For…Next Loops

- **Declarations of Control Variables**

  Sample of For … Next Loop

  For **Counter** = 1 to 100

  Sum = Sum + Counter

  Next **Counter**

  Variable "Counter" is a control variable

- **Nested For … Next Loops**

Sample

```
Dim i As Integer
For i = 1 To 5
    lstTable.Items.Add(i & " " & i ^ 2)
Next
```

The loop control variable, i, is

- Initialized to 1
- Tested against the stop value, 5
- Incremented by 1 at the Next statement

Similar to :
   lstTable.Items.Add(1 & " " & 1 ^ 2)
   lstTable.Items.Add(2 & " " & 2 ^ 2)
   lstTable.Items.Add(3 & " " & 3 ^ 2)
   lstTable.Items.Add(4 & " " & 4 ^ 2)
   lstTable.Items.Add(5 & " " & 5 ^ 2)

Do While equivalent

```
i = 1
Do While i <= 5
    lstTable.Items.Add(i & " " & i ^ 2)
    i += 1
Loop
```

For … Step…Next

- ## For … Step … Next

  Sample of For … Step … Next Loop

  For **Counter** = 1 to 100 **Step 5**

  Sum = Sum + Counter

  Next **Counter**

  > **Variable "Counter" is a control variable**

- ## **"Step"** can be negative number
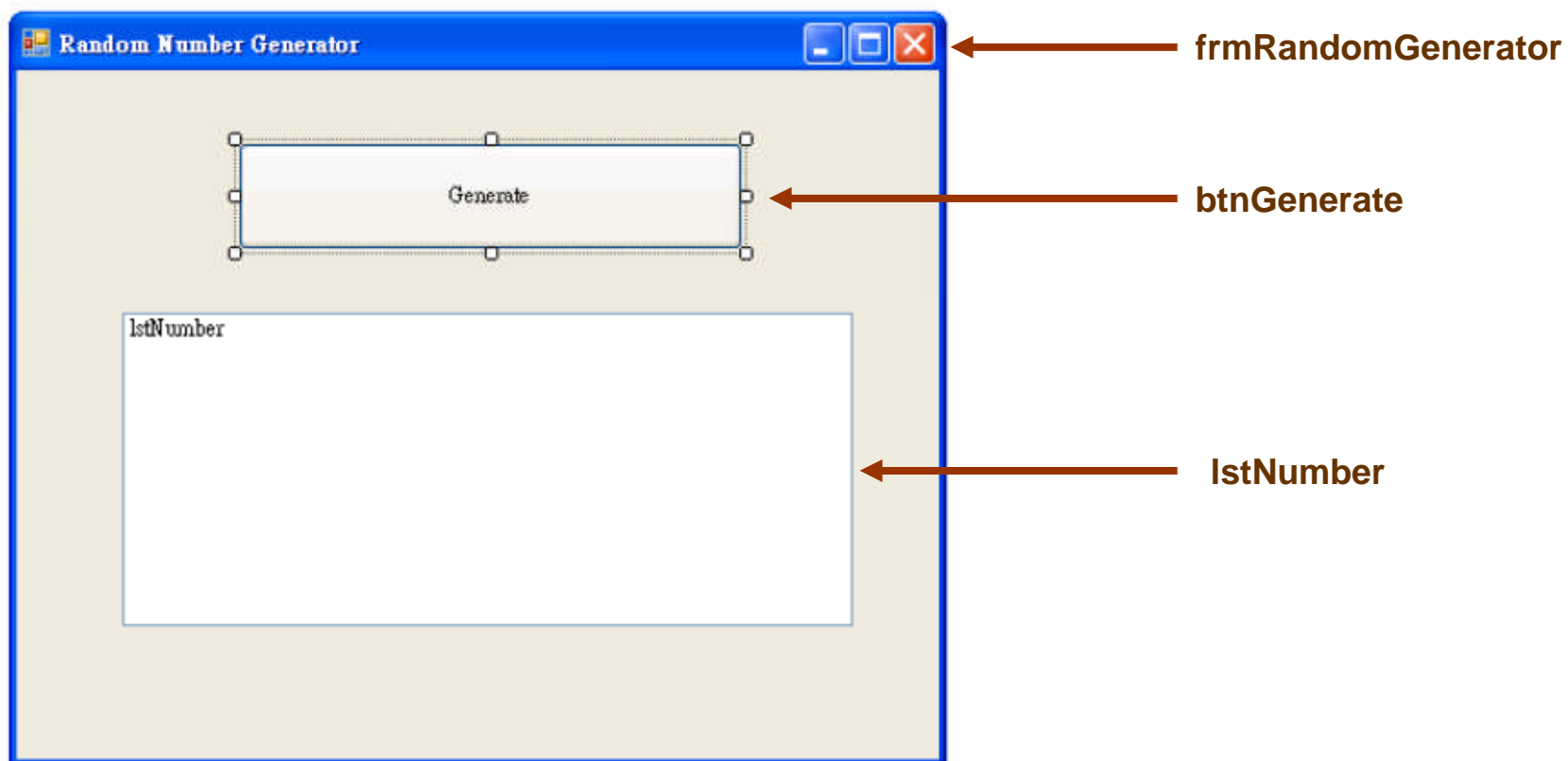
For…Next Loops vs Do While Loop

For Count = 1 to 100
    Sum = Sum + Count
Next Count

VS

Count=1
Do While Count <=100
    Sum = Sum + Count
    Count = Count + 1
Next Count

Example Random Number Generator

frmRandomGenerator

btnGenerate

lstNumber

Code Inside the Generate Button

Dim Count As Integer

Dim Msg As String

lstNumber.Items.Clear()

Randomize()

For Count = 1 To 6

   'Generate Random Number from 1 to 45

   Msg = "Number " & Count & " is " & Int((Rnd() * 45)) + 1

   lstNumber.Items.Add(Msg)

Next Count

Hints

- Code Inside The For Loop Will execute 6 Times.

- Be careful ! Value of variable "Count" **is 7** when the For … Next Loop finish

- For Program Syntax, there is **No "LOOP"**

Chapter 6