
VBA Loop (MS Excel)

Loops are used to execute statements repeatedly while a condition or a combination of conditions is met. In VBA, there are five loops:

- For next loop
- While loop
- Do While loop
- Do Until loop
- For each loop

-For next Loop

Syntax:

For initial_value To end_value [*Step* number]

 Do something... (block code)

Next

Example:

```
Dim i,sum As Integer
```

```
sum=0
```

```
For i=0 to 100
```

```
    sum=sum+i
```

```
Next
```

```
Msgbox "Total=" & sum
```

-While Loop

Syntax:

```
While condition
    do something
Wend
```

Example:

```
Dim x As Integer
x=0
while x>=0
    x=InputBox("Enter a positive value:")
    MsgBox "The Square of this value is:" & x*x
wend
```

-Do While Loop

Syntax:

```
Do While condition
    do something
Loop
```

Or

```
Do
    do something
Loop While condition
```

Example:

```
Dim con As String
```

```
Dim result As Integer
```

```
con="y"
```

```
Do while con="y"
```

```
    result=Cint((6*rnd)+1) 'generate random numbers from 1 to 6
```

```
    MsgBox "The result of rolling a die is:" & result
```

```
    con=InputBox("Continue?y/n:")
```

Loop

-Do Until Loop

Syntax:

```
Do Until condition
```

```
do something
```

```
Loop
```

Or

```
Do
```

```
do something
```

```
Loop Until condition
```

Example:

```
Dim x As Integer
```

```
x=1
```

```
Do until x>10
```

```
Cells(x,1)=x*x; //show squared values of x in the active sheet
```

```
x=x+1
```

```
Loop
```

-For each Loop

Syntax:

```
for each value in collection--array
```

```
do something
```

```
Next
```

Example:

```
Dim arr(5) As Integer 'Declaring the array
```

```
Dim i As Integer
```

```
Dim val As String
```

```
For i=0 to 4 'Assign values to the arr array
```

```
arr(i)=i*2
```

```
Next
```

```
for each x in arr 'Accessing values from the arr array
```

```
val=val &x & vbcrLf
```

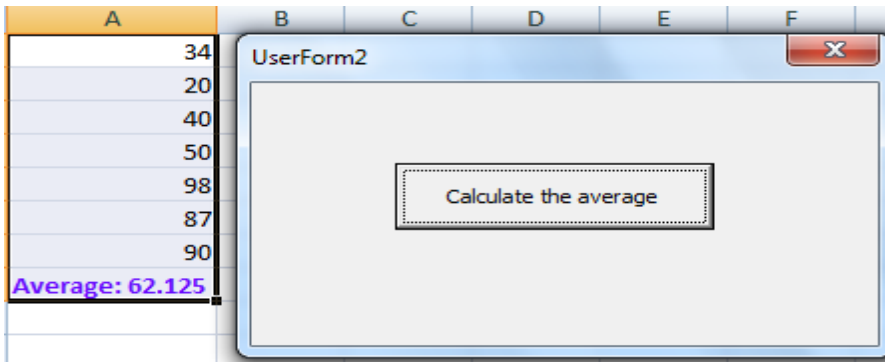
```
Next
```

```
Msgbox val
```

VBA loop example

To apply VBA loop in the real practice, the example will use **VBA loop** (while loop) to calculate the average of values in Excel cells. The result of the calculation will be placed immediately below the range of values that are populated in to the cells automatically by **VBA loop code**.

To run this example VBA code, you will need a Form and a CommandButton.



VBA code for this example:

```
Private Sub CommandButton1_Click()
```

```
    Dim s As Long
```

```
    Dim i As Integer
```

```
    i = 1
```

```
    s = 0
```

```
    'Populate values in Excel cells
```

```
    Range("A1") = 34
```

```
    Range("A2") = 20
```

```
    Range("A3") = 40
```

```
    Range("A4") = 50
```

```
    Range("A5") = 98
```

```
    Range("A6") = 87
```

```
    Range("A7") = 90
```

```
    Range("A8") = 78
```

Range("A1:A8").Select 'Select the range of values to sum

While i <= Selection.Count 'Sum values in Excel cells using while loop

s = s + Range("A" & i) ' then the average can be calculated

i = i + 1

Wend

'Show average result in the Excel cell below the range of values

Range("A" & Selection.Count) = "Average: " & s / Selection.Count

Range("A" & Selection.Count).Font.Bold = True 'Make the font bold

Range("A" & Selection.Count).Font.Color = RGB(100, 10, 255) ' Coloring the result

Range("A:A").Columns.AutoFit 'Make the column width fit the text

End Sub

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