Introduction to VB.net
Lecture 2

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VB.NET

Agenda

- Conditions
  - IF
  - IF ELSE
  - IF ELSE IF
  - Switch Case
- Loops
  - While
  - Do While
  - For
- Exo 2
- Labs

Conditions

IF

```
If variable = 10 Then
    variable = 5
End If
```

IF ELSE

```
If variable = 10 Then
    'Do something if the variable is 10
Else
   'Do something if the variable is different from 10
End If
```

IF ELSE IF

```
If variable = 10 Then
    'Do something if the variable is 10
Else If variable = 5 Then
    'Do something if the variable is 5
Else
    'Do something if the variable is different from
    10 and 5
End If
```

Nested IF

```
If Variable = 10 Then
    If variable2 = 1 Then
        'Do something if variable is both 10 and 1
    Else
        'Do something else
    End If
Else If Variable = 5 Then
    If variable2 = 2 Then
        'Do something if variable is both 5 and 2
    End If
Else
    'Do something if variable is different from 10 and 5
End If
```

Operators - Math

Operator	Description	Example
^	Raises one operand to the power of another	B^A will give 49
+	Adds two operands	A + B will give 9
-	Subtracts second operand from the first	A - B will give -5
*	Multiplies both operands	A * B will give 14
/	Divides one operand by another and returns a floating point result	B / A will give 3.5
\	Divides one operand by another and returns an integer result	B \ A will give 3
MOD	Modulus Operator and remainder of after an integer division	B MOD A will give 1

Operators - Comparison

Operator	Description	Example
=	Checks if the values of two operands are equal or not; if yes, then condition becomes true.	(A = B) is not true.
<>	Checks if the values of two operands are equal or not; if values are not equal, then condition becomes true.	(A <> B) is true.
>	Checks if the value of left operand is greater than the value of right operand; if yes, then condition becomes true.	(A > B) is not true.
<	Checks if the value of left operand is less than the value of right operand; if yes, then condition becomes true.	(A < B) is true.
>=	Checks if the value of left operand is greater than or equal to the value of right operand; if yes, then condition becomes true.	(A >= B) is not true.
<=	Checks if the value of left operand is less than or equal to the value of right operand; if yes, then condition becomes true.	(A <= B) is true.

Operators - Logical

Operator	Description	Example
And	It is the logical as well as bitwise AND operator. If both the operands are true, then the condition becomes true. This operator does not perform short-circuiting, i.e., it evaluates both the expressions.	(A And B) is False.
Or	It is the logical as well as bitwise OR operator. If any of the two operands is true, then condition becomes true. This operator does not perform short-circuiting, i.e., it evaluates both the expressions.	(A Or B) is True.
Not	It is the logical as well as bitwise NOT operator. Use to reverses the logical state of its operand. If a condition is true, then Logical NOT operator will make false.	Not(A And B) is True.
Xor	It is the logical as well as bitwise Logical Exclusive OR operator. performs logical *exclusion* on two Boolean expressions. If exactly one expression evaluates to True, but not both, Xor returns True. If both expressions evaluate to True or both evaluate to False, Xor returns False. It always evaluates both expressions and there is no short-circuiting counterpart of this operator.	A Xor B is True.
AndAlso	It is the logical AND operator. It works only on Boolean data. It performs short-circuiting.	(A AndAlso B) is False.
OrElse	It is the logical OR operator. It works only on Boolean data. It performs short-circuiting.	(A OrElse B) is True.
IsFalse	It determines whether an expression is False.	
IsTrue	It determines whether an expression is True.	

Link

Operators

- **Is Operator** - It compares two object reference variables and determines if two object references refer to the same object without performing value comparisons. If object1 and object2 both refer to the exact same object instance, the result is True; otherwise, the result is False.
- **IsNot Operator** - It also compares two object reference variables and determines if two object references refer to different objects. If object1 and object2 both refer to the exact same object instance, the result is False; otherwise, the result is True.
- **Like Operator** - It compares a string against a pattern. Link

Switch Case

```
Select Case Variable
    Case 1
        'Do something if Variable is equal to 1
    Case 2
        'Do something if Variable is equal to 2
    Case Else
        'Do something if Variable is not equal to 1 nor 2
End Select
```

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Switch Case

```
Select Case Variable
    Case 1,2,3
        'Do something if Variable is equal to 1, 2 or 3
    Case 4 to 10
        'Do something if Variable is between 4 and 10
End Select
```

EXO 2

Switch Case –Exo 2

1- Using a switch case, ask the user for a number between 1 and 12 and display the associated month for the number given, also validate that the number is between 1 and 12.

Loops

While

While variable = 10

    ‘Execute while variable is equal to 10

End While

```
While condition
    [ statements ]
    [ Continue While ]
    [ statements ]
    [ Exit While ]
    [ statements ]
End While
```

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Do While

Do

‘will be executed at least once

Loop While variable = 10

```
Do [ { While | Until } condition ]
    [ statements ]
    [ Continue Do ]
    [ statements ]
    [ Exit Do ]
    [ statements ]
Loop
' -or-
Do
    [ statements ]
    [ Continue Do ]
    [ statements ]
    [ Exit Do ]
    [ statements ]
Loop [ { While | Until } condition ]
```

Do

‘will be executed at least once

Loop Until variable = 10

For

```
Dim x As Integer
For x = 1 to 10
   'Execute 10 times
Next
```

```
For counter [ As datatype ] = start To end [ Step step ]
    [ statements ]
    [ Continue For ]
    [ statements ]
    [ Exit For ]
    [ statements ]
Next [ counter ]
```

x += 1 → x = x + 1

x -= 1 → x = x - 1

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For

```
For x As Integer = 1 to 10 step 2
    'Instruction to execute 5 times
Next
```

EXO 2

EXO 2

2- Re-write the last code (temperature conversion). This time validate the user's entry. Then ask first for either Fahrenheit or Celsius then show the right result.

Validation:

To validate the user's entry for a numeric value

- IsNumeric()