VB Terms

- Design Time
  - Environment where application being developed.
- Run Time
  - Execution of application.
- Forms
  - Basic element for creating user interface for application.
- Controls
  - Manipulate information.
- Properties
  - Control characteristics like color, caption, size etc.

VB Terms

- Methods
  - Actions that can be performed by object
- Events
  - Action recognized by form or control.
  - Generated by user, OS or application.

FEATURES OF VB.NET

- Simple
- Consistency
- Garbage Collection
- Object Orientation
- Type Safety
- Thread Support
- Structured Exceptional Handling
- Powerful, Flexible, Simplified Data Access
- COM Interoperability

VB vs VB.NET

Similarities Between VB & VB.NET

- Both Are Not Case Sensitive.
- Both Support Windows & Web Based Application.
- Both Are Provided With IntelliSense Feature.

Difference Between VB & VB.NET

VB .NET	VB
Object Oriented	Object Based
Data Type Declaration Required	Not Strongly Typed
Structured Exception Handling	Not Structured
Namespace To Organize Classes	Not Supported
Automatic Garbage Collection	Not Supported
ADO .NET For DB Connectivity	DAO, RDO & ADO
Multithreading	Not Supported
Console Applications Are Allowed	Not Allowed
New Data Type Like Char, Short & Decimal	Not Supported
Variable Can Declare In Same Line Dim a As Integer = 10	Not Allowed
Object Data Type	Variant Data Type

DATA TYPE

Data Types Supported In VB.NET

- Number Data Types
  - Byte 1byte
  - Short 2bytes
  - Integer 4bytes
  - Long 8bytes
  - Single 4bytes
  - Double 8bytes
  - Decimal 16bytes
- Character Data Type
  - Char 2bytes
  - String Depends on implementing platform
- Other Data Type
  - Boolean
  - Date
  - User Defined Data Type
    - e.g. Structure

Data Type	Size in Bytes	Description	Type
Byte	1	8-bit unsigned integer	System.Byte
Char	2	16-bit Unicode characters	System.Char
Integer	4	32-bit signed integer	System.Int32
Double	8	64-bit floating point variable	System.Double
Long	8	64-bit signed integer	System.Int64
Short	2	16-bit signed integer	System.Int16
Single	4	32-bit floating point variable	System.Single
String	Varies	Non-Numeric Type	System.String
Date	8		System.Date
Boolean	2	Non-Numeric Type	System.Boolean
Object	4	Non-Numeric Type	System.Object
Decimal	16	128-bit floating point variable	System.Decimal

VARIABLES

Variables

- These Are Area In Memory Referred By Name Or Identifier During Program Execution.
  - Dim a As Integer = 10
  - Dim b As Double = 14.01
- Multiple Declaration Is Allowed.
  - Dim x , y As Integer
- Constant
  - Value not change during execution of code.
  - Const a As Integer = 45

Access Control

- Public
- Private
- Protected
- Friend
- Protected Friend

VB.Net - Program Structure

```
Module Module1
   'This program will display Hello World
         Sub Main()
         Console.WriteLine("Hello World")
         Console.ReadKey()
         End Sub
End Module
```

Structure of program

- The first line has a **Module** declaration, the module *Module1*. VB.Net is completely object oriented, so every program must contain a module of a class that contains the data and procedures that your program uses.

Classes or Modules generally would contain more than one procedure. Procedures contain the executable code, or in other words, they define the behavior of the class.

- This is a comment. To mark it as a comment, we added a single quote (') to the beginning of the sentence. The VB.NET compiler will not process this part. The purpose of comments is to improve the readability of the code. You can also start a comment by using **REM** followed by space then comment. For example

REM this is comment

- The next line defines the **Main procedure**, which is the entry point for all VB.Net programs. The Main procedure states what the module or class will do when executed.

Constants

As the name suggests, the name constant refers to a fixed value that cannot be changed during the execution of a program. It is also known as **literals**. These constants can be of any data type, such as Integer, Double, String, Decimal, Single, character, enum, etc.

- **Declaration of Constants**

In VB.NET, **const** is a keyword that is used to declare a variable as constant. The Const statement can be used with module, structure, procedure, form, and class.

- **Syntax:**

Const constname As datatype = value

For Example

```
Module Const1
    Sub main()
        'declaration and initialization of Constant variable using Const keywords
        Const intData As Integer = 20
        Const name As String = "JavaTpoint"
        Const topic As String = "VB.NET"
        Const PI = 3.14
        Dim radius, area As Integer

        Console.WriteLine(" Constant integer is {0}", intData)
        Console.WriteLine(" You have entered {0}", name)
        Console.WriteLine(" Your Topic is {0}", topic)
        Console.WriteLine("Enter the Radius")
        radius = Console.ReadLine()
        area = PI * radius * radius
        Console.WriteLine(" Area of Circle is {0}", area)
        Console.ReadKey()

    End Sub
End Module
```