

LOOPING

Looping makes us to run one or more instructions several times. The loop can be classified in two types:

1-Unconditional Looping

1-For - Next

The format of [For – Next]

For Index = Initial to Final [step – size]

One or more statements

Next [index]

For and Next it's a reserved word.

Index It is a variable, it works as a counter.

Final is a variable or number or expression that determines the end of looping.

Initial It is variable or number or any expression that determine the starting of loop.

Step – size is an optional value , it a number or variable ,that value is add to the initial value after each looping , it may be positive or negative value , if no step with (for...next) that means the value will add to initial value was (1).

In case that (step-size) was positive the loop will counting until the (index) be larger than (final) value, while if the (step-size) is negative the looping will stopping when index value be smaller than final value .

Example 1 What is the difference between the following two loops?

(1) For I=1 to 10 step 1 (2) For I=10 to 1 step-1

St 1	St 1
St 2	St 2
.	.
.	.
.	.
St n	St n
Next I	Next I

The first loop the value of (I) will increase by 1, while the second loop the value of (I) will decrease by 1.

Example 2 Write a program to find the total of even number between 10 and 20?

```
Private sub Cmdeven_click()
```

```
  Dim Sum as long
```

```
  Sum=0
```

```
  For I=10 to 20 step2
```

```
    Sum= Sum + I
```

```
  Next I
```

```
  Lblres.caption= Sum
```

```
End sub
```

Object	Property	Value
Command	Name	Cmdeven
	Caption	Sum Even
Label	Name	Lblres
	Caption	Result

Note

List(I) is the location name of the list.

List1	
9	List1.list(0)=9
6	List1.list(1)=6
80	List1.list(2)=80
5	List1.list(3)=5
34	List1.list(4)=34

Note

ListCount>Returns the number of items in the list.

Note

The Form Load procedure is executed when the form is loaded in the memory i.e. when the program is running.

Example 3Write a program to search any word in text1 if it found in list1?

```
Private Sub Form_Load()
List1.AddItem "Ahmed"
List1.AddItem "Adel"
List1.AddItem "Mustafa"
List1.AddItem "Khalid"
End Sub
```

```
Private sub cmdsearch_click()
Dim str1 As String
Dim flag As Boolean
Dim iAs Integer
flag = False
str1 = Text1.Text
For i = 0 To List1.ListCount
If List1.List(i) = str1 Then
flag = True
End If
Next i
If flag Then
lblres.Caption = "the word is found"
Else
lblres.Caption = "the word is not found"
End if
End Sub
```

Object	Property	Value
Command	Name Caption	Cmdsearch Search
Text Box	Name Text	Text1
List Box	Name	List1
Label	Name Caption	Lblres Result

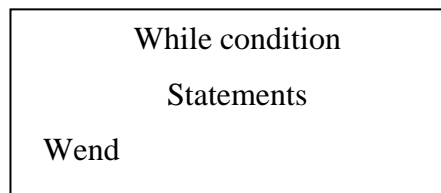
H.W. Write a program to find the sum of the following series?

$$\text{Sum} = 6+9+12+\dots+21$$

2-Conditional Looping

- While

The format of while statement is:



Example1

Find the sum of even numbers from 1 to 10?

```
Private Sub cmdeven_Click ()
```

```
Dim i, sum As long
```

```
sum = 0
```

```
i = 2
```

```
While (i <= 10)
```

```
sum = sum + i
```

```
i = i + 2
```

```
Wend
```

```
Lblres.caption = sum
```

```
End Sub
```

Object	Property	Value
Command	Name	Cmdeven
	Caption	Sum Even
Label	Name	Lblres
	Caption	Result

Example 2

Write a program to load list with odd number from (1-10) then find the sum of them.

```
Private Sub Cmdsum_Click()
```

```
Dim I As Integer
```

```
I = 1
```

```
While (I <= 10)
```

```
List1.AddItem I
```

Object	Property	Value
Command	Name	Cmdsum
	Caption	Sum Odd
Label	Name	Lblres
	Caption	Result
List Box	Name	List1

```

I = I + 2
Wend
Sum = 0
I = 0
While (I < 10)
Sum = Sum + Val(List1.List(I))
I = I + 1
Wend
Lblres.Caption = Sum
End Sub

```

H.W.

- 1-Solve the search example by using while.
- 2- Find the sum of odd number from 1 to 10.

- **Do-Loop Until**

The format of Do-Loop is:

```

Do
Statements
Loop Until condition

```

Example 1

Find factorial of (6)

Where $\text{Fact} = 1 * 2 * 3 * \dots * 6$.

```

Private Sub Cmdfact_Click()
Dim I, Fact As Integer
I = 1
Fact = 1
Do
I = I + 1
Fact = Fact * I

```

Object	Property	Value
Command	Name	Cmdfact
	Caption	Factorial
Label	Name	Lblres
	Caption	Result

```

Loop Until (I=6)
Lblres.Caption = Fact
End Sub

```

Example 2

Factorial= $2*4*6 * \dots *N$ if N is even ,orfactorial= $1*3*5 \dots *N$ if N is odd ?

```
Private Sub Cmdfoe_Click ()
```

```

Dim N, IAs Integer
Dim Fact As Long
Fact = 1
N = Val (Text1.Text)
If N Mod 2 = 0 Then
I = 0
Else
I = 1
End If
Do
I = I + 2
Fact = Fact * I
Loop Until (I = N)
Lblres.Caption = Fact
End Sub

```

Object	Property	Value
Command	Name	Cmdfoe
	Caption	Factorial
Label	Name	Lblres
	Caption	Result
Text Box	Name	Text1