# UNIT 1
## Introduction of .NET Framework Cont.. and its Advantages

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# .NET ???

- **It is a software development framework**

- **It includes a library and runtime environment.**

- **FCL Provides User Interface, database  connectivity , cryptography , web development and many more**

- **.NET programs are executed in CLR(common language runtime).**

- **It provides language interoperability.**

# Introduction to .NET Cont….

It is a software development framework.

- (if you want to do application development, framework will gives all the required tool a predefined frame inside which you can work) it is offered by Microsoft.

- We can create various types of applications the most basic is console application which you may have seen in C, C++ you can also create GUI applications such as windows applications, web applications,  mobile applications and many more.

- You can also create services like web services, WCF service and Web APIs

- Web application

✓ASP.NET,

✓MVC,

✓Silverlight

✓You can create your own customized libraries as well

**It includes a library and runtime environment.**

- if you start writing a basic program you want something predefined. In this programming we are not going to start everything from scratch. If you want to write a message whether a method or something to print a particular message.so this predefined things will be provided by the library. when we are done with writing the program. The next goal is to see the output . For execution we have something called runtime environment.

- Framework consist of library as well as runtime environment

- If we explain this library in detail it is called FCL (Framework Class library)

FCL Provides User Interface, database  connectivity , cryptography , web development and many more(services, mobile app, cloud development).

- FCL Helps you for different purposes of applications because it provide us the tool, the required classes, the method so that we can write a particular code for that type of development.

After that run the code this can be done by CLR

# .NET programs are executed in CLR(common language runtime).

- Common language what is??
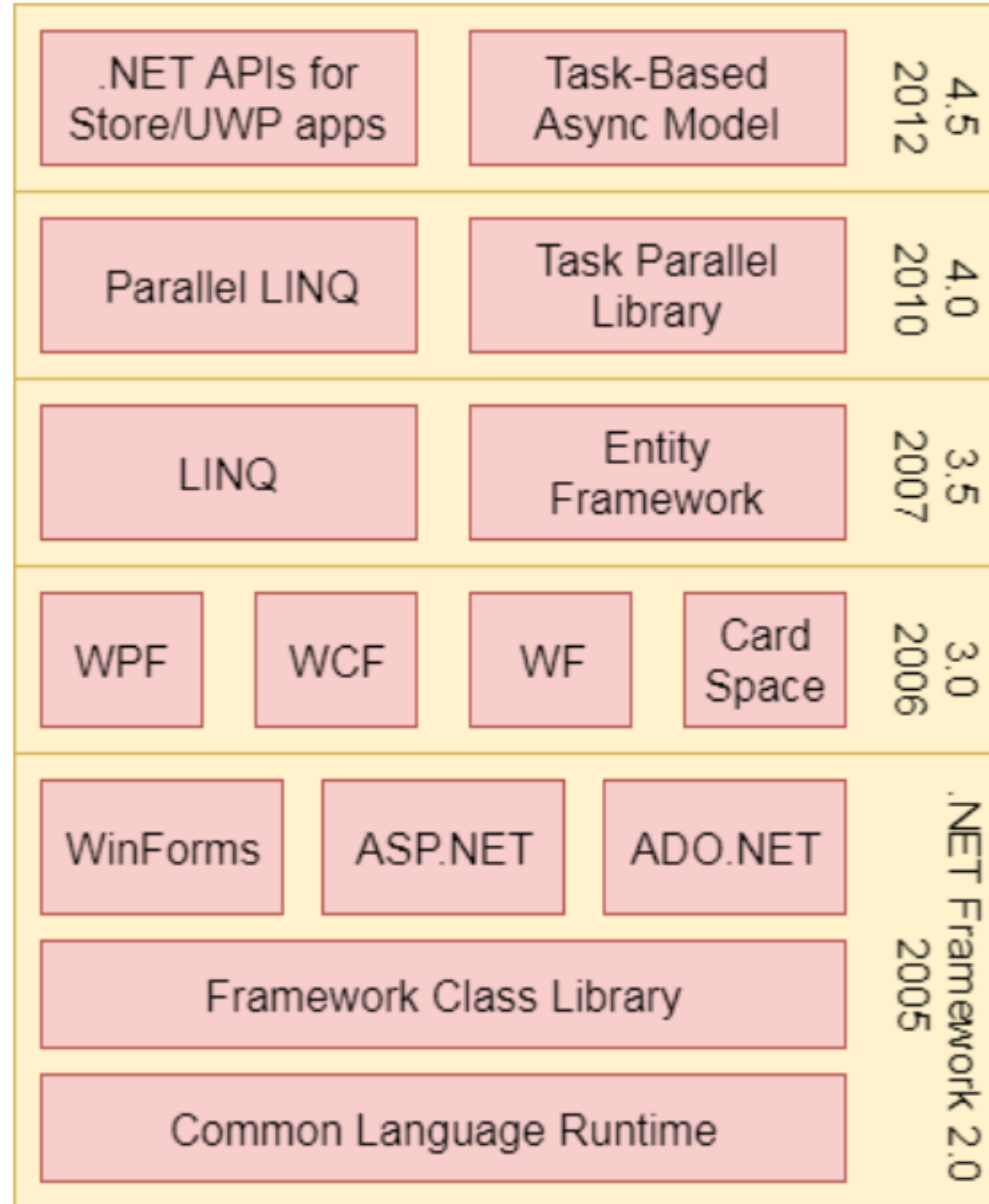
# It provides language interoperability.

- Means for writing a program you need a programming language for .NET we have multiple options may be C# or VB.NET or python or C++ or any other language which is provided by **Common Language Infrastructure**

- So we can write our code in different language but during execution it will execute in common language this is possible by CLR so it is language interoperable

# VERSION

| Framework Version | CLR Version | IDE |
| --- | --- | --- |
| 1.0 | 1.0 | Visual Studio .NET (2002) |
| 1.1 | 1.1 | Visual Studio .NET 2003 |
| 2.0 | 2.0 | Visual Studio 2005 |
| 3.5 | 2.0 | Visual Studio 2008 |
| 4.0 | 4 | Visual Studio 2010 |
| 4.5 | 4 | Visual Studio 2012 |
| 4.5.1 | 4 | Visual Studio 2013 |
| 4.5.2 | 4 | Visual Studio 2015 |
| 4.6 | 4 | Visual Studio 2015 |
| 4.6.1 | 4 | Visual Studio 2015 Update 1 |
| 4.6.2-4.7.2 | 4 | Visual Studio 2017 15.0 |
| 4.8 | 4 | Visual Studio 2019 16.3 |

These frameworks and new version are giving us the new features  like this

**.NET Framework Stack**

# Advantages of .NET Framework

- Supports Object Oriented Programming(VS 6.0 not supported).
- Language independence.
- Efficient data access(ADO, LINQ, Entity Framework).
- Code sharing (code reusable by library).
- Support for services (WCF).