Microsoft .NET Framework

# What is it?

Microsoft .NET Framework is a software platform that acts as a runtime and provides tools, programming languages and libraries for writing and executing written programs. It allows for the development of web-based and windows-based applications.

# .Net Framework Architecture

* .Net Framework contains a common language runtime (CLR), this works like a virtual machine to execute all languages.  It provides services like thread management, garbage collection, type-safety, exception handling, and more.
* Built into the CLR is CTS which is a rich type system, it implements various data types and operations on those types.
* Common Language Specification (CLS) is a subset of CTS. This defines the rules and restrictions that every language must follow which runs under the .NET framework.
* The class library provides a set of API’s and types for common functionality. The class library includes API’s for reading and writing to files, connecting to databases and more.
* The languages that Microsoft provide in the .NET framework include Visual Basic, C#, C++, J# and JavaScript. The direct language is compiled into intermediate language by a language-specific compiler. The intermediate language is then compiled into machine code by the Just In Time (JIT) compiler.

# ASP.NET

ASP.NET is a web application framework designed by Microsoft. It uses C# languages to generate HTML pages. ASP.NET is a subset of .NET Framework as it extends the .NET Framework with some libraries and tools to develop web apps. The thing that it adds to the .NET Framework is Libraries for common web patterns like MVC, Editor Extensions, the base framework to process the web requests, and web-page templatingsyntax like Razor, etc.