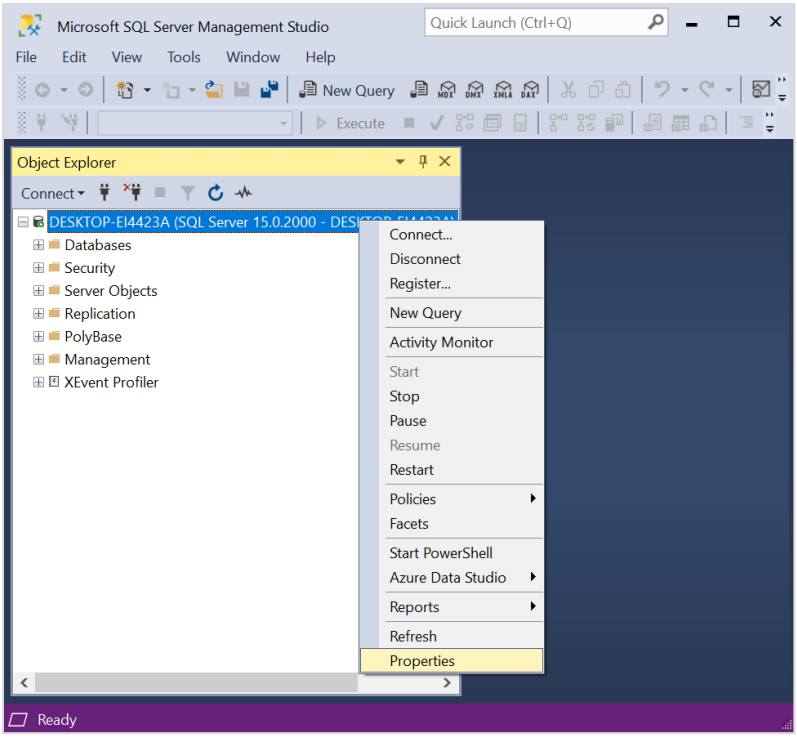
2.2 Change SQL Server to Mixed Role Authentication:

It is considered best practice to configure SQL Server instance to allow only Windows authentication. However, some situations require that SQL Server authentication be used. There are two methods to change SQL Server to mixed mode authentication after installation.

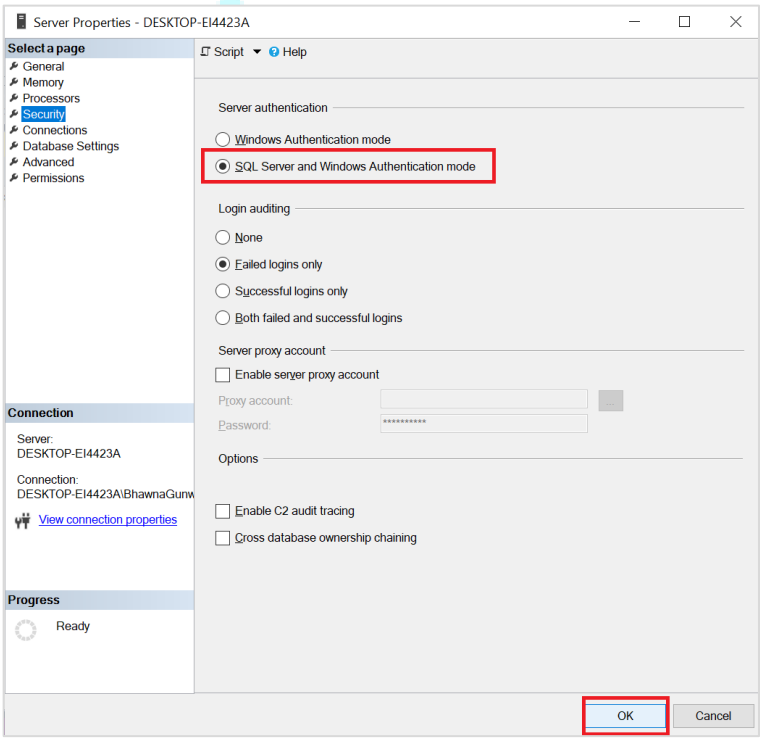
Step 1: Enable Mixed Mode Authentication in Management Studio.

As long as you can connect to SQL Server with Windows authentication, you can enable mixed-mode authentication easily using SQL Server Management Studio.

1. Login into SQL Server with SQL Server Management Studio.
2. In Object Explorer, right-click the name of the server that you wish to reconfigure and select Properties from the menu that appears.



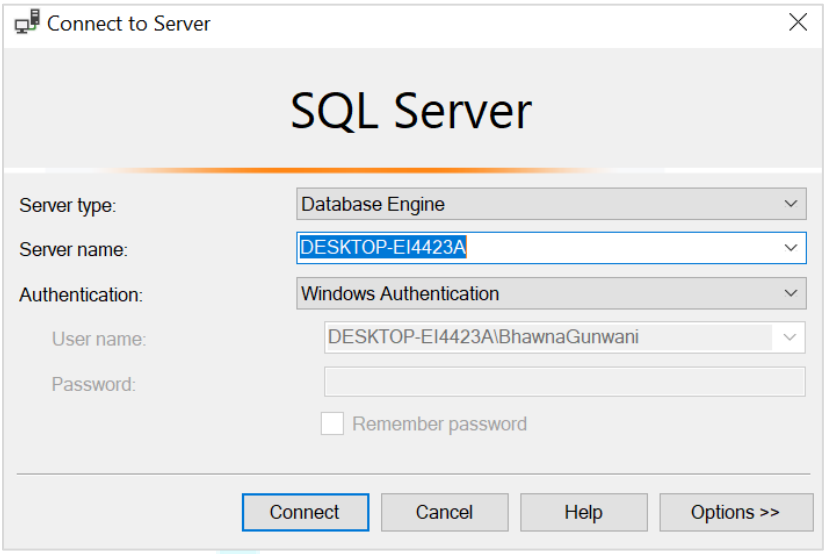
3. This displays the Server Properties dialog box. Select the Security tab and you can then choose SQL Server and Windows Authentication mode (also known as mixed mode authentication).



4. Click OK to save the changes and restart the SQL Server service.

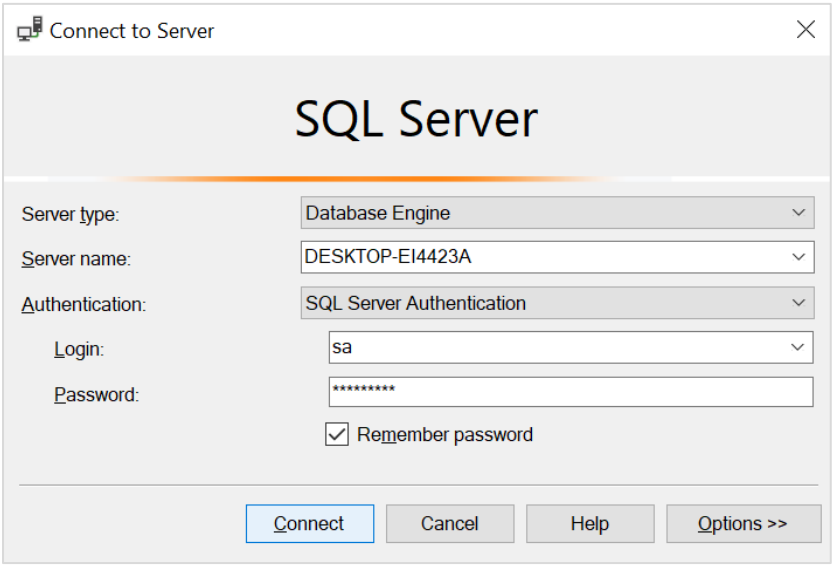
Step 2: To Connect with Windows Authentication Mode:

1. Go to the File.
2. Click on “Connect Object Explorer”.
3. Server name will be your System Name. If you don’t get it, you can browse for more.
4. By default, Windows Authentication is selected. Then, just Click on **Connect**.



Step 3: To Connect with SQL Server Authentication Mode:

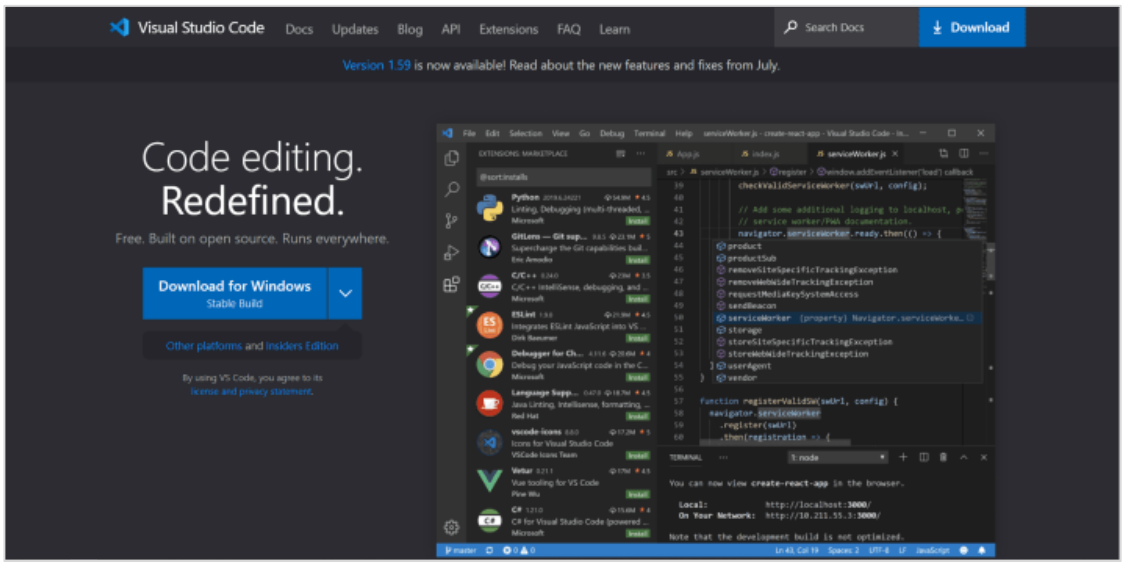
1. Go to the File.
2. Click on ‘Connect Object Explorer’.
3. From the Authentication drop-down menu, Select SQL Server Authentication.
4. By default, Login name will be **sa** (System Admin).
5. Password will remain same that you’ve entered while installing SQL Server.
6. Click on **Connect**.



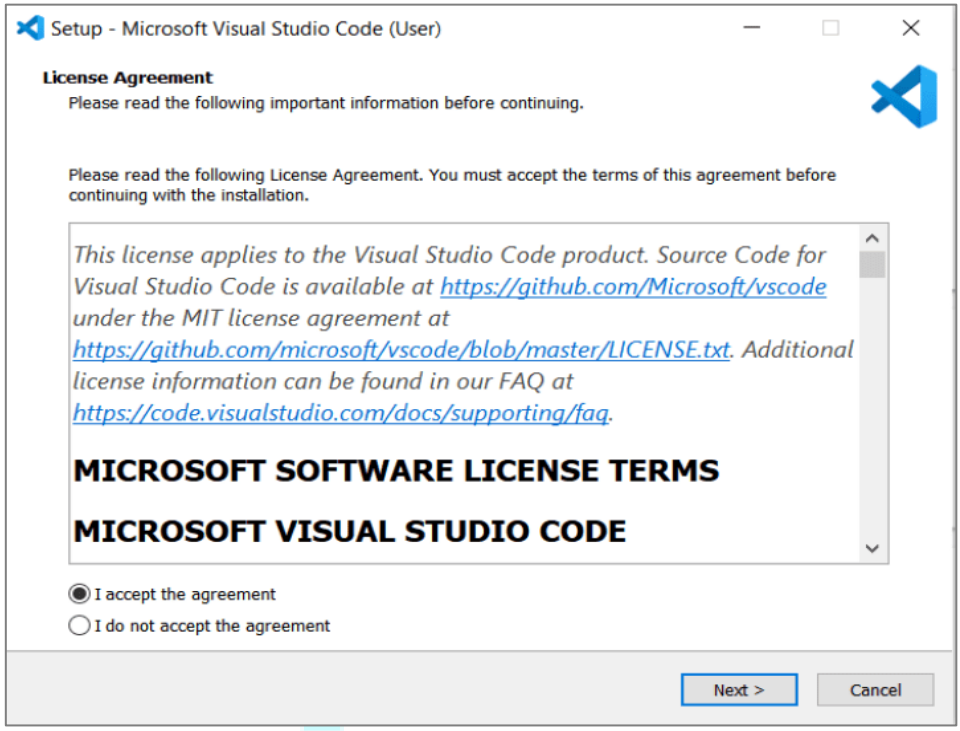
3. Visual Studio Code Installation

VS Code is an open-source code editor developed by Microsoft for Windows, Linux, and Mac OS platforms. Here we discuss the steps to install Visual Studio Code or VS code on Windows. It has built-in support for TypeScript, JavaScript, Node.js, and almost all programming language/library/framework-based plugins are available in VS studio right now.

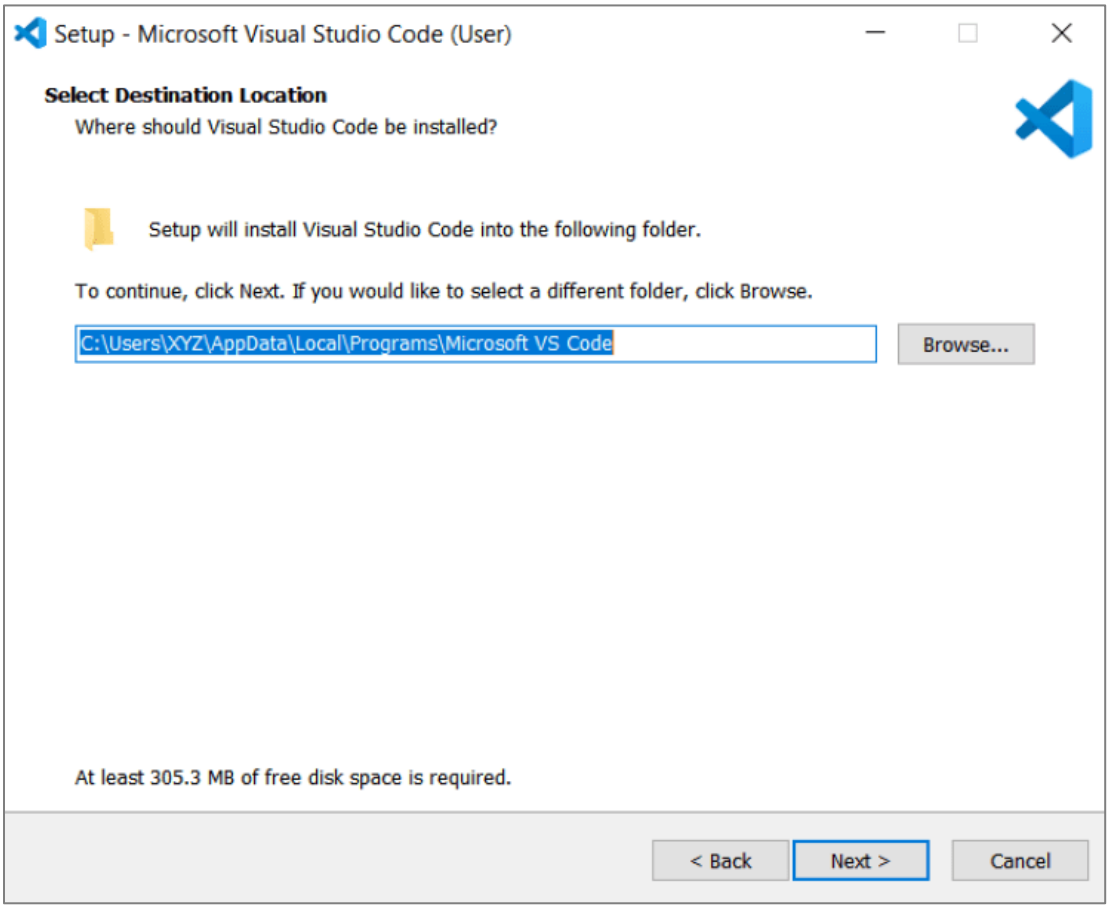
- **Step 1: Go to https://code.visualstudio.com/ and download the Setup file according to your Operating System.**



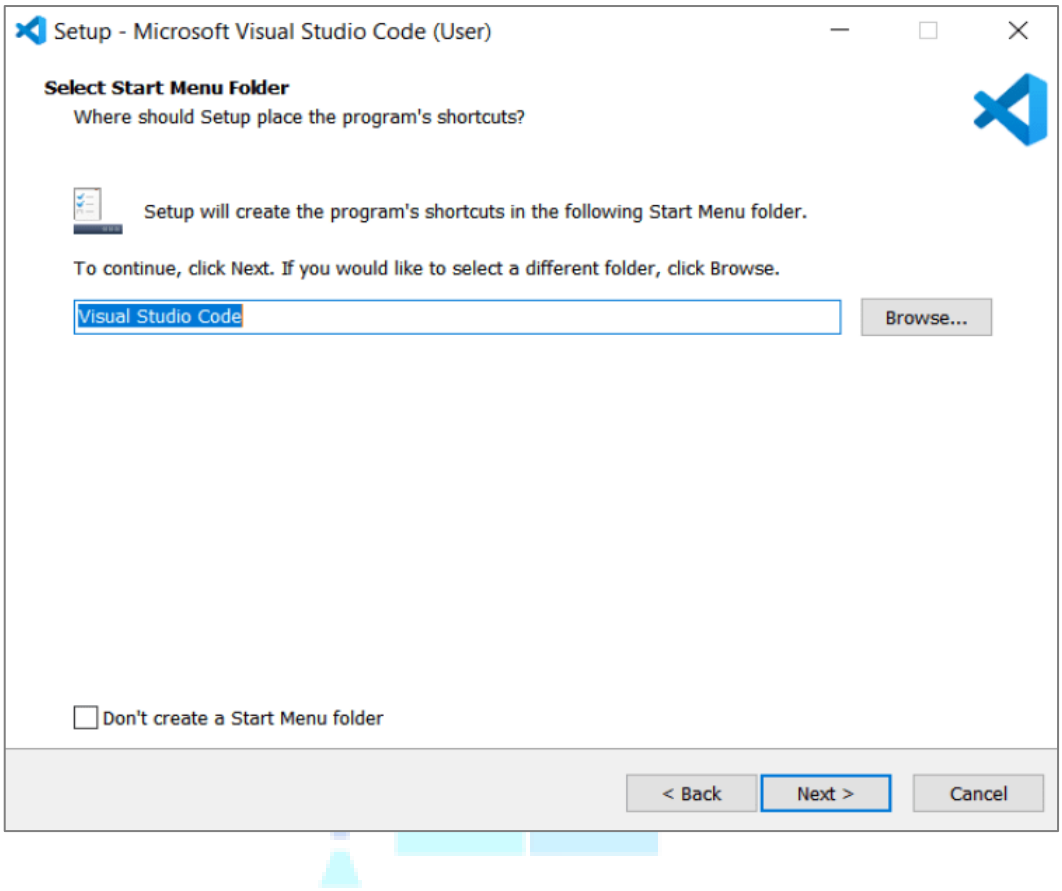
- **Step 2: After Downloading the file from the link, open the installer.**
- **Step 3: Accept the license agreement and click on Next.**



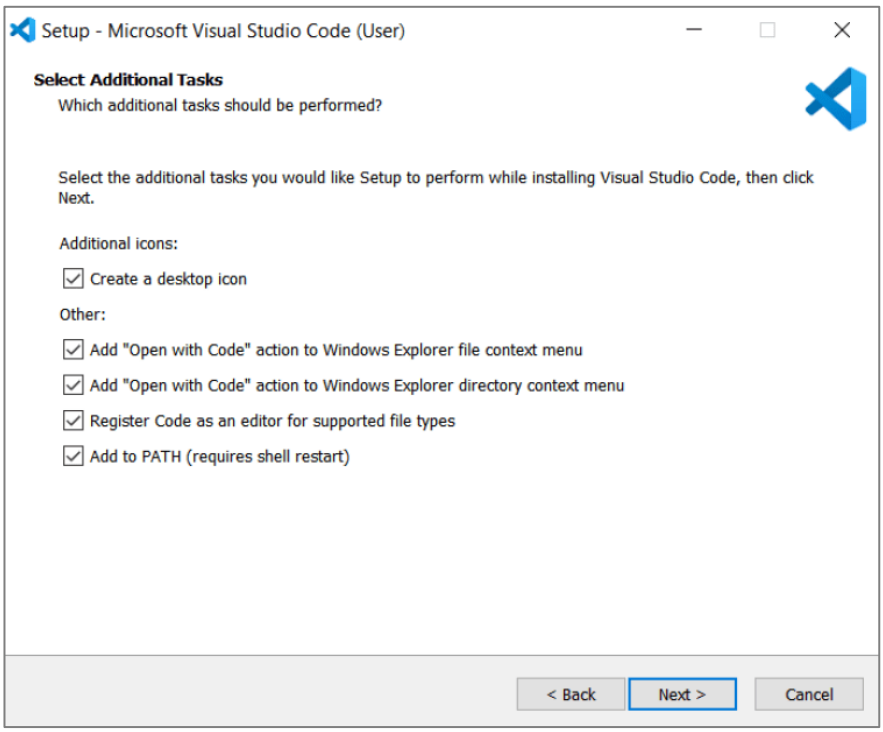
- **Step 4: You can Select the destination where you need to install, by default it will be installed in the folder given in the below image.**



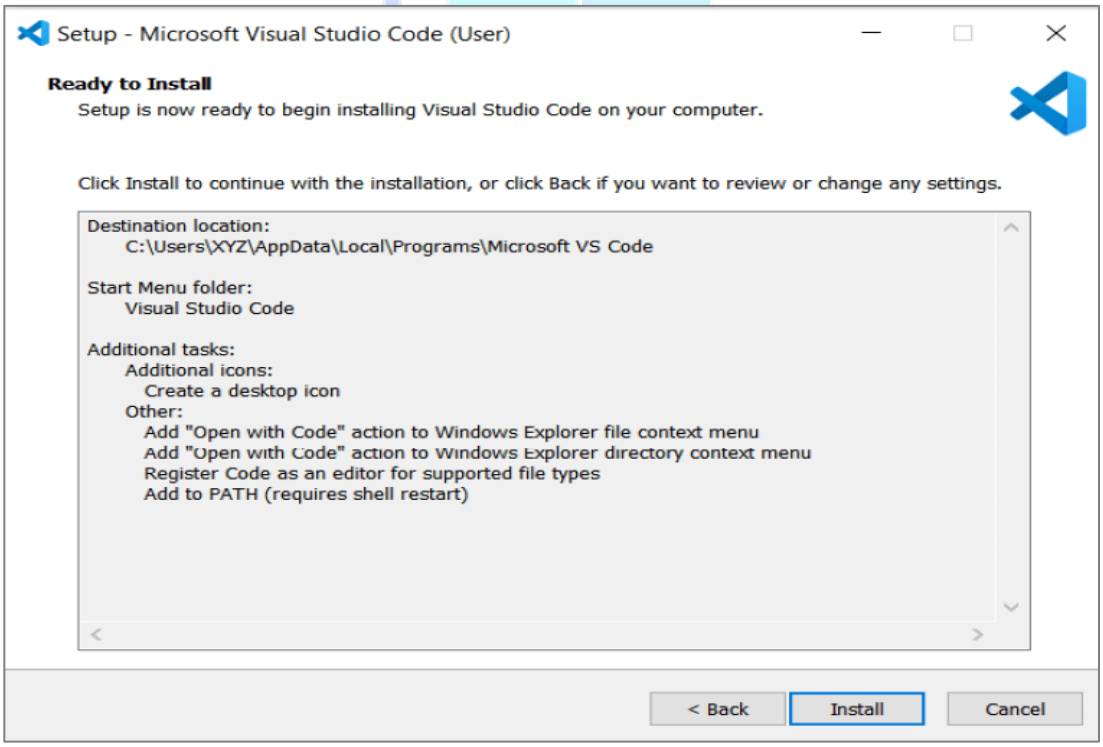
- **Step 5: Click on Next and It will create folder in start menu.**



Step 6: Click all the checkboxes and it will be helpful and it will also add to the PATH.



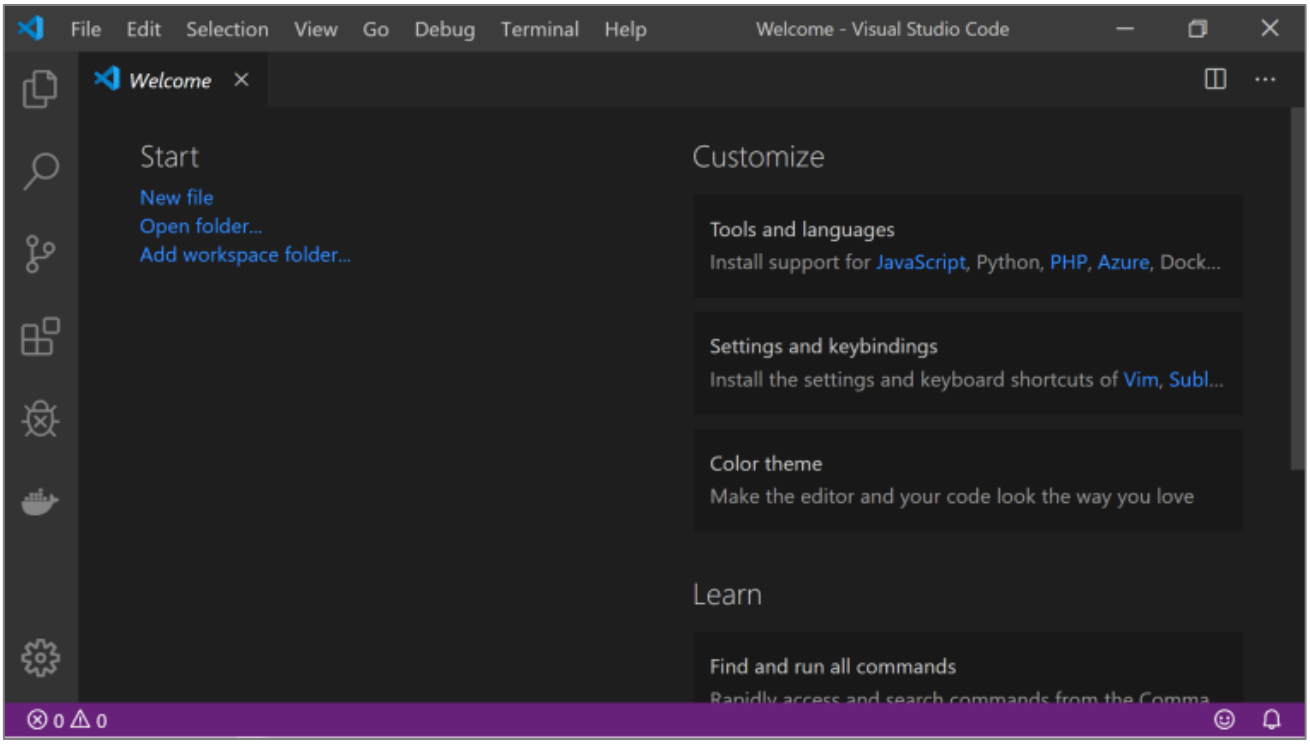
- **Step 7: Review Settings**



Now it will show all your settings there to install VS Code.

- **Step 8: Launch VS Code**

  Then you will see the Welcome Screen of VS Code as shown below.



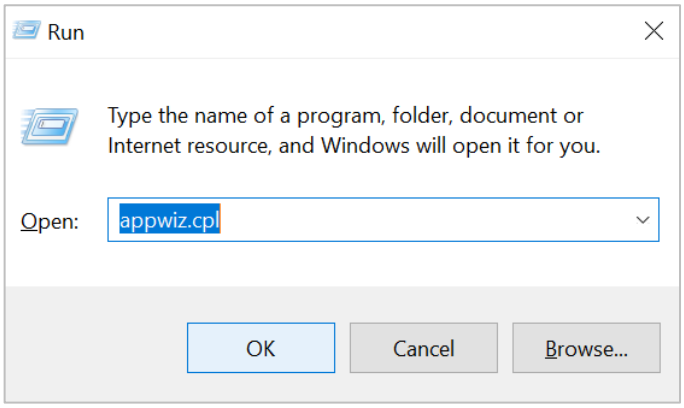
Visual Studio Code has successfully installed. Let the programming fun begin!

4. Internet Information Server (IIS) Installation

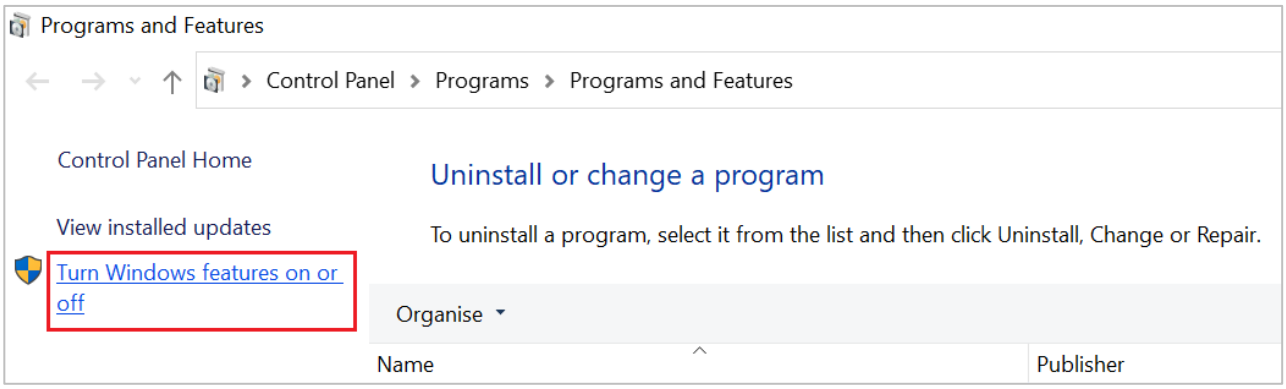
Internet Information Server (IIS) is a general-purpose webserver that runs on the Windows operating system. The IIS accepts and responds to the client's computer requests and enables them to share and deliver information across the LAN such as a corporate intranet and the WAN the internet. It works through several standard languages and protocols.

To Enable IIS on Windows, Follow the below steps:

- **Step 1: To install it, press *windows+r*, type *appwiz.cpl* into the run dialog box, and then hit Enter.**

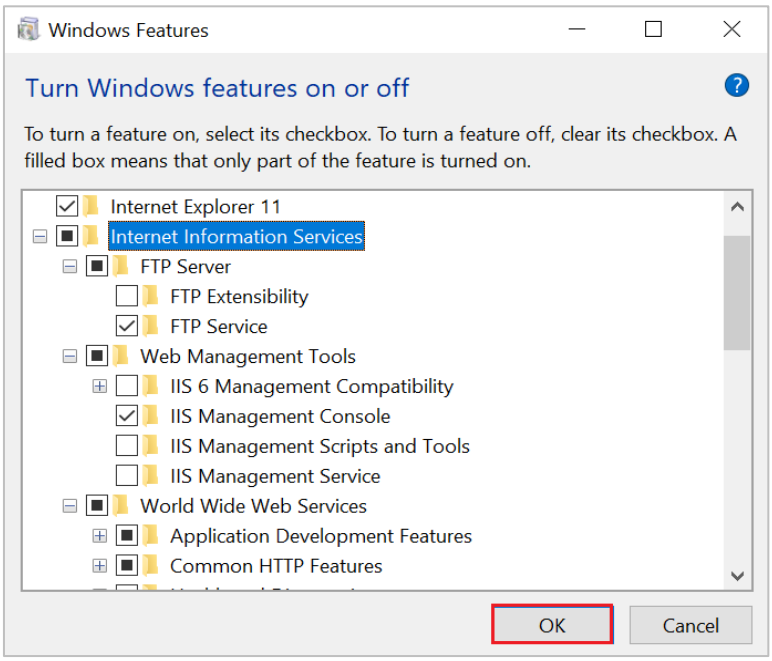


- **Step 2: This will open the Program and Features window from the Control Panel. Click on the "Turn Windows features on or off" link as shown below.**

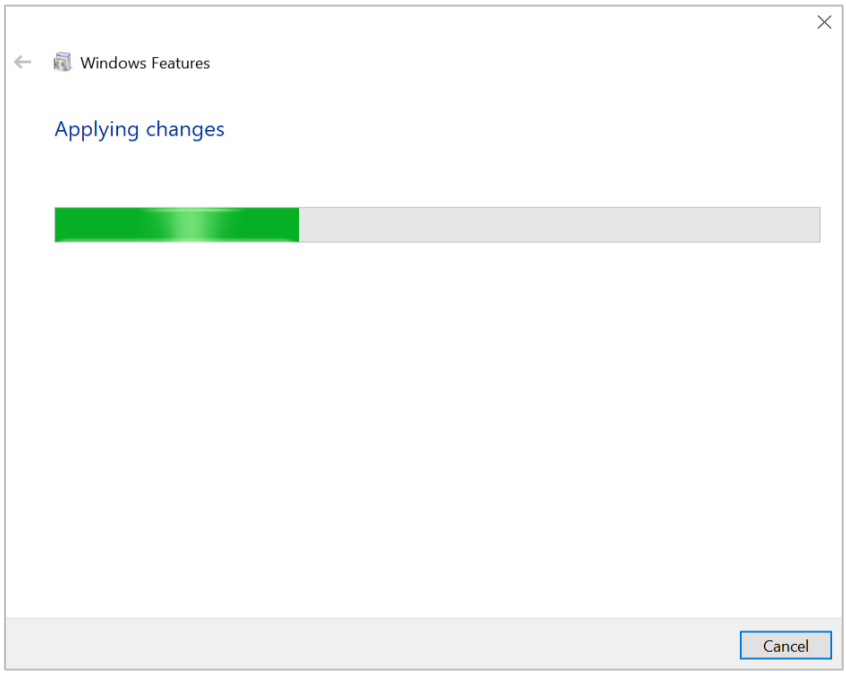


- **Step 3: Now, Click on the Internet Information Services check box and its related features. Under *Internet Information Services* check the following folders:**

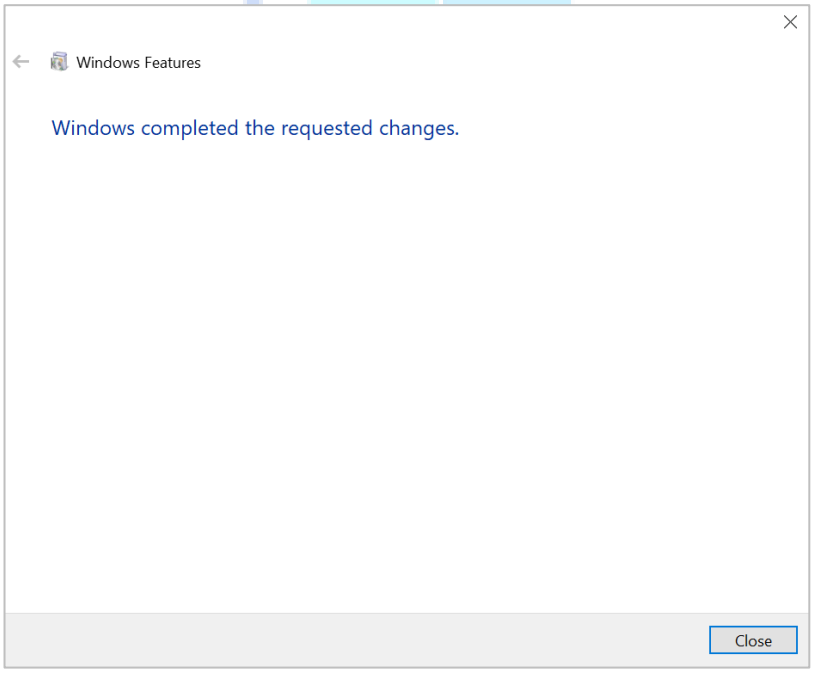
  - Web Management Tools
  - World Wide Web Services
  - Application development features
  - Common HTTP feature
  - Health and Diagnostics
  - Performance Feature
  - Security



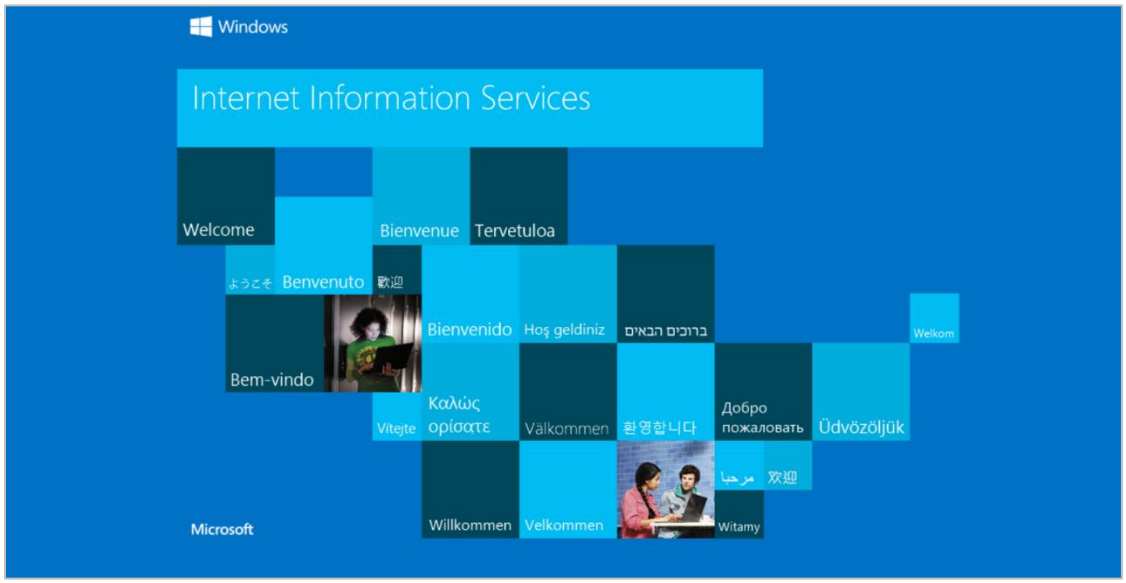
- **Step 4: Click OK for further installation process.**



- **Step 5: New features are now installed. Restart your system once to apply changes to complete the IIS feature installation.**



- **Step 6: Fire up your browser and navigate to localhost - http://localhost/ when it is done. Welcome Screen will appear as shown below.**



You're all set!

Contact Us

If you are still facing any issues while installing the software and configuring the system, please free to reach out to us at **+91 9999 123 502/503** or email us at hello@scholarhat.com

ScholarHat