محاضرات الفيجول بيسك
تعريف المتغيرات

Written by Ass .Lecturer Layth.A.Hussein

Syntax

In VB, you need to declare the variables before using them.

```
Dim <<variable_name>> As <<variable_type>>
```

variable type	Range of Values
Byte	0 to 255
Integer	-32,768 to 32,767
Long	-2,147,483,648 to 2,147,483,648
Single	-3.402823E+38 to -1.401298E-45 for negative values 1.401298E-45 to 3.402823E+38 for positive values.
Double	-1.79769313486232e+308 to -4.94065645841247E-324 for negative values 4.94065645841247E-324 to 1.79769313486232e+308 for positive values.

Constant is a named memory location used to hold a value that CANNOT be changed during the script execution. Like pi=3.14 ,1M=100cm …..eg

The Arithmetic Operators

Following arithmetic operators are supported by VB

Assume variable A holds 5 and variable B holds 10, then −

Show Examples

Operator	Description	Example
+	Adds the two operands	A + B will give 15
-	Subtracts the second operand from the first	A - B will give -5
*	Multiplies both the operands	A * B will give 50
/	Divides the numerator by the denominator	B / A will give 2
%	Modulus operator and the remainder after an integer division	B % A will give 0
^	Exponentiation operator	B ^ A will give 100000

Binary Logical Operators

The And Operator performs logical conjunction on two Boolean expressions. If both expressions evaluate to True, then And returns True. If at least one of the expressions evaluates to False, then And returns False.

The Or Operator performs logical disjunction or inclusion on two Boolean expressions. If either expression evaluates to True, or both evaluate to True, then Or returns True. If neither expression evaluates to True, Or returns False.

example

```
Private Sub Command1_Click()
Dim a, b,  As Boolean
a = 23 > 14 And 11 > 8
b = 14 > 23 And 11 > 8
Print "a=";a
Print "b=";b
End Sub
```

if we execute this code we will show a=True b= False because the first condition correct and second is not correct

The Comparison Operators

There are following comparison operators supported by VBA.

Assume variable A holds 10 and variable B holds 20, then −

Show Examples

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

Decision making allows the programmers to control the execution flow of a script or one of its sections. The execution is governed by one or more conditional statements.

Following is the general form of a typical decision making structure found in most of the programming languages.

VBA provides the following types of decision making statements. Click the following links to check their details.

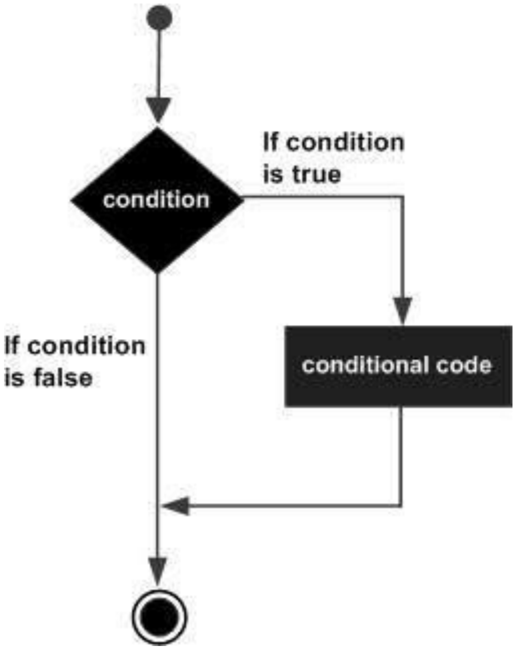
Sr.No.	Statement & Description
1	if statement An **if** statement consists of a Boolean expression followed by one or more statements.
2	if..else statement An **if else** statement consists of a Boolean expression followed by one or more statements. If the condition is True, the statements under **If** statements are executed. If the condition is false, the **Else** part of the script is executed.
3	if...elseif..else statement An **if** statement followed by one or more **ElseIf** statements, that consists of Boolean expressions and then followed by an optional **else statement**, which executes when all the condition become false.
4	switch statement A **switch** statement allows a variable to be tested for equality against a list of values.

Syntax

1-Following is the syntax of an **If** statement in VBScript.

```
If(boolean_expression) Then
   Statement 1
   .....
   .....
   Statement n
End If
```

Flow Diagram



Example

For command1 purpose, let us find the biggest between the two numbers of an Excel with the help of a function.

```
Private Sub command1_Click()
   Dim x As Integer
   Dim y As Integer

   x = 234
   y = 32

   If x > y Then
      MsgBox "X is Greater than Y"
   End If
End Sub
```

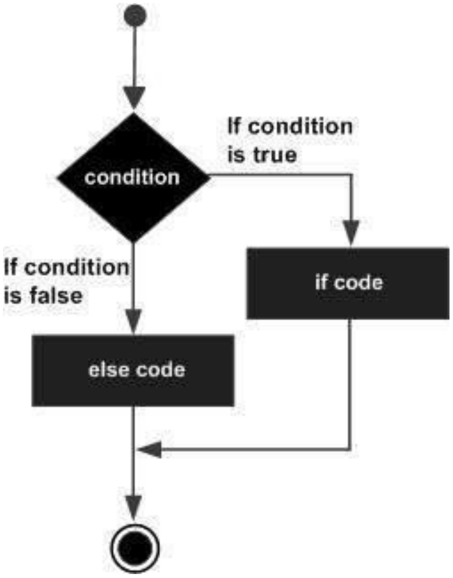
2-

Syntax

2-Following is the syntax of an **If** Else statement in VBScript.

```
If(boolean_expression) Then
   Statement 1
   .....
   .....
   Statement n
Else
   Statement 1
   .....
   ....
   Statement n
End If
```

Flow Diagram



Example

For command purpose, let us find F(x,y) if x>y   F(x)= x ^ 2 + 5

If x<y   F(x)=y+2x

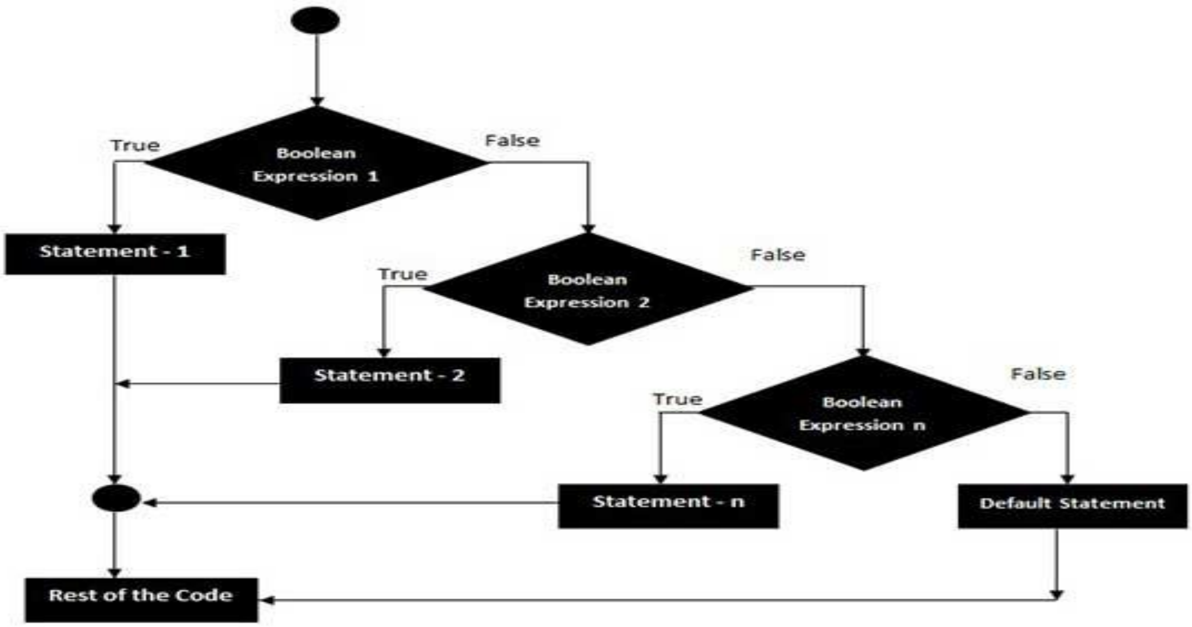
```
Private Sub Command1_Click()
Dim x As single
Dim y As single
Dim F as single
x = Val(Text1.Text)
y = Val(Text1.Text)

 'x=val(inputbox("enter value of x")
 If x >y Then
 F = x ^ 2 + 5
  Text2.Text = CStr(F)



 Else
 F= y+2*y
 Text2.Text = CStr(F)

 End If

End Sub
End Sub
```

Syntax

Following is the syntax of an If Elseif - Else statement in VBScript.

```
If(boolean_expression) Then
   Statement 1
   .....
   .....
   Statement n
ElseIf (boolean_expression) Then
   Statement 1
   .....
   ....
   Statement n
ElseIf (boolean_expression) Then
   Statement 1
   .....
   ....
   Statement n
Else
   Statement 1
   .....
   ....
   Statement n
End If
```

Flow Diagram



Example

Write program in VB to calculate Salary of un employee according his grade use if elseif else

Grade	bonus	Salary
1	0	Salary=bonus+basic salary
2	bonus=0.3*basic Salary	
3	bonus=0.4*basic Salary	
4	bonus=0.9*basic Salary	

```
Private Sub if_demo_Click()
   Dim g As Integer
Dim b As Single
Dim bonus As Single
Dim salary As Single
Dim x As String
b = Val(InputBox("enter basic salary"))
g = Val(InputBox("grade of employee"))
If g = 1 Then
bonus = 0
ElseIf g = 2 Then
bonus = b * 0.3
ElseIf g = 3 Then
bonus = b * 0.4
Else
bonus = b * 0.9
End If
salary = b + bonus
‘text1.text=cstr(salary)
x = MsgBox("salary=" & salary, vbYesNo + vbInformation)
If x = vbYes Then End

End Sub
```

Syntax

Following is the syntax of a Switch statement in VBScript.

```
Select Case expression
   Case expressionlist1
      statement1
      statement2
      ....
      ....
      statement1n
   Case expressionlist2
      statement1
      statement2
      ....
      ....
   Case expressionlistn
      statement1
      statement2
      ....
      ....
   Case Else
      elsestatement1
      elsestatement2
      ....
      ....
End Select
```

Example

For command purpose, let us find the Ampere ,power electric ,voltage

```
Private Sub Command1_Click()
Dim I, p, V As Double

Select Case Combo1.Text

Case "p"
Text1.Text = ""
p = 0
V = Val(InputBox("enter vale of V"))
I = Val(InputBox("enter vale of I"))
p = V * I
Text1.Text = Combo1.Text & "=" & p & "V.A"
Case "I"
Text1.Text = ""
I = 0
p = Val(InputBox("enter vale of p"))
V = Val(InputBox("enter vale of v"))
I = p / V
Text1.Text = Combo1.Text & "=" & I & "A"

Case "V"
Text1.Text = ""
V = 0
p = Val(InputBox("enter vale of p"))
I = Val(InputBox("enter vale of I"))

V = p / I
Text1.Text = Combo1.Text & "=" & V & "V"

End Select



End Sub
```

```
Private Sub Form_Load()
Combo1.AddItem ("p")
Combo1.AddItem ("I")
Combo1.AddItem ("V")
Text1.Text = ""





End Sub
```