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SWIT: 4 Nest Loops

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Learning Outcome

- Student can develop application for solving some problem by inside the program having FOR or WHILE commands.
- Apply ListBox to collect result from the loop running.
- Apply MessageBox to response the result from the program.

Topic

- Nest Loops
- Message box dialog
- Progress bar component
- Loop with conditions
- Dev: Counter-up with skipping sum values
- Dev: Sum of value skipping sum values
- Quiz3

Nest loop

- Nest Loops is a loop that having other loop statements located inside.
- What application use the nest loop?
 - Multivariable controlling something
 - Access to multidimensional array



Loop A

The diagram consists of a large blue rectangle representing 'Loop A'. Inside this rectangle, towards the top-left, is a smaller orange rectangle representing 'Loop B'. The text 'Loop A' is positioned in the top-left corner of the blue rectangle, and 'Loop B' is positioned in the top-left corner of the orange rectangle.

Loop B

```
For I = 0 to 10
```

```
    K = 0
```

```
    While K<10
```

```
        debug.writeline(K & I)
```

```
        K+=1
```

```
    End while
```

```
Next
```

Nest loop styles

- Various style implementing the nest loop, the implement style depends on the skill and experience.
 - While / while
 - For / while
 - While / For
 - For / For
 - ...

Dev: Multiplication table 2 to 12

```
Dim I,K as integer
Dim txt as string
For I = 2 to 12
    K = 1
    While K<12
        txt = I & "x" & K & "=" & I*K
        debug.writeline(txt)
        K+=1
    End while
Next
```



Does application run collect?

MessageBox

Syntax

MessageBox.Show(text, caption, buttons, icon[, defaultButton])

Argument

Meaning

text

text to display in the message box; use sentence capitalization

caption

text to display in the message box's title bar; use book title capitalization

buttons

buttons to display in the message box; can be one of the following constants:

MessageBoxButtons.AbortRetryIgnore

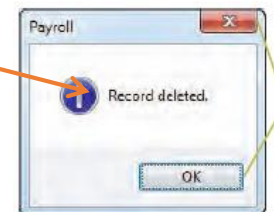
MessageBoxButtons.OK (default setting)

MessageBoxButtons.OKCancel

MessageBoxButtons.RetryCancel

MessageBoxButtons.YesNo

MessageBoxButtons.YesNoCancel




MessageBox

icon

icon to display in the message box; typically, one of the following constants:

`MessageBoxIcon.Exclamation` 

`MessageBoxIcon.Information` 

`MessageBoxIcon.Question` 

`MessageBoxIcon.Stop` 



MessageBox—Return value

MessageBox.Show method's return values

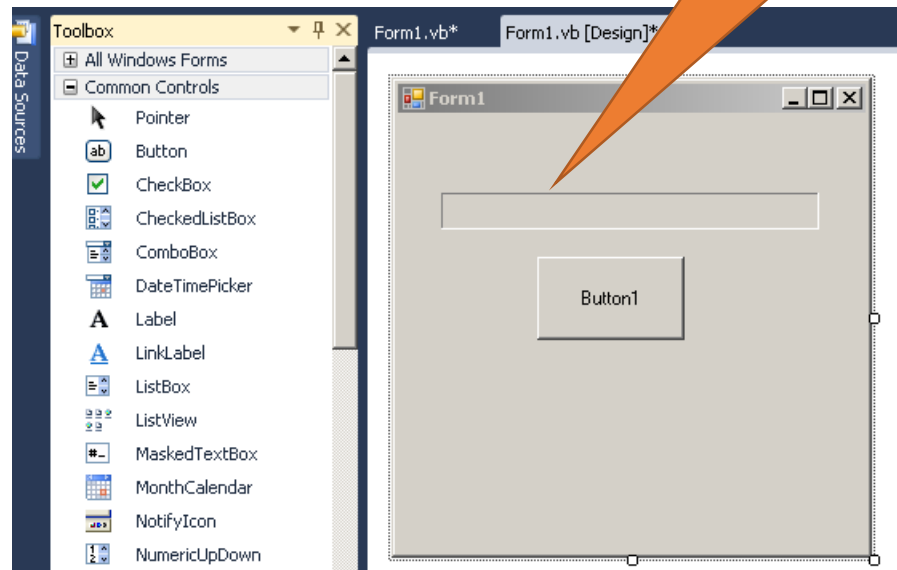
<u>Integer</u>	<u>DialogResult value</u>	<u>Meaning</u>
1	DialogResult.OK	user chose the OK button
2	DialogResult.Cancel	user chose the Cancel button
3	DialogResult.Abort	user chose the Abort button
4	DialogResult.Retry	user chose the Retry button
5	DialogResult.Ignore	user chose the Ignore button
6	DialogResult.Yes	user chose the Yes button
7	DialogResult.No	user chose the No button

Example 1

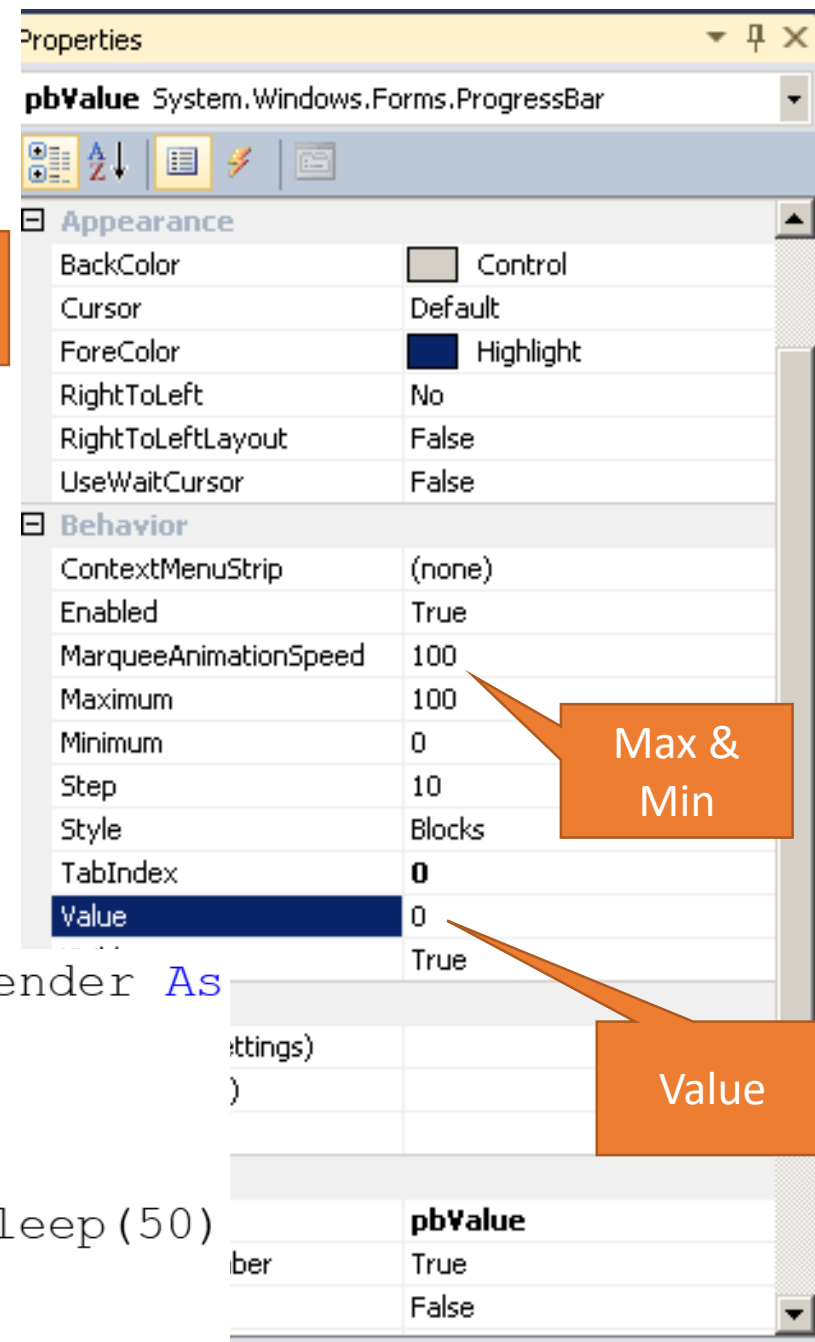
```
Dim dlgButton As DialogResult
dlgButton =
    MessageBox.Show("Delete this record?", "Payroll",
        MessageBoxButtons.YesNo, MessageBoxIcon.Exclamation,
        MessageBoxDefaultButton.Button2)
If dlgButton = DialogResult.Yes Then
    instructions to delete the record
End If
```



Progress bar



Min → Max



Max & Min

Value

```
Private Sub Button1_Click(ByVal sender As  
    Dim i As Integer  
    For i = 1 To 100  
        pbValue.Value = i  
        System.Threading.Thread.Sleep(50)  
    Next  
End Sub
```

Loop with condition

- Natural of the application do not run in the sequence process but it has a path for moving to doing the last work again.

Loop A

Condition

```
For I = 0 to 20
  If I <= 5
    debug.writeline("low")
  End If
  If I > 5 AND I < 10
    debug.writeline("Mid")
  End if
  If I >= 10
    debug.writeline("Mid")
  End if
Next
```

Dev: Count-up with a skip number

- In a line of 20 worker, Head need to select the worker who counting 3 (by counting a sequence from 1 to 3) and skip counting every ten (5, 15, 20)



Dev: Return from the money deposit

- The bank calculate the interest from the deposit every night. The interest and deposit from yesterday brings to calculate in today.
- Set the interest rate for the saving account at 0.25%.
- Somsak gets money from a work and deposit every day with 100 Baht in one year (365days)
- What is the money return to Somsak in a year past.
- Functional of program
 - Get deposit money
 - Get interest rate
 - Show money-interest and total-sum in a year

Code: Return from the money deposit

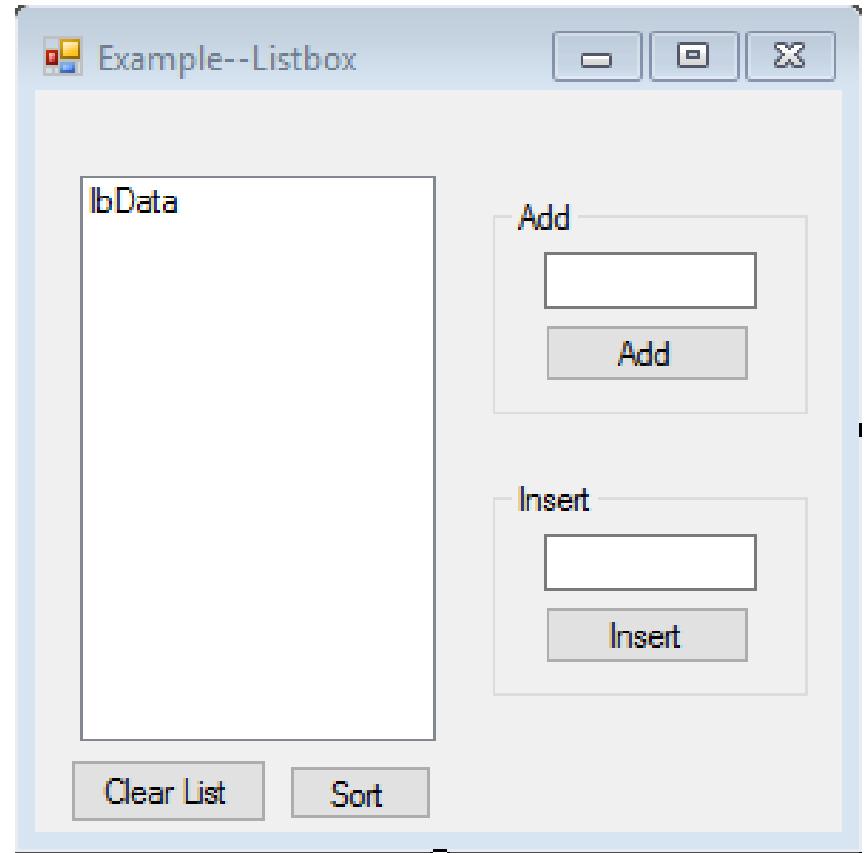
```
Dim money, interest As Double
Dim d As Integer
Dim total As Double
Dim irr As Double = 0 'interest rate return

money = Val(tbDepositMoney.text)
interest = Val(tbInterrestRate.text)

For d = 1 To 3650
    irr = total * interest / 100 / 365
    total += money + irr
    Debug.WriteLine(d & " " & irr & " " & total)
Next
```

ListBox control commands

1) Create an application form by placing components like as the picture



2) Write code below

```
Private Sub btnAdd_Click(sender As System.Object, e As System.EventArgs)
    Dim dataexist As Boolean = False
    dataexist = lbData.Items.Contains(tbInput.Text)
    If (Not dataexist And tbInput.Text.Length > 0) Then
        lbData.Items.Add(tbInput.Text)
    Else
        MsgBox("Existing input data or no input data!")
    End If
    tbInput.Clear()
End Sub
```

```
Private Sub btnClear_Click(sender As System.Object, e As System.EventArgs)
    Dim dlgResponse As DialogResult
    dlgResponse = MessageBox.Show("Do you ensure to delete data?",
        "System", MessageBoxButtons.YesNo, MessageBoxIcon.Warning)
    If (dlgResponse = DialogResult.Yes) Then
        lbData.Items.Clear()
    End If
End Sub
```



```
Private Sub btnInsert_Click(sender As System.Object, e As System.EventArgs)
    Dim dataexist As Boolean = False
    dataexist = lbData.Items.Contains(tbInput2.Text)
    If (Not dataexist And tbInput2.Text.Length > 0) Then
        Dim i As Integer = lbData.SelectedIndex
        lbData.Items.Insert(i, tbInput2.Text)
    Else
        MsgBox("Existing input data or no input data!")
    End If
    tbInput2.Clear()
End Sub
```

```
Private Sub btnSort_Click(sender As System.Object, e As System.EventArgs) Ha
    lbData.Sorted = True
End Sub
```

Quiz3