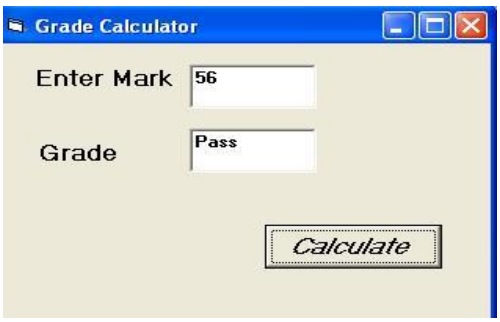
Control Structures

Select- Case statement: Select - Case structure is an alternative to If – Then - ElseIf for selectively executing a single block of statements from among multiple block of statements. The Select Case control structure is slightly different from the If - ElseIf control structure. The difference is that the Select Case control structure basically only makes decision on one expression or dimension while the If - ElseIf statement control structure may evaluate only one expression, each If - ElseIf statement may also compute entirely different dimensions. Select- Case is more convenient to use than the If- Else - End If. The format of the Select Case control structure is as follows:

Select Case *test expression*
  Case expression list 1
    VB statements
  Case expression list 2
    VB Statements
  Case expression list 3
    VB statements
  Case expression list 4
  Case Else
    VB Statements
End Select

Example 1: Example **4.3** can be rewritten as follows:



Solution1	**Solution2**
Private Sub Command1_click() Dim Mark As Single , Grade as String Mark = Val (Text1.Text) **Select Case** Mark **Case** 0 To 49 Grade="Fail" **Case** 50 To 59 Grade="Pass **Case** 60 To 69 Grade="Medium" **Case** 70 to 79 Grade="Good" **Case** 80 To 89 Grade="Very Good" **Case** 90 To 99	Dim Mark As Single , Grade as String Mark = Val (Text1.Text) **Select Case** Mark **Case Is** >100 , Is < 0 Msgbox "Wrong entry, please Re-enter the mark", 16 , " Error" Text1.Text=" " : Text2.Text= " " **Case Is** > = 90 Grade="Excellent" **Case Is** > = 80 Grade="Very Good" **Case Is** >= 70 Grade="Good **Case Is** >= 60 Grade="Medium" **Case Is** >=50 Grade="Pass" **Case Else**

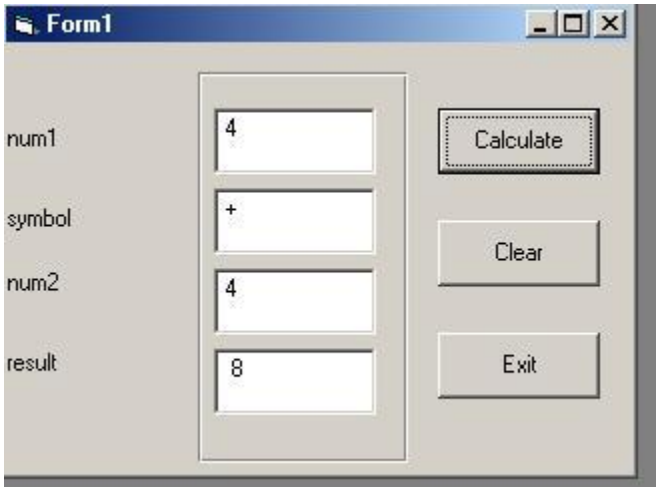
Grade="Excellent" **Case Else** Msgbox "Wrong entry, please Re-enter the mark", 16 , " Error" Text1.Text=" " : Text2.Text= " " **End Select** Text2.Text=Grade End Sub	Grade="Fail" **End Select** Text2.Text=Grade End Sub

Examples:

- Select Case X
  Case 3, 5, 8 : Print X Value of X (3 or 5 or 8) only.
  End Select
- Select Case X
  Case 3, 5, 8 To 20: print X Value of X (3 or 5 or 8,9,10,….20) only.
  End Select

- Select Case X
  Case 3: X= X+1: Print X Value of X (3) then print (X=4).
  Case 3,8 To 20 : Print X Ignore statement when value of X=3
  End Select

Example 2: Design a form with four text boxes and three commands. Design the program so that the values of num1, num2, and Symbol are entered into separate three text boxes. Write a code to perform (add, subtract, multiply and divide) when pressing on command (Calculate). Display the result in separate text box. The command (Clear) used to clear values in text boxes. Click command (Exit) to end the program and return to the project window.



Solution:

```
Private Sub Calculate _Click()
  Dim x As Double, y As Double, z As Double
  Dim symbol As String
      x = val(Text1.Text)
      Symbol = Text2.Text
      y = val(Text3.Text)
  Select Case Symbol
        Case " + " : z = x + y
        Case " - " : z = x - y
        Case " * " : z = x * y
        Case " / "
         If y = 0 Then MsgBox "division by zero"
         Text3.Text = "" : GoTo 10
          z = x / y
```

```
  Case Else
        MsgBox "select any symbol(+,-,*,/)"
        :GoTo 10
  End Select
  Text4.Text = Str(z)
10 End Sub
Private Sub Clear_Click()
Text1.Text = ""
Text2.Text = ""
Text3.Text = ""
Text4.Text = ""
End Sub
Private Sub Exit_Click()
End
End Sub
```

Exercise : Create a Visual Basic project to find the value of function f(Z) from the equations are below. Write a code so that the value of variables Y and Z are entered into two boxes. Display the value of function f (Z) in separate picture box when click command button. Design form window and select all the control objects are used.

$$X = \sqrt{Y + 5}$$

$$F(Z) = \begin{cases} \dfrac{\sqrt{Z^3 + 5\,Ln(Z)}}{Log(Z) + 1} & Z > X^2 + 1 \\ \dfrac{Z^2 + 4}{2e^Z + 1} & Z < X^2 + 1 \end{cases}$$