

ESPINOSA, DERICK JAMES M.

BSIT-T-S-T-1A

Computer Programming 2 – Machine Problem 7

Source CODE

MachineProblem1.vb (1st form)

```
Public Class MachineProblem1

    Private Sub btnTriangle_Click(sender As Object, e As EventArgs) Handles
btnTriangle.Click
        triangleArea(txtHeight, txtBase, areaOfTriangle)
    End Sub
    Private Sub btnARectangle_Click(sender As Object, e As EventArgs) Handles
btnARectangle.Click
        rectangleArea(txtWidth, txtRecHeight, areaOfRectangle)
    End Sub

    Private Sub btnACircle_Click_1(sender As Object, e As EventArgs) Handles
btnACircle.Click
        circleArea(circRad, circArea)
    End Sub

    Private Sub btnVCylinder_Click(sender As Object, e As EventArgs) Handles
btnVCylinder.Click
        cylinderVolume(cylRad, cylHeight, cylVol)
    End Sub

    Private Sub btnVCone_Click(sender As Object, e As EventArgs) Handles
btnVCone.Click
        coneVolume(coneRad, coneHeight, coneVol)
    End Sub

    Private Sub btnConvertA_Click(sender As Object, e As EventArgs) Handles
btnConvertA.Click
        poundKiloConversion(poundVal, toKilo, kiloVal, toPound)
    End Sub

    Private Sub btnConverB_Click(sender As Object, e As EventArgs) Handles
btnConverB.Click
        temperatureConversion(farenVal, celsiusVal)
    End Sub

    Private Sub btnNext_Click(sender As Object, e As EventArgs) Handles
btnNext.Click
        Me.Hide()
        MachineProblem2.Show()
    End Sub

    Private Sub btnExit_Click(sender As Object, e As EventArgs) Handles
btnExit.Click
        Me.Close()
        MachineProblem2.Close()
    End Sub
End Class
```

MachineProblem2.vb (2nd form)

```
Public Class MachineProblem2
    Private Sub Button2_Click(sender As Object, e As EventArgs) Handles
Button2.Click
        Me.Hide()
        MachineProblem1.Show()
    End Sub

    Private Sub MachineProblem2_Load(sender As Object, e As EventArgs) Handles
MyBase.Load
        'Box 1
        txtRes1.Enabled = False
        ' Box 2
        txtCost2.Enabled = False
        txtTax2.Enabled = False
        txtTotal2.Enabled = False
        ' Box 3
        txtDiscAmt3.Enabled = False
        txtAmt3.Enabled = False

    End Sub

    Private Sub btnComp1_Click(sender As Object, e As EventArgs) Handles
btnComp1.Click
        inventoryValue(txtCost1, txtQuant1, txtDesc1, txtRes1)
    End Sub

    Private Sub btnComp2_Click(sender As Object, e As EventArgs) Handles
btnComp2.Click
        salesTaxValue(txtPrice2, txtQuant2, txtCost2, txtTax2, txtTotal2)
    End Sub

    Private Sub btnComp3_Click(sender As Object, e As EventArgs) Handles
btnComp3.Click
        discountValue(txtPrice3, txtDesc3, txtDiscAmt3, txtAmt3)
    End Sub

    Private Sub btnClear3_Click(sender As Object, e As EventArgs) Handles
btnClear3.Click, btnClear1.Click, btnClear2.Click
        Dim btn As Button = CType(sender, Button)

        Select Case btn.Name
            Case "btnClear1"
                clearAll({txtCost1, txtQuant1, txtDesc1, txtRes1})
            Case "btnClear2"
                clearAll({txtPrice2, txtQuant2, txtCost2, txtTax2, txtTotal2})
            Case "btnClear3"
                clearAll({txtPrice3, txtDesc3, txtDiscAmt3, txtAmt3})
        End Select

    End Sub
End Class
```

ComputationalModule.vb (Module File)

```
Module ComputationalModule
    Const PI As Decimal = 3.14159
    Public Sub triangleArea(ByRef txtHeight As TextBox, ByRef txtBase As
        TextBox, ByRef areaOfTriangle As TextBox)
        ' For triangle
        Dim iHeight, iBase As Integer
        If Not IsNumeric(txtHeight.Text) OrElse Not IsNumeric(txtBase.Text)
        Then
            MsgBox("Please enter a valid integer", MessageBoxIcon.Error,
                "Invalid Number")
            Return
        End If
        iHeight = txtHeight.Text
        iBase = txtBase.Text
        areaOfTriangle.Text = (1 / 2) * iBase * iHeight
    End Sub
    Public Sub rectangleArea(ByRef txtWidth As TextBox, ByRef txtRecHeight As
        TextBox, ByRef areaOfRectangle As TextBox)
        ' For rectangle
        Dim iHeight, iWidth As Integer
        If Not IsNumeric(txtWidth.Text) OrElse Not IsNumeric(txtRecHeight.Text)
        Then
            MsgBox("Please enter a valid integer", MessageBoxIcon.Error,
                "Invalid Number")
            Return
        End If
        iHeight = txtRecHeight.Text
        iWidth = txtWidth.Text
        areaOfRectangle.Text = iHeight * iWidth
    End Sub
    Public Sub circleArea(ByRef circRad As TextBox, ByRef circArea As TextBox)
        ' For circle
        Dim iRad As Integer
        If Not IsNumeric(circRad.Text) Then
            MsgBox("Please enter a valid integer", MessageBoxIcon.Error,
                "Invalid Number")
            Return
        End If
        iRad = circRad.Text
        circArea.Text = PI * iRad * iRad
    End Sub
    Public Sub cylinderVolume(ByRef cylRad As TextBox, ByRef cylHeight As
        TextBox, ByRef cylVol As TextBox)
        ' For cylinder
        Dim iRad, iHeight As Integer
        If Not IsNumeric(cylRad.Text) OrElse Not IsNumeric(cylHeight.Text) Then
            MsgBox("Please enter a valid integer", MessageBoxIcon.Error,
                "Invalid Number")
            Return
        End If
        iRad = cylRad.Text
        iHeight = cylHeight.Text
        cylVol.Text = PI * iRad * iRad * iHeight
    End Sub
    Public Sub coneVolume(ByRef coneRad As TextBox, ByRef coneHeight As
        TextBox, ByRef coneVol As TextBox)
        ' For cone
        Dim iRad, iHeight As Integer
```

```

        If Not IsNumeric(coneRad.Text) OrElse Not IsNumeric(coneHeight.Text)
Then
    MsgBox("Please enter a valid integer", MessageBoxIcon.Error,
"Invalid Number")
    Return
End If
iRad = coneRad.Text
iHeight = coneHeight.Text
coneVol.Text = PI * iRad * iRad * (iHeight / 3)
End Sub

Public Sub poundKiloConversion(ByRef poundVal As TextBox, ByRef toKilo As
TextBox, ByRef kiloVal As TextBox, ByRef toPound As TextBox)
' For Pound to Kilo
Dim iPound, iKilo As Integer
If Not IsNumeric(poundVal.Text) Then
    MsgBox("Please enter a valid integer for Pound",
MessageBoxIcon.Error, "Invalid Number")
Else
    iPound = poundVal.Text
    toKilo.Text = Convert.ToDouble(iPound / 2.205)
End If

    If Not IsNumeric(kiloVal.Text) Then
        MsgBox("Please enter a valid integer for Kilo",
MessageBoxIcon.Error, "Invalid Number")
    Else
        iKilo = kiloVal.Text
        toPound.Text = Convert.ToDouble(iKilo * 2.205)
    End If
End Sub

Public Sub temperatureConversion(ByRef farenVal As TextBox, ByRef
celsiusVal As TextBox)
' For Temperature conversion
Dim iFaren As Double
If Not IsNumeric(farenVal.Text) Then
    MsgBox("Please enter a valid integer for Pound",
MessageBoxIcon.Error, "Invalid Number")
    Return
End If
iFaren = farenVal.Text
celsiusVal.Text = (iFaren - 32) / 1.8
End Sub

' Machine Problem 2 Computations
Public Sub inventoryValue(ByRef txtCost1 As TextBox, ByRef txtQuant1 As
TextBox, ByRef txtDesc1 As TextBox, ByRef txtRes1 As TextBox)

    Dim iQuant As Integer
    Dim fCost, fTotal As Double
    Dim strDesc As String
    If (Not IsNumeric(txtCost1.Text)) OrElse (Not
IsNumeric(txtQuant1.Text)) Then
        MsgBox("Please enter a valid amount!", MessageBoxIcon.Warning,
"Invalid Input!")
        Return
    End If

    strDesc = txtDesc1.Text
    fCost = Convert.ToDouble(txtCost1.Text)
    iQuant = Convert.ToInt64(txtQuant1.Text)
    fTotal = Convert.ToDouble(fCost * iQuant)
    fTotal = (Double).Parse(fTotal, Globalization.NumberStyles.Currency)

```

```

        txtRes1.Text = strDesc & vbCrLf & "Total Value: " &
fTotal.ToString("C2")
    End Sub
    Public Sub salesTaxValue(ByRef txtPrice2 As TextBox, ByRef txtQuant2 As
TextBox, ByRef txtCost2 As TextBox, ByRef txtTax2 As TextBox, ByRef txtTotal2
As TextBox)

        Const TAX_RATE As Double = 0.05
        Dim iCost, iTaxDue, iTotal, iPrice As Double
        Dim iQuant As Integer

        If (Not IsNumeric(txtPrice2.Text)) OrElse (Not
IsNumeric(txtQuant2.Text)) Then
            MsgBox("Please enter a valid amount!", MessageBoxIcon.Warning,
"Invalid Input!")
            Return
        End If

        iQuant = Convert.ToInt64(txtQuant2.Text)
        iPrice = Convert.ToDouble(txtPrice2.Text)

        iCost = iPrice * iQuant
        iTaxDue = iCost * TAX_RATE
        iTotal = iCost + iTaxDue

        txtCost2.Text = iCost.ToString("C2")
        txtTax2.Text = iTaxDue.ToString("C2")
        txtTotal2.Text = iTotal.ToString("C2")
    End Sub
    Public Sub discountValue(ByRef txtPrice3 As TextBox, ByRef txtDesc3 As
TextBox, ByRef txtDiscAmt3 As TextBox, ByRef txtAmt3 As TextBox)

        Const DISCOUNT As Double = 0.2
        Dim iPrice, iAmt, iDiscAmt As Decimal
        Dim strDesc As String

        If (Not IsNumeric(txtPrice3.Text)) Then
            MsgBox("Please enter a valid amount!", MessageBoxIcon.Warning,
"Invalid Input!")
            Return
        End If

        strDesc = txtDesc3.Text
        iPrice = Convert.ToDouble(txtPrice3.Text)
        iDiscAmt = iPrice * DISCOUNT
        iAmt = iPrice - iDiscAmt

        txtDiscAmt3.Text = iDiscAmt.ToString("C2")
        txtAmt3.Text = iAmt.ToString("C2")
    End Sub

    Public Sub clearAll(ts As TextBox())
        For Each t In ts
            t.Clear()
        Next
    End Sub
End Module

```

Screenshots

The screenshots display the following forms and their contents:

- Form 1: Area Of Triangle**
 - Buttons: Next Form, Exit
 - Tab: 1
 - Section: **Area Of Triangle**
 - Fields: Height, Base, Get Area, Area
- Form 2: Inventory Value**
 - Button: Back
 - Tab: 1
 - Section: **Inventory Value**
 - Section: Product Inventory
 - Fields: Description, Quantity, Cost, Total Value (???)
 - Buttons: Compute, Clear
- Form 3: Inventory Value**
 - Button: Back
 - Tab: 1
 - Section: **Inventory Value**
 - Section: Product Inventory
 - Fields: Description (banana), Quantity (13), Cost (3), Total Value (banana, Total Value: ₱39.00)
 - Buttons: Compute, Clear
- Form 4: Sales Tax**
 - Button: Back
 - Tab: 1
 - Section: **Sales Tax**
 - Section: Sales Tax
 - Fields: Price (133), Quantity (3), Compute, Clear
 - Section: Results
 - Fields: Total Cost (₱399.00), Tax Due (₱19.95), Amount (₱418.95)
- Form 5: Discount**
 - Button: Back
 - Tab: 1
 - Section: **Discount**
 - Section: Discount Calculator
 - Fields: Description (banana), Price (133), Compute, Clear
 - Text: Discounted - 20%
 - Fields: Discount Amount (₱26.60), Price (₱106.40)
- Form 6: Code Editor**
 - Code:

```
Sub Main()  
    Public Sub clearAll(ts As TextBox())  
        For Each t In ts  
            t.Clear()  
        Next  
    End Sub  
End Module
```