Introduction to .NET Framework

- The .NET Framework is a software development framework developed by Microsoft that provides a runtime environment and a set of libraries and tools for building and running applications on Windows operating systems. The framework includes a variety of programming languages, such as C#, F#, and Visual Basic, and supports a range of application types, including desktop, web, mobile, and gaming applications.
- The .NET Framework includes two main components: the Common Language Runtime (CLR) and the .NET Framework Class Library. The CLR is responsible for managing the execution of code written in any of the supported languages, while the class library provides a large set of pre-built functions and classes that can be used to create a wide range of applications.

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Introduction to .NET Framework

- One of the key advantages of the .NET Framework is its support for a variety of programming languages. This means that developers can choose the language that best fits their needs and expertise, while still being able to use the same set of libraries and tools provided by the framework.
- Another advantage of the .NET Framework is its support for a variety of application types. The framework includes libraries and tools for creating desktop, web, mobile, and gaming applications, which makes it a versatile choice for developers working on a wide range of projects.

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Introduction to .NET Framework

- The .NET Framework also provides a number of features that help improve the security, reliability, and performance of applications. These include features such as code access security, automatic memory management, and just-in-time (JIT) compilation, which helps improve the speed of application execution.
- The .NET Framework is also designed to integrate with other Microsoft technologies, such as Microsoft SQL Server, Microsoft SharePoint, and Microsoft Office, which can make it easier to build applications that work seamlessly with other Microsoft products.
- Overall, the .NET Framework is a powerful and versatile development platform that provides a wide range of tools and libraries for building and running applications on Windows operating systems.

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Introduction to .NET Framework

- It is used to develop Form-based applications, Web-based applications, and Web services. There is a variety of programming languages available on the .Net platform, VB.Net and C# being the most common ones. It is used to build applications for Windows, phones, web, etc. It provides a lot of functionalities and also supports industry standards.
- .NET Framework supports more than 60 programming languages of which 11 programming languages are designed and developed by Microsoft. The remaining Non-Microsoft Languages are supported by .NET Framework but not designed and developed by Microsoft.

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Introduction to .NET Framework

- 11 Programming Languages which are designed and developed by Microsoft are:
- C#.NET
- VB.NET
- C++.NET
- J#.NET
- F#.NET
- JSCRIPT.NET
- WINDOWS POWERSHELL
- IRON RUBY
- IRON PYTHON
- C OMEGA
- ASML(Abstract State Machine Language)

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Important Points:

- Visual Studio is the development tool that is used to design and develop .NET applications. For using Visual Studio, the user has to first install the .NET framework on the system.
- In the older version of Windows OS like XP SP1, SP2, or SP3, the .NET framework was integrated with the installation media.
- Windows 8, 8.1, or 10 do not provide a pre-installed version 3.5 or later of .NET Framework. Therefore, a version higher than 3.5 must be installed either from a Windows installation media or from the Internet on demand. Windows update will give recommendations to install the .NET framework.

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Advantages of .NET Framework:

- **Multi-language support: The .NET Framework supports a variety of programming languages, including C#, F#, and Visual Basic, which allows developers to choose the language that best fits their needs and expertise.**
- **Cross-platform compatibility: The .NET Framework can run on multiple operating systems, including Windows, Linux, and macOS, which provides flexibility in developing and deploying applications.**
- **Large community: The .NET Framework has a large and active community of developers who have created a wide range of resources, including libraries, tools, and documentation.**
- **Security: The .NET Framework includes a variety of security features, such as code access security and digital signatures, which can help protect applications from malicious attacks.**
- **Productivity: The .NET Framework includes a large set of pre-built libraries and tools that can help developers save time and improve productivity.**

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Disadvantages of .NET Framework

- **Windows dependency: Although the .NET Framework can run on multiple operating systems, it was originally designed for use on Windows operating systems, which means that it may not be the best choice for cross-platform applications.**
- **Large footprint: The .NET Framework has a large installation footprint, which can make it difficult to deploy applications on systems with limited storage or bandwidth.**
- **Licensing: Some versions of the .NET Framework require a license, which can add to the cost of developing and deploying applications.**
- **Performance: While the .NET Framework provides good performance for most applications, it may not be the best choice for high-performance applications that require low-level access to hardware or complex algorithms.**
- **Learning curve: Although the .NET Framework is designed to be easy to use, it still has a learning curve, especially for developers who are new to the platform or to object-oriented programming in general.**

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What is the .NET Framework used for?

.NET Framework is a software development framework for building and running applications on Windows. We recommend that all new product development uses .NET 6 or later. These newer .NET versions are cross-platform, support more application types, and deliver high performance.

NET and C# are two distinct entities within the software development landscape. . NET is a framework that provides a runtime environment and libraries, while C# is a programming language primarily used for building applications within the . NET framework.

What is .NET good for?

. NET is an open-source platform for building desktop, web, and mobile applications that can run natively on any operating system. The . NET system includes tools, libraries, and languages that support modern, scalable, and high-performance software development.

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What is C# .NET used for?

What is C# used for? Like other general-purpose programming languages, C# can be used to create a number of different programs and applications: mobile apps, desktop apps, cloud-based services, websites, enterprise software and games.

Is .NET backend or frontend?

Dot NET framework is a versatile software framework that contains both front-end and back-end languages. For example, Dot NET developers can use ASP.NET for backend and C# & VB.NET for front-end development.

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New Desktop Project

- In this tutorial, we will discuss how to
  - Create "**New Desktop (Windows Forms Application) Project**" in Visual Studio 2019

How to add a new form

How to change form's most common properties such as name, backgroundimage, backcolor, maximize and minimize control buttons, control box, font, forecolor, etc.

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Event and Event Handling

- Event handling is familiar to any developer who has programmed graphical user interface GUI
- When a user interacts with a GUI control (e.g., clicking a button on a form) one or more methods are executed in response to the above event.
- Events can also be generated without user interaction
- Event handlers are methods in an object that are executed in response to some events occurring in the application

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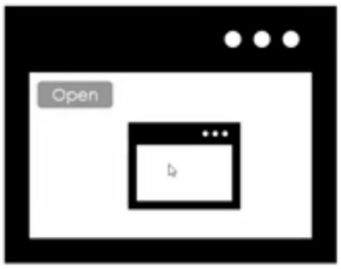
Windows Forms App (.NET Framework)

- In this tutorial, we will discuss
  - How to **Open 2nd Form** from **1st or Main Form** In **Windows Forms Application**



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Windows Forms App (.NET Framework)

- In this tutorial, we will discuss
  - What are different types of forms?
  - What is Form's "**Show**" and "**ShowDialog**" Methods?
  - Difference Between Form's "**Show**" and "**ShowDialog**" Methods
  - How to change "**Startup Form**" In Windows Forms Application
  - How to change "**Application Icon**" In Windows Forms Application

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Windows Forms App (.NET Framework)

- **Different types of forms**: Windows forms are of two (2) types.
  - Model Form
  - Modeless Form
- **Model Form**: If Model Form is opened then you can't use the rest of the application till Model Form is closed.
- **Modeless Form**: If Modeless Form is opened then you can till use the rest of the application.

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Windows Forms App (.NET Framework)

- What is Form's "**Show**" and "**ShowDialog**" Methods?
  - These Methods are use to create Model and Modeless Forms.
- Difference Between Form's "**Show**" and "**ShowDialog**" Methods:
  - **Show Method**: This method will create Modeless Form.
  - **ShowDialog Method**: This method will create Model Form.

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