



Al-Mustaqbal University

College of Engineering and Technology

Department of Medical Instrumentation Techniques Engineering

Class: Second Class

Subject: Computer Applications/2

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Lecture Address: Loop statement

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Loop statement:

Visual basic supports statement to perform loops. The loops statement could Have different structures as follows:

1- Unconditional loop.

2- Conditional loop.

- Unconditional loop:

Loops apply programming statements for fixed number of times using counter

(for... next) statement.

The standard form is:

For Index = Initial to final step-size

One or more Statement(s)

Next [Index]

Example1: Write a program to print (hello) five times.

Sol:

```
Dim i as integer
```

```
For i = 1 To 5
```

```
ListBox1.Items.Add( "hello")
```

```
Next
```

```
End Sub
```

Example2: Write a program to print even numbers from 1 to 10.

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Sol:

```
Dim i as integer
```

```
For i = 2 To 10 step 2
```

```
ListBox1.Items. Add (i)
```

```
Next i
```

```
End Sub
```

Example3: Write a program to print numbers from 1 to 10 by using **For...Next** loop function.

The screenshot displays the Microsoft Visual Studio environment. On the left, the code editor shows the following VB.NET code for a button click event:

```
Public Class Form1  
    Private Sub Button1_Click(sender As Object, e As EventArgs)  
        Dim i As Integer  
        Dim w As Integer  
        w = Val(TextBox2.Text)  
  
        For i = 1 To 10 Step 1  
  
            ListBox1.Items.Add(i)  
            ' ListBox1.Items.Add(i & " * " & w & "=" & i * w)  
        Next  
    End Sub  
End Class
```

On the right, the 'Form1' window is shown in design view. It contains a 'clear' button at the top, three buttons labeled 'for... Next', 'Do while', and 'do Until' in the middle, and a 'do Until' button at the bottom right. Below the buttons, there is a text box labeled 'Enter the number' and a list box containing the numbers 1 through 10.



- Conditional loop

Loops repeat programming statements according to specific condition.

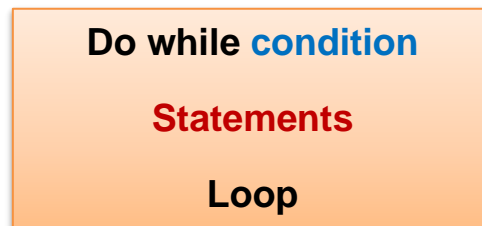
There are two types of conditional loop:

1- Do while

2- Do until

- **Do while loop:** In this loop the statements will be implemented and repeated whenever the condition satisfied.

The standard form is:



Example4: Write a program to print (hello) five times with its number using do-while loop.

Sol:

```
Dim i as integer
```

```
i = 1
```

```
Do while i <= 5
```

```
ListBox1.Items. Add ("hello")
```

```
i = i + 1
```

```
Loop
```



End Sub

Example4: Write a program to print even numbers from 1 to 10.

Sol:

Dim i as integer

i = 2

Do while i <= 10

ListBox1.Items. Add (i)

i = i + 2

loop

End Sub

Example: Write a program to print numbers from 1 to 10 by using **Do While loop** function.

WindowsApplication1 (Running) - Microsoft Visual Studio

Form1

clear

for... Next Do while do Until

Enter the number

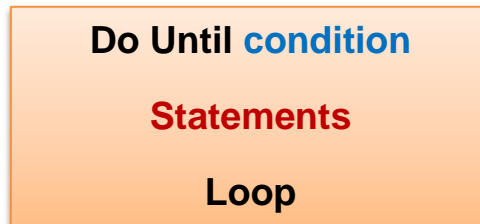
0
1
2
3
4
5
6
7
8
9
10

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- **Do until loop:** In this loop the statements will be implemented and repeated until the condition satisfied (the loop will **stop** when the condition satisfied).

The standard form is:



Example: Write a program to print (hello) five times by using do-until loop.

Sol:

```
Dim i as integer
```

```
i = 1
```

```
Do while i > 5
```

```
ListBox1.Items. Add ("hello")
```

```
i = i + 1
```

```
Loop
```

```
End Sub
```



Example: Write a program to print numbers from 1 to 10 by using **Do Until** loop function.

The screenshot displays the Microsoft Visual Studio IDE with a WindowsApplication1 project running. The code in Form1.vb [Design] is as follows:

```
Private Sub Button4_Click(sender As Object, e As EventArgs)
    ListBox1.Items.Clear()
End Sub

Private Sub Button3_Click(sender As Object, e As EventArgs)
    Dim m As Integer
    Dim w As Integer
    ' w = Val(TextBox2.Text)

    Do Until m > 10
        ListBox1.Items.Add(m)
        ' ListBox1.Items.Add(m & " * " & w & "=" & m * w)
        m = m + 1
    Loop
End Sub
```

The running application window, titled 'Form1', shows a 'clear' button at the top. Below it are three buttons: 'for... Next', 'Do while', and 'do Until', with the 'do Until' button selected. Under the 'do Until' button, there is a text label 'Enter the number' followed by an empty text box. To the right of the text box is a list box containing the numbers 0 through 10, with 10 at the bottom.

**W.H:**

Q1: Write a program to enter the value of two variables (X and Y). Find and print the maximum value for two variables. Design form window.

Q2: Design a form and write code to find the summation of even numbers (from 0 to 100) (use while).

Q3: Design a form and write code to find the summation of odd numbers (from 0 to 100).