



Republic of the Philippines  
Department of Education  
REGION III  
SCHOOLS DIVISION OFFICE OF NUEVA ECija

LEARNING ACTIVITY SHEET

SPECIAL PROGRAM IN ICT 10

ADVANCED PROGRAMMING 10

First Quarter, Week 5

Name of Learner: \_\_\_\_\_

Grade Level /Section: \_\_\_\_\_ Date: \_\_\_\_\_

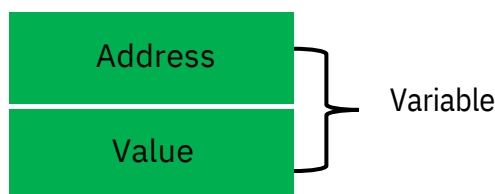
VB.NET VARIABLE

BACKGROUND INFORMATION FOR LEARNERS

In software programming languages, a variable has a data type and a name use to present one or more values. Variables work as containers to hold numbers, phrases, or other important stuff used in several places in your code. A variable has a name and a data type. To declare variable, we used Dim keyword.

A variable has a name, an address, (location) and a definition that defines the kind of value it stores.

Variable is divided into two parts: address part and a value part



In Vb. Net it allows other value types of variable like Enum and reference types of variables like Class.

VARIABLE DECLARATION IN VB.NET

Variable in the variable list has the following syntax and parts,

```
Dim <variable_name> As <data_type> OR  
Dim variablename[ ( [ boundslist ] ) ] [ As [ New ] datatype ] [ = initializer ]
```

Where, Dim

- *variable name* – name of the variable
- *boundslist* – optional. It provides list of bounds of each dimension of an array variable.
- *New*– optional. It creates a new instance of the class when the Dim statement runs.
- *datatype*– Required if Option Strict is On. It specifies the data type of the variable.

• *initializer* – Optional if New is not specified. Expression that is evaluated and assigned to the variable when it is created.

```
Dim StudentID As Integer
Dim StudentName As String
Dim Salary As Double
Dim count1, count2 As Integer
Dim status As Boolean
Dim exitButton As New System.Windows.Forms.Button
Dim lastTime, nextTime As Date
```

Declaring More than one Variable in single line; just separate each variable with a comma.

Example:

```
Dim StudentName, StudentAddress As String
Dim StudentPay As Double, Quantity As Integer
```

The Dim keyword is a short for dimension. It is used to create a variable. Once a variable is created it is very easy to assign a value to it. The variable is placed at the right hand side of the assignment operator (=), and the value to be assigned is placed at the right hand side.

## VARIABLE INITIALIZATION IN VB.NET

Variables are configured with an equal sign followed by a constant expression. The general form of configuration is –

variable\_name = value;

for example,

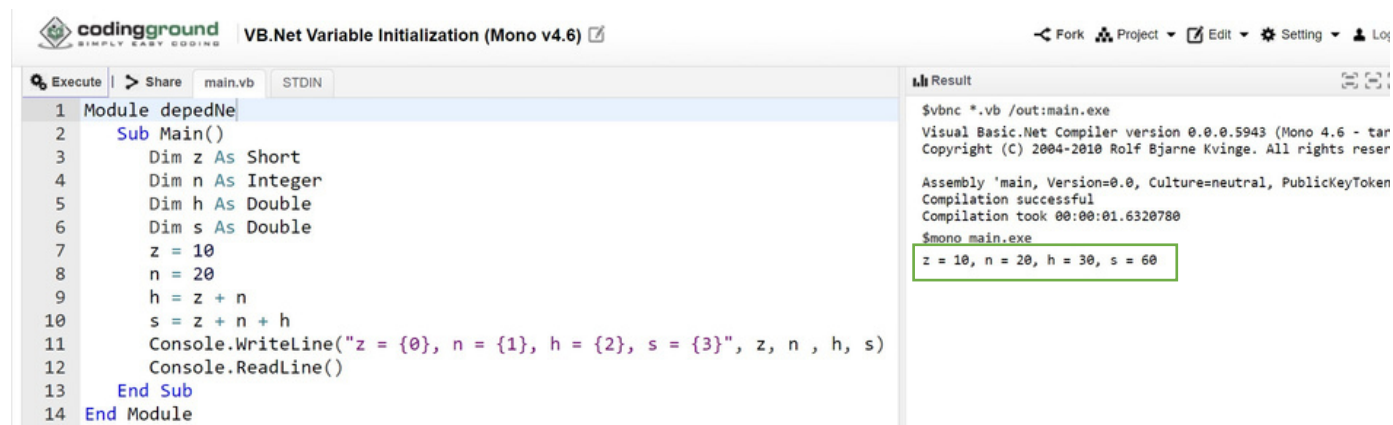
```
Dim pi As Double
pi = 3.14159
```

You can initialize a variable at the time of declaration as follows –

```
Dim StudentID As Integer = 100
Dim StudentName As String = "Bill Smith"
```

Example

Try the following examples which make use of various types of variables



The screenshot shows a web-based IDE interface for VB.NET. The code editor on the left contains the following code:

```
1 Module depedNe
2     Sub Main()
3         Dim z As Short
4         Dim n As Integer
5         Dim h As Double
6         Dim s As Double
7         z = 10
8         n = 20
9         h = z + n
10        s = z + n + h
11        Console.WriteLine("z = {0}, n = {1}, h = {2}, s = {3}", z, n, h, s)
12        Console.ReadLine()
13    End Sub
14 End Module
```

The output window on the right shows the compilation and execution results:

```
$vbnc *.vb /out:main.exe
Visual Basic .Net Compiler version 0.0.0.5943 (Mono 4.6 - tar
Copyright (C) 2004-2010 Rolf Bjarne Kvinge. All rights reser

Assembly 'main, Version=0.0, Culture=neutral, PublicKeyToken
Compilation successful
Compilation took 00:00:01.6320780

$mono main.exe
z = 10, n = 20, h = 30, s = 60
```

NOTE! You can try this online following this link:  
[https://www.tutorialspoint.com/compile\\_vb.net\\_online.php](https://www.tutorialspoint.com/compile_vb.net_online.php)  
You can download this application in your smartphone at google play store:  
<https://play.google.com/store/apps/details?id=com.krazeapps.vbnetprogrammingcompiler>  
or in visual studio 2008 in console application.

## CONSTANT AND ENUMERATION

In computer programming, a **constant**, is a fixed value. It means that it has a number of its own and cannot be altered during the execution. These fixed values are also called literals. Constants has various basic data types like an integer constant, a floating constant, a character constant, or a string literal. There are also enumeration constants as well. An enumeration (enum) is a set of named integer constants. It is mainly use to assign names to integral constant.

### DECLARING CONSTANT

In VB.Net, constants are declared using the Const statement. The Const statement is used at module, class, structure, procedure, or block level for use in place of literal values.

The syntax for the Const statement is,

[ < attributelist > ] [ accessmodifier ] [ Shadows ]  
Const constantlist

Where,

*Constantlist* – gives the list of names of constants declared. Required. Where, each constant name has the following syntax and parts.

Where, each constant name has the following syntax and parts,

constantname [ As datatype ] = initializer

- *constantname* – specifies the name of the constant
- *datatype* – specifies the data type of the constant
- *initializer* – specifies the value assigned to the constant

### EXAMPLE

Try the following example that demonstrates declaration and use of a constant value

```
constant.vb
1 Module Program
2
3     Sub Main()
4
5         Const PI = 3.14149
6         Dim radius, area As Single
7         radius = 7
8         area = PI * radius * radius
9         Console.WriteLine("Area = " &
10 Str(area))
11         Console.ReadKey()
12
13     End Sub
14 End Module
```

```
< Output
Area = 153.933
```

PRINT AND DISPLAY CONSTANTS IN VB.NET

VB.Net provides the following print and display constants,

Sr.No.	Constant & Description
1	vbCrLf Carriage return/linefeed character combination.
2	vbCr Carriage return character.
3	vbLf Linefeed character.
4	vbNewLine Newline character.
5	vbNullChar Null character.
6	vbNullString  Not the same as a zero-length string (""); used for calling external procedures.
7	vbObjectError  Error number. User-defined error numbers should be greater than this value. For example: Err.Raise(Number) = vbObjectError + 1000
8	vbTab Tab character.
9	vbBack Backspace character.

Declaring Enumerations

An enumerated type is declared using the Enum statement. The Enum statement declares an enumeration and defines the values of its members. The Enum statement can be used at the module, class, structure, procedure, or block level.

The syntax for the Enum statement is as follows,

[ < attributelist > ] [ accessmodifier ] [ Shadows ]  
Enum enumerationname [ As datatype ]  
memberlist  
End Enum

Where,

- *enumerationname* – name of the enumeration. Required
- *memberlist* – specifies the list of member constants being declared in this statement. Required.

Each member in the memberlist has the following syntax and parts:

[< attribute list >] member name [ = initializer ]

Where,

- *name* – specifies the name of the member. Required.
- *initializer* – value assigned to the enumeration member. Optional.

EXAMPLE

Try the following example that demonstrates declaration and use of a enumeration variable,

```
Enumeration (Declarations)
Module Enumeration
    Enum Provinces
        IlocosNorte = 1
        Batanes = 2
        NuevaEcija = 3
        Batangas = 4
        Albay = 5
        Aklan = 6
        Cebu = 7
    End Enum
    Sub Main()
        Console.WriteLine("The province of Ilocos Norte is located in region : " & Provinces.IlocosNorte)
        Console.WriteLine("The province of Batanes is located in region : " & Provinces.Batanes)
        Console.WriteLine("The province of Nueva Ecija is located in region : " & Provinces.NuevaEcija)
        Console.WriteLine("The province of Batangas is located in region : " & Provinces.Batangas)
        Console.ReadKey()
    End Sub
End Module
```

```
file:///C:/Users/Jes/Desktop/ConsoleApplication1/ConsoleApplication1/bin/Debug/ConsoleApplication1.EXE
The province of Ilocos Norte is located in region : 1
The province of Batanes is located in region : 2
The province of Nueva Ecija is located in region : 3
The province of Batangas is located in region : 4
```

## LEARNING COMPETENCY

To identify different data types and their uses and applying variables in a program.

## ACTIVITIES

### ACTIVITY 1

Directions: Declare and initialize variable from the given situation below. Follow the syntax on declaring variables.

Let say you work in an office, there's a complaint of faulty wiring that cause damaged to the equipment or computers at the other side of the building and then you found out that you run out of stocks and some of your tools was stolen e.g. supplies, materials, and hardware tools needed to accomplish your job. You made a request to the purchasing department such as Hard disk with the amount of 3,234.00 and 1,545.75 for the computer memory, 500.50 for the crimping tool, and 150 for the screw driver, and include in the declaration and initialization the total amount of your purchases'.

ACTIVITY 2

Directions: Fill in the blank

```
1) _____ Enumeration
Enum 4) _____
    IlocosNorte = 1
    Batanes = 2
    2) _____ = 3
    Batangas = 4
    Albay = 5
    Aklan = 6
    Cebu = 7
End Enum
3) _____ Main()
    Console.WriteLine("The province of Ilocos Norte is located in region : " & Provinces.IlocosNorte)
    Console.WriteLine("The province of Batanes is located in region : " & Provinces.Batanes)
    Console.WriteLine("The province of Nueva Ecija is located in region : " & Provinces.NuevaEcija)
    Console.WriteLine("The province of Batangas is located in region : " & Provinces.Batangas)
    5) _____
End Sub
End Module
```

ACTIVITY 2

Directions: Write a Console application that declare an enumeration variable. The output of the program is shown below:

The Color Red is: 2

The Color Yellow is: 6  
The Color Blue is: 12  
The Color Green is: 8

ACTIVITY 3

Directions: Make a Vlog about creating a simple program using constant and enumeration.

REFLECTION

What is the importance of variable in a programming language?

## REFERENCES

<https://www.kidscodecs.com/variables/>  
JEDI Course Notes-Intro1-MasterDocument  
[https://www.tutorialspoint.com/compile\\_vb.net\\_online.php](https://www.tutorialspoint.com/compile_vb.net_online.php)  
<https://www.geeksforgeeks.org/enumeration-enum-c/>  
[https://www.tutorialspoint.com/vb.net/vb.net\\_constants.htm](https://www.tutorialspoint.com/vb.net/vb.net_constants.htm)  
[https://www.tutorialspoint.com/vb.net/vb.net\\_variables.htm](https://www.tutorialspoint.com/vb.net/vb.net_variables.htm)

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