Do Loops

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CS 113: Introduction to Computers
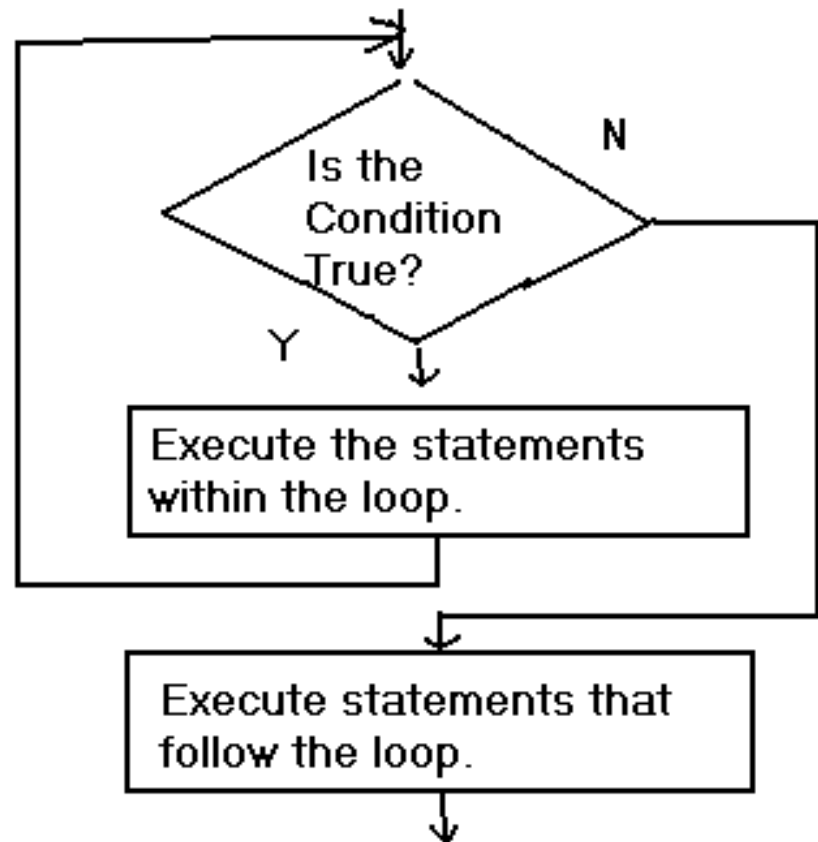
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Do Loop

- A *loop* is a VB structure used to repeat a sequence of statements a number of times.

- Repetitions of this sequence are called *passes*, or *iterations*.

- A Do statement precedes the sequence of statements, and a Loop statement follows the sequence.

Do While Loop

Do While *condition*

statement(s)

Loop

Is the Condition True?

N

Y

Execute the statements within the loop.

Execute statements that follow the loop.
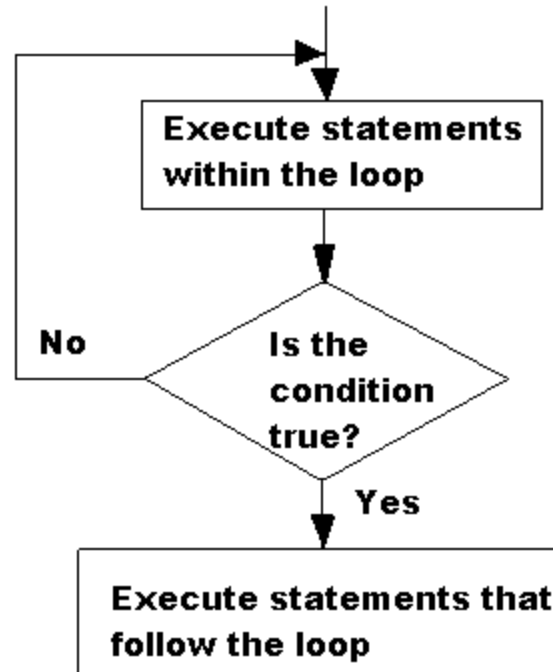
Do Until Loop

Do

  statement(s)

Loop Until *condition*

Example of a Do While Loop

```
Private Sub cmdDisplay_Click( )
    Dim intNum As Integer
    'Display numbers from 1 to 10
    intNum = 1 'Initialize intNum
    Do While intNum <= 10
        picDisplayNumbers.Print intNum;
        intNum = intNum + 1
    Loop
End Sub
```

Example of a Do Until Loop

```
Private Sub cmdDisplay_Click( )
    Dim intNum As Integer
    'Display the numbers from 1 to 10
    intNum = 1 'Initialize intNum
    Do
        picNumbers.Print intNum;
        intNum = intNum + 1
    Loop Until intNum > 10
End Sub
```

Counters and Accumulators

- A *counter* is a numeric variable used to keep track of the number of list items that have been processed so far.

- An *accumulator* is a numeric variable used to store the current total of processed numbers from a list.

Flags and the EOF function

- A *flag* is a variable used to keep track of whether a certain situation has occurred. Flags tend to be variables of type Boolean.

- The *EOF function* is used to determine whether the end of a file has been reached. "EOF" stands for "End Of File". The argument of the EOF function is the file's reference number, so its call has the format

  EOF(*n*)

  where *n* is an integer number.

Example

```vb
Private Sub cmdDisplay_Click()
    Dim nom As String, phoneNum As String
    Dim fileName As String
    picNumbers.Cls
    fileName = InputBox("Enter the file name","Hi!")
    fileName = App.Path & "\" & fileName
    Open fileName For Input As #1
    Do While Not EOF(1)
        Input #1, nom, phoneNum
        picNumbers.Print nom, phoneNum
    Loop
    Close #1
End Sub
```

Nested Loops

- The statements within a Do loop are allowed to contain other Do loops. This configuration is referred to as **_nested loops_**.