



**S. S Jain Subodh P.G. (Autonomous) College**  
**SUBJECT - .NET TECHNOLOGY**  
**TITLE - .NET Framework**

# **Introduction to .NET**



## What is .NET ?

### Microsoft.NET is a Framework

- Microsoft .NET is a Framework which provides a common platform to Execute or, Run the applications developed in various programming languages.
- Microsoft announced the .NET initiative in July 2000.
- The main intention was to bridge the gap in **interoperability** between services of various programming languages.



## .NET Framework Objectives

- **The .NET Framework is designed to fulfill the following objectives:**
  - Provide object-oriented programming environment
  - Provide environment for developing various types of applications, such as Windows-based applications and Web-based applications
  - To ensure that code based on the .NET Framework can integrate with any other code



## .NET Framework

**VB**

**C++**

**C#**

**JScript**

**...**

**Common Language Specification**

**ASP.NET**

**Windows  
Forms**

**ADO.NET**

**Base Class Library**

**(CLR) Common Language Runtime**

**Operating System**

**Visual Studio 2008**



## The .NET Framework consists of:

### **The Common Language Specification (CLS)**

It contains guidelines, that language should follow so that they can communicate with other .NET languages. It is also responsible for Type matching.

### **The Framework Base Class Libraries (BCL)**

A consistent, object-oriented library of prepackaged functionality and Applications.

### **The Common Language Runtime (CLR)**

A language-neutral development & execution environment that provides common runtime for application execution .



## Common Language Specification

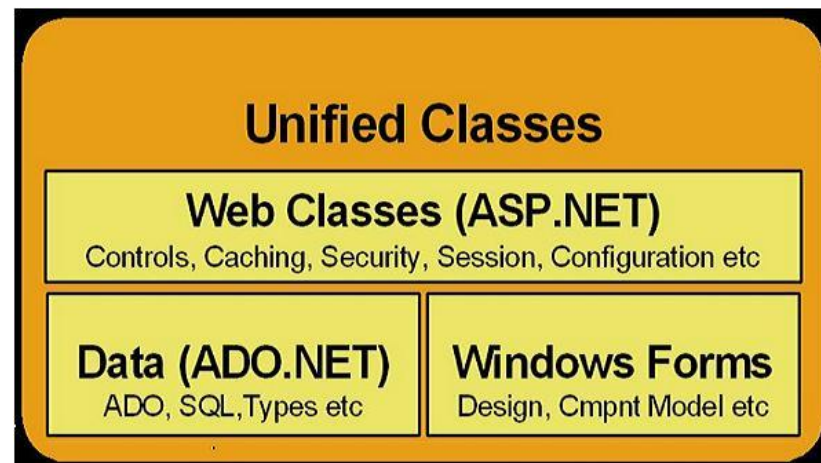
### CLS performs the following functions:

- Establishes a framework that helps enable cross-language integration, type safety, and high performance code execution
- Provides an object-oriented model that supports the complete implementation of many programming languages
- Defines rules that languages must follow, which helps ensure that objects written in different languages can interact with each other



## .NET Framework Base Class Library

- The Class Library is a comprehensive, object-oriented collection of reusable types
- These class library can be used to develop applications that include:
  - Traditional command-line applications
  - Graphical user interface (GUI) applications
  - Applications based on the latest innovations provided by ASP.NET
    - Web Forms
    - XML Web services





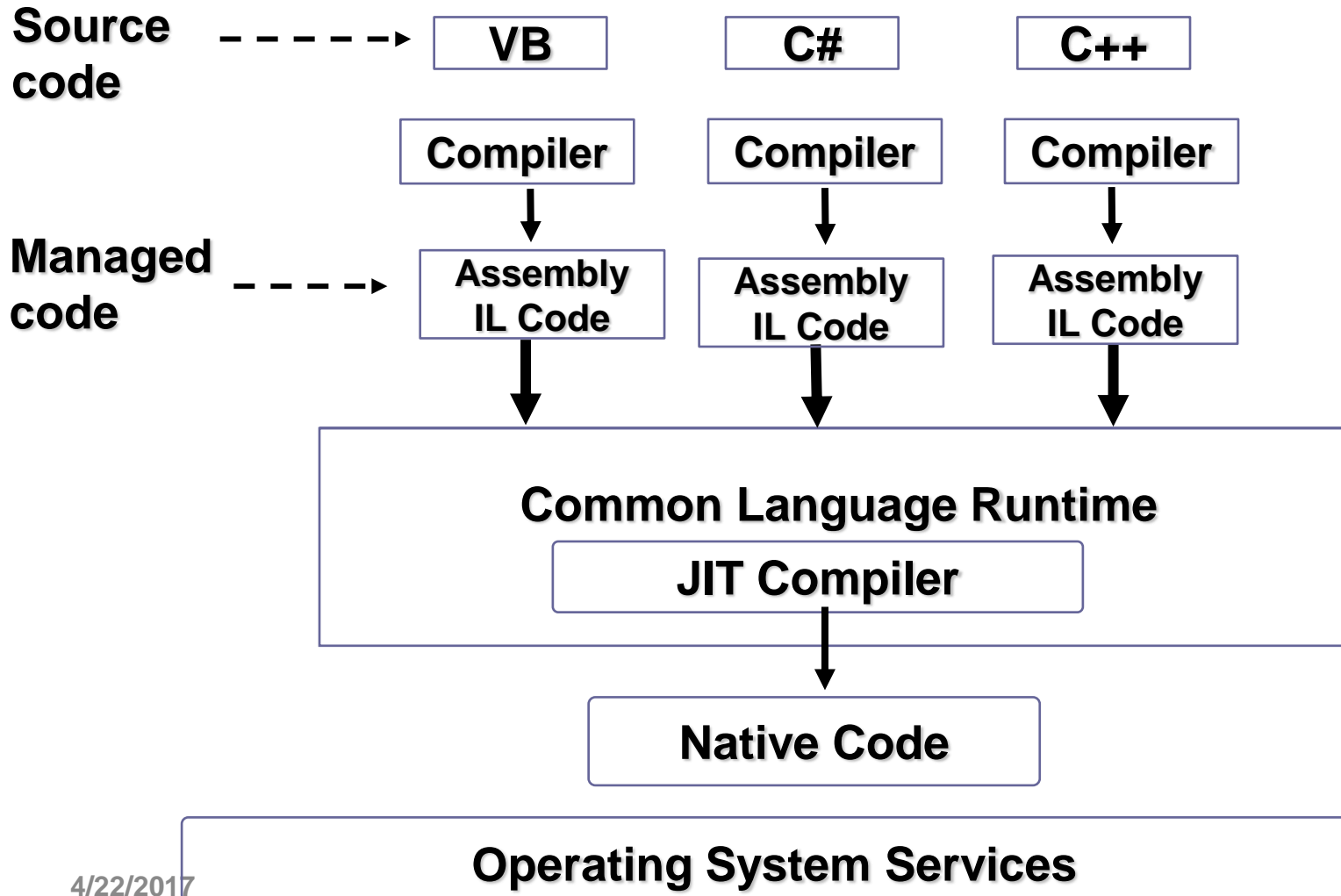
## Common Language Runtime (CLR)

- CLR ensures:
  - A common *runtime* environment for all .NET languages
  - Uses *Common Type System (strict-type & code-verification)*
  - Memory allocation and garbage collection
  - Intermediate Language (IL) to native code compiler. Which Compiles MSIL code into native executable code
  - Security and interoperability of the code with other languages
- Over 36 languages supported today
  - C#, VB, Jscript, Visual C++ from Microsoft
  - Perl, Python, Smalltalk, Cobol, Haskell, Mercury, Eiffel, Oberon, Oz, Pascal, APL, CAML, Scheme, etc.





## Execution in CLR





## Visual Studio 2010 IDE

Microsoft has introduced **Visual Studio.NET**, which is a tool (also called Integrated Development Environment) for developing .NET applications by using programming languages such as **VB**, **C#**, **VC++** and **VJ#**. etc.



## C# (C Sharp)

- Microsoft C# (pronounced C Sharp) developed by Microsoft Corporation, USA
- New programming language that runs on the .NET Framework
- C# is simple, modern, type safe, and object oriented
- C# code is compiled as managed code
- Combines the best features of Visual Basic, C++ and Java



## C# Features

- Simple
- Modern
- Object-Oriented
- Type-safe
- Versionable
- Compatible
- Secure



**Powerpoint Presentation**  
**By**  
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Thank You...