

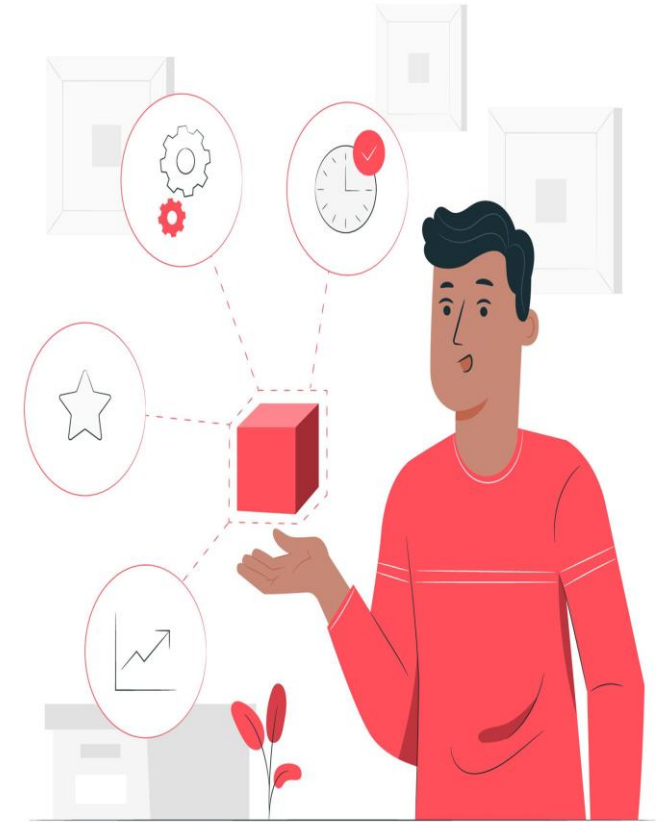
# .NET CORE

## INTRODUCTION

.NET Core

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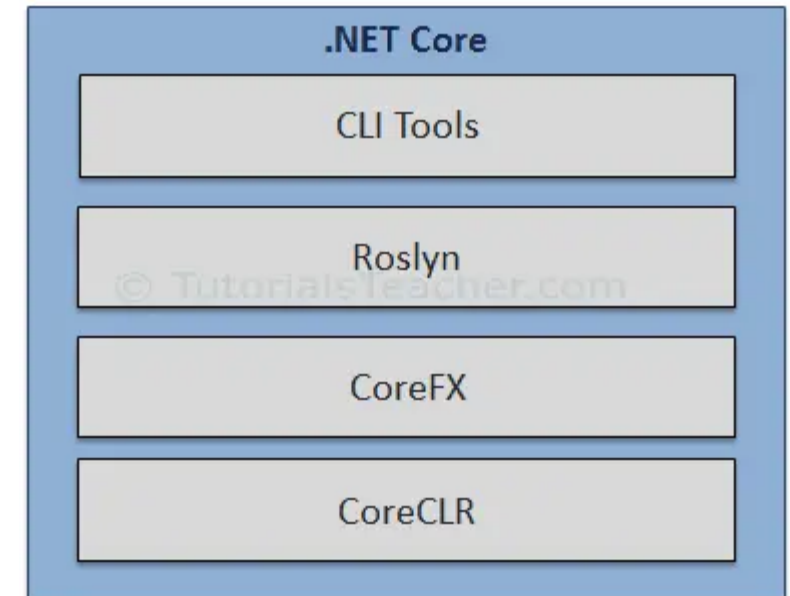
# Introduction

- .NET : Free. Cross platform. Open source.
- A developer platform for building all your apps: web, mobile, desktop, gaming, IoT, and more. Supported on Windows, Linux, and macOS.
- Developed by Microsoft
- .NET Core is a successor to .NET Framework and was introduced in 2014 as a cross-platform



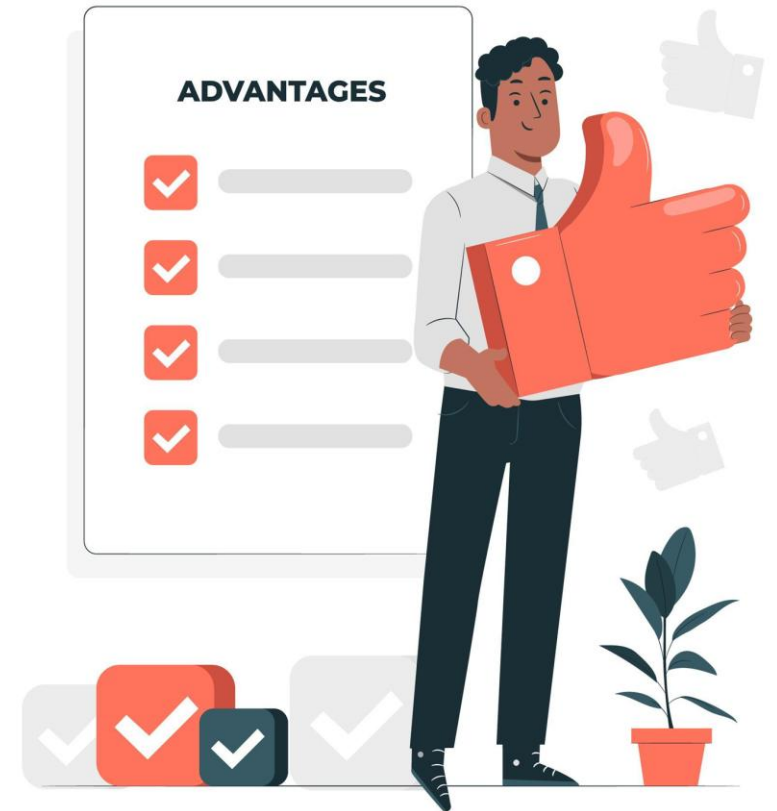
# .NET Core Composition

- CLI Tools: A set of tooling for development and deployment.
- Roslyn: Language compiler for *C#* and Visual Basic
- CoreFX: Set of framework libraries.
- CoreCLR: A JIT based CLR (Common Language Runtime).



# Advantages

- Cross-platform support.
- Use of microservices.
- Use of Docker containers.
- High performance and scalability requirements.
- Side-by-side versioning of .NET versions by application on the same server.
- modular, lightweight, fast
- Flexible Deployment

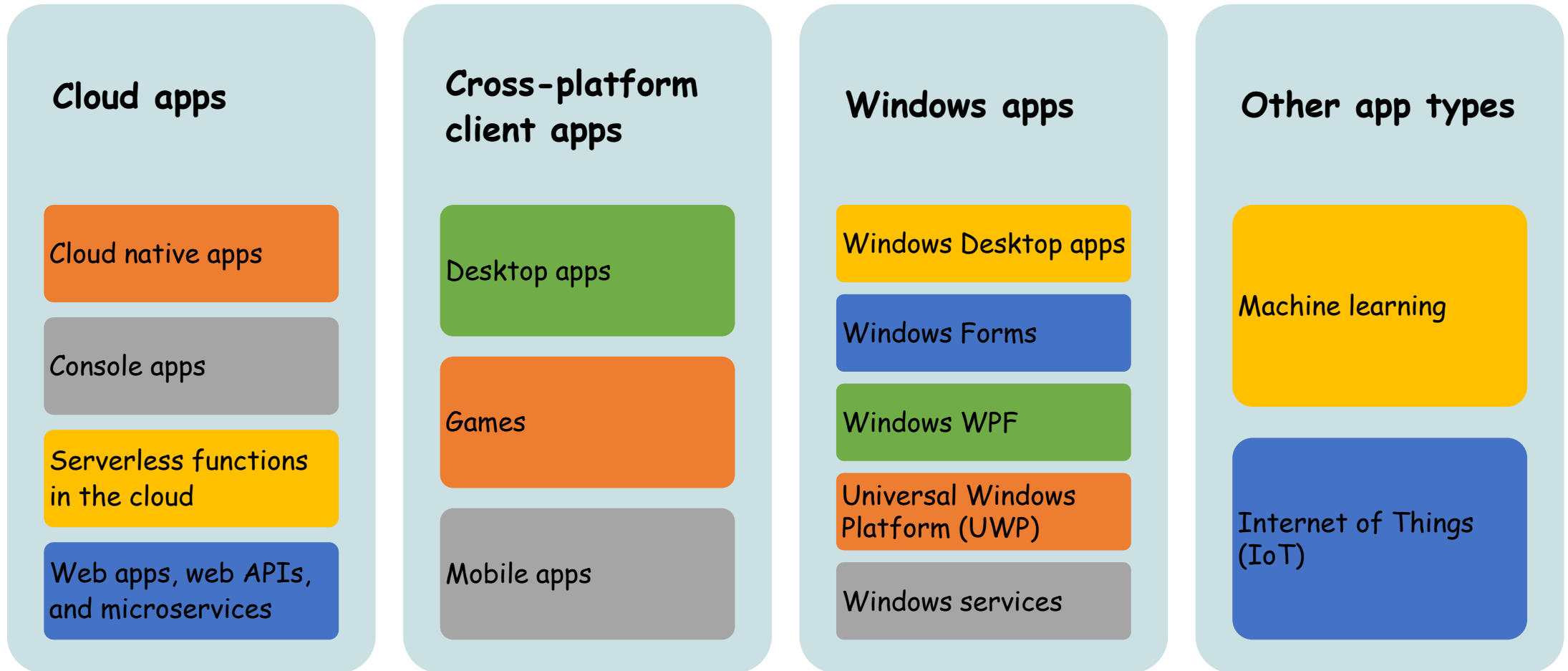


# Features

- Asynchronous code
- Attributes
- Reflection
- Code analyzers
- Delegates and lambdas
- Events
- Exceptions

- Garbage collection
- Generic types
- LINQ (Language Integrated Query).
- Parallel programming
- Type system

# Technologies included in the .NET



# Using .NET

- .NET apps and libraries are built from source code and a project file, using the **.NET CLI** or an Integrated Development Environment (IDE) like **Visual Studio**.
- **.NET SDK**: Set of tools, libraries, and runtimes for development, building, and testing apps.
- **.NET Runtimes**: Set of runtimes and libraries, for running apps.





# Languages

- The runtime is designed to support multiple programming languages. *C#*, *F#*, and Visual Basic languages are supported by Microsoft and are designed in collaboration with the community.
- *C#* is a modern, object-oriented, and type-safe programming language. It has its roots in the *C* family of languages and will be immediately familiar to *C*, *C++*, *Java*, and *JavaScript* programmers.
- *F#* is an interoperable programming language for writing succinct, robust, and performant code. *F#* programming is data-oriented, where code involves transforming data with functions.
- *Visual Basic* uses a more verbose syntax that is closer to ordinary human language. It can be an easier language to learn for people new to programming.



# .NET Core Environment Setup

- **Tools and Software Requires for the development of .NET Core Applications.**
  - **Machine:** (Windows, Mac, Linux)
  - **Editor:** Recommended Visual Studio, VS Code
  - **Dot Net Core SDK:** This is the software development KIT and this KIT is helpful for the development and running of the application in the system.

**The .NET Core can be installed in two ways:**

- By Installing .NET Core SDK
- By Installing Visual Studio



# By Installing .NET Core SDK

To download the later version of .NET Core , go to the following website and select the platform you are using.

<https://dotnet.microsoft.com/download>



# Install Visual Studio

## Step 1:

Download and install Visual Studio installer from the link below :

<https://visualstudio.microsoft.com/>



### Visual Studio | Windows

The most comprehensive IDE for .NET and C++ developers on Windows. Fully packed with a sweet array of tools and features to elevate and enhance every stage of software development.

Learn more →

Download Visual Studio ▾



### Visual Studio for Mac | macOS

A comprehensive IDE for .NET developers that's native to macOS. Includes top-notch support for web, cloud, mobile, and game development.

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### Visual Studio Code | Windows, macOS, Linux

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## Step 2 :

- ❑ Run the installer and select appropriate visual studio from the Available tab And click Install

# Visual Studio Installer

Installed Available

Current



Visual Studio Enterprise 2022

17.5.5

Scalable, end-to-end solution for teams of any size

[License terms](#) | [Release notes](#)

Install

More ▼



Visual Studio Professional 2022

17.5.5

Professional IDE best suited to small teams

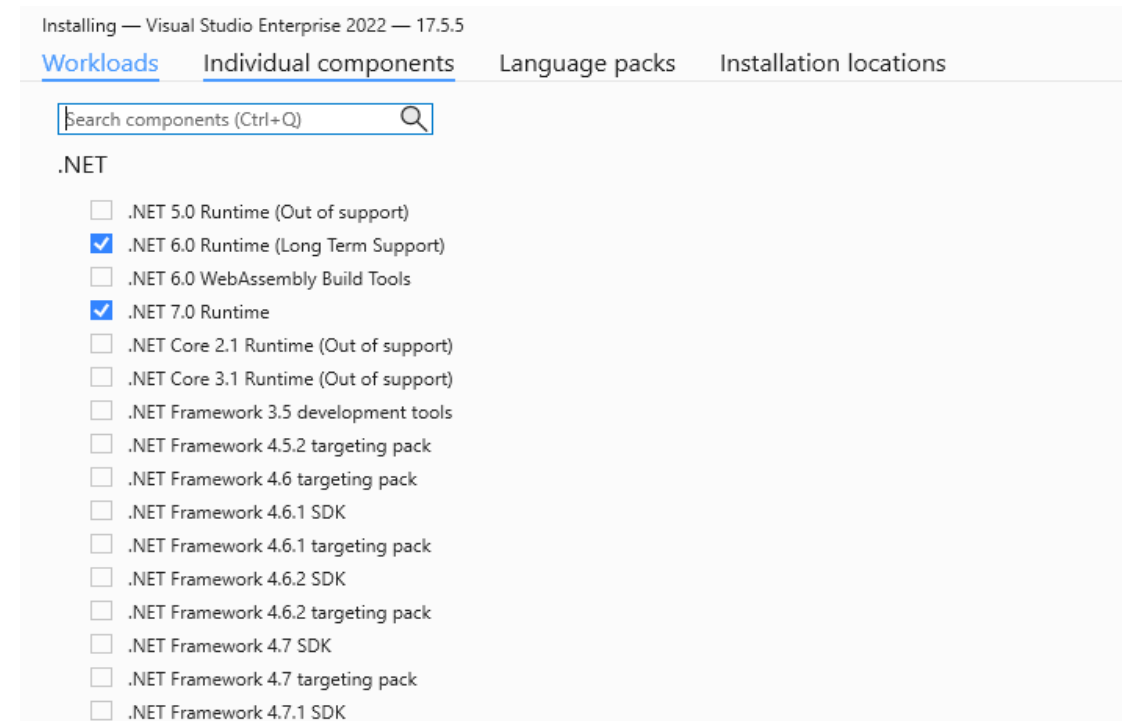
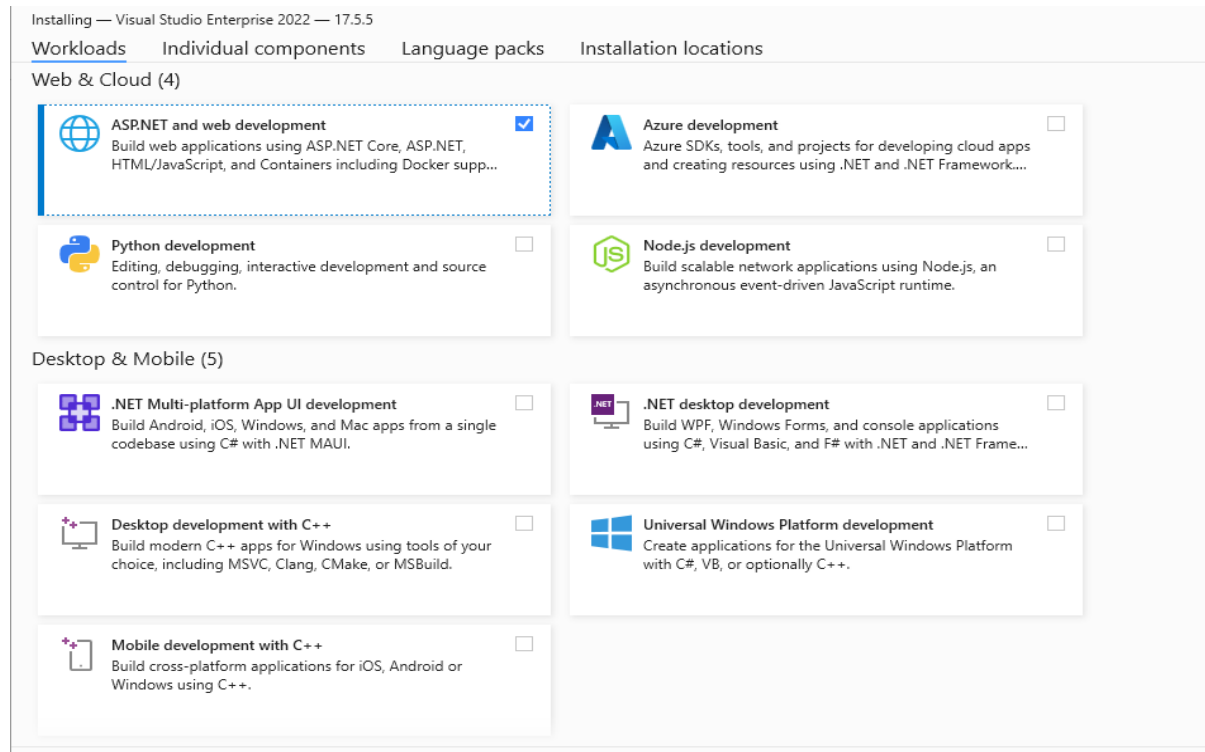
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Install

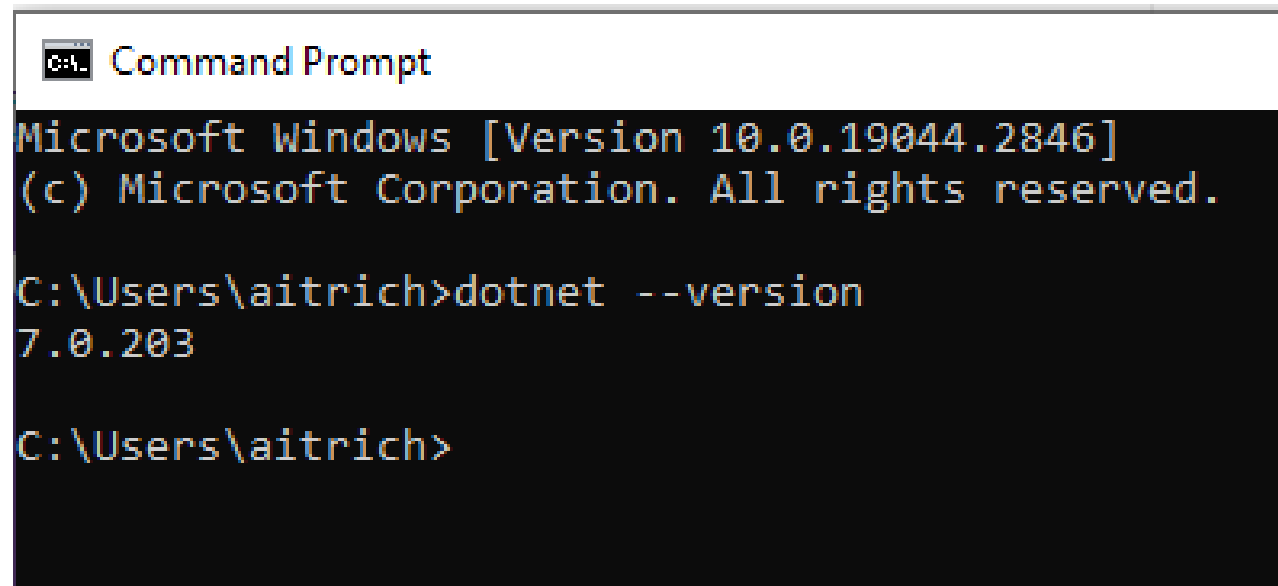
More ▼

### Step 3 :

- From the workloads select Asp.net and web development.
- From Individual components select .Net Runtime you want.
- Click Install



# Verify the Installaion



```
Command Prompt
Microsoft Windows [Version 10.0.19044.2846]
(c) Microsoft Corporation. All rights reserved.

C:\Users\aitrich>dotnet --version
7.0.203

C:\Users\aitrich>
```

Thank  
You



