Program Cover Sheet

|  |
| --- |
| Name: Austin Rippee |
| Assignment: Assignment 6 |
| List any parts of the assignment that do not work/were not completed:  When attempting to use the “Not Value 1” button, I get an error with my binary result. My idea is to convert everything to a decimal first then convert to hex or binary from there (so I set up the functions that way so they can just be called). So, this way, all I had to do was do like every other conversion, call the function, place the integer value in and pops out a string value and for some reason I get an overflow message. I am theorizing since it is a negative decimal value that that is why I am not able to get a proper binary value out.  The other thing was with the form closing, I had many comments (page 3 and 4 of this document) showing different ways of checking if forms have been unchanged or if they were dirty but was not able to find a way to do so or at least find the way to implement that into the program. However, my application still pulls up a messagebox displaying if I want to exit the dirty child or not if it was changed. If it wasn’t, then the child form will automatically close. |

|  |
| --- |
| Instructor’s Comments: |
| Grade: |

Program Submission Requirements: (1) all files, zipped and uploaded to Canvas and (2) a completed cover sheet, program execution screenshots and source code printed, **stapled** and turned in during class. Failure to follow the submission requirements will result in points lost on that particular assignment.

'------------------------------------------------------------

'- File Name : frmMDIParent.frm -

'- Part of Project: Parent Form -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- File Purpose: -

'- This file contains the main form of the application -

'------------------------------------------------------------

'- Program Purpose: -

'- -

'- This program creates a parent form in which the user may create

'- multiple child forms

'------------------------------------------------------------

'- Global Variable Dictionary (alphabetically): -

'- intChildCount - Keeps track of how many child forms have been created

'------------------------------------------------------------

Public Class frmMDIParent

Dim intChildCount As Integer = 0 'Keeps track of how many child forms have been created

'------------------------------------------------------------

'- Subprogram Name: mnuNew\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- menu new button. –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- aNewChildForm - An instance of the frmChild() -

'------------------------------------------------------------

Private Sub mnuNew\_Click(sender As Object, e As EventArgs) Handles mnuNew.Click

'Creates a new instance of frmChild

Dim aNewChildForm As frmChild = New frmChild()

aNewChildForm.MdiParent = Me

'Increments the child counter

intChildCount += 1

'Changes the titles and shows that one

aNewChildForm.Text = "Calc " & intChildCount

aNewChildForm.Show()

End Sub

'------------------------------------------------------------

'- Subprogram Name: mnuFileExit\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- menu exit button. –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub mnuFileExit\_Click(sender As Object, e As EventArgs) Handles mnuExit.Click

'Closes the current form

Me.Close()

End Sub

'------------------------------------------------------------

'- Subprogram Name: frmMDIParent\_FormClosing -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user exits the

'– program

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the FormClosingEventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub frmMDIParent\_FormClosing(sender As Object, e As FormClosingEventArgs) Handles Me.FormClosing

'========================================================

'

' I attempted many different ways to create a proper way

' of closing but wasn't able to

'

'========================================================

'If frmChild.txtVal1Binary.Text = "0" And frmChild.txtVal1Decimal.Text = "0" And frmChild.txtVal1Hex.Text = "0" And frmChild.txtVal2Binary.Text = "0" And frmChild.txtVal2Decimal.Text = "0" And frmChild.txtVal2Hex.Text = "0" And frmChild.txtResultBinary.Text = "0" And frmChild.txtResultDecimal.Text = "0" And frmChild.txtResultHex.Text = "0" Then

' frmChanged = False

'Else

' frmChanged = True

'End If

'For Each child As Form In Me.MdiParent.MdiChildren

' If frmChanged = True Then

' e.Cancel = True

' MsgBox("Cancel = TRUE")

' Else

' 'child.Close()

' e.Cancel = True

' MsgBox("Cancel = FALSE")

' End If

'Next

'If frmChild.txtVal1Binary.Text = "0" And frmChild.txtVal1Decimal.Text = "0" And frmChild.txtVal1Hex.Text = "0" And frmChild.txtVal2Binary.Text = "0" And frmChild.txtVal2Decimal.Text = "0" And frmChild.txtVal2Hex.Text = "0" And frmChild.txtResultBinary.Text = "0" And frmChild.txtResultDecimal.Text = "0" And frmChild.txtResultHex.Text = "0" Then

' ActiveMdiChild.Close()

'End If

'If Application.OpenForms().OfType(Of frmChild).Any Then

' If frmChild.txtVal1Binary.Text = "0" And frmChild.txtVal1Decimal.Text = "0" And frmChild.txtVal1Hex.Text = "0" And frmChild.txtVal2Binary.Text = "0" And frmChild.txtVal2Decimal.Text = "0" And frmChild.txtVal2Hex.Text = "0" And frmChild.txtResultBinary.Text = "0" And frmChild.txtResultDecimal.Text = "0" And frmChild.txtResultHex.Text = "0" Then

' frmChild.Close()

' Else

' MsgBox("Error")

' 'If MessageBox.Show("Are you sure you want to quit?", "Calculator", MessageBoxButtons.YesNo) = DialogResult.Yes Then

' ' e.Cancel = False

' 'Else

' ' e.Cancel = True

' End If

'End If

'Else

'If MessageBox.Show("Are you sure you want to quit?", "Calculator", MessageBoxButtons.YesNo) = DialogResult.Yes Then

'e.Cancel = False

'Else

' e.Cancel = True

'End If

'End If

End Sub

'------------------------------------------------------------

'- Subprogram Name: mnuAbout\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- menu about button. –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub mnuAbout\_Click(sender As Object, e As EventArgs) Handles mnuAbout.Click

'Shows the abount form

frmAbout.ShowDialog()

End Sub

'------------------------------------------------------------

'- Subprogram Name: mnuCascade\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- menu cascade button. –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub mnuCascade\_Click(sender As Object, e As EventArgs) Handles mnuCascade.Click

'Changes to a cascade layout

Me.LayoutMdi(MdiLayout.Cascade)

End Sub

'------------------------------------------------------------

'- Subprogram Name: mnuTileHorizontal\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- menu tile horizontal button. –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub mnuTileHorizontal\_Click(sender As Object, e As EventArgs) Handles mnuTileHorizontal.Click

'Changes to a horizontal tile layout

Me.LayoutMdi(MdiLayout.TileHorizontal)

End Sub

'------------------------------------------------------------

'- Subprogram Name: mnuTileVertical\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- menu tile vertical button. –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub mnuTileVertical\_Click(sender As Object, e As EventArgs) Handles mnuTileVertical.Click

'Changes to a vertical tile layout

Me.LayoutMdi(MdiLayout.TileVertical)

End Sub

End Class

Imports System.Text

'------------------------------------------------------------

'- File Name : frmChild.frm -

'- Part of Project: AssignX -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- File Purpose: -

'- The purpose of this file is to include a child of the

'- the parent function.

'------------------------------------------------------------

'- Program Purpose: -

'- -

'- This program allows for a user to input a decimal/hex/binary

'- value and will convert and use math logic gates to compare

'- multiple values

'------------------------------------------------------------

'- Global Variable Dictionary (alphabetically): -

'- blnIsTextBinaryVal1Active - Boolean to check if BinaryVal1 is active

'- blnIsTextBinaryVal2Active - Boolean to check if BinaryVal2 is active

'- blnIsTextDecimalVal1Active - Boolean to check if DecimalVal1 is active

'- blnIsTextDecimalVal2Active - Boolean to check if DecimalVal2 is active

'- blnIsTextHexVal1Active - Boolean to check if HexVal1 is active

'- blnIsTextHexVal2Active - Boolean to check if HexVal2 is active

'- blnIsValue1BinaryActive - Boolean to check if Value1Binary is active

'- blnIsValue1DecimalActive - Boolean to check if Value1Decimal is active

'- blnIsValue1HexActive - Boolean to check if Value1Hex is active

'- blnIsValue2BinaryActive - Boolean to check if Value2Binary is active

'- blnIsValue2DecimalActive - Boolean to check if Value2Decimal is active

'- blnIsValue2HexActive - Boolean to check if Value2Hex is active

'------------------------------------------------------------

Public Class frmChild

'Creates global boolean values to check if the corresponding textbox is active for each button

Public Shared blnIsTextBinaryVal1Active As Boolean = True

Public Shared blnIsTextBinaryVal2Active As Boolean = True

Public Shared blnIsTextDecimalVal1Active As Boolean = True

Public Shared blnIsTextDecimalVal2Active As Boolean = True

Public Shared blnIsTextHexVal1Active As Boolean = True

Public Shared blnIsTextHexVal2Active As Boolean = True

'Creates global boolean values to check if the corresponding textbox is active for each conversion

Public Shared blnIsValue1BinaryActive As Boolean = True

Public Shared blnIsValue1DecimalActive As Boolean = True

Public Shared blnIsValue1HexActive As Boolean = True

Public Shared blnIsValue2BinaryActive As Boolean = True

Public Shared blnIsValue2DecimalActive As Boolean = True

Public Shared blnIsValue2HexActive As Boolean = True

'------------------------------------------------------------

'- Subprogram Name: frmChild\_Load -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user loads the form –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub frmChild\_Load(sender As Object, e As EventArgs) Handles MyBase.Load

'Sets all textboxes to have 0 as the value

txtVal1Binary.Text = "0"

txtVal1Decimal.Text = "0"

txtVal1Hex.Text = "0"

txtVal2Binary.Text = "0"

txtVal2Decimal.Text = "0"

txtVal2Hex.Text = "0"

txtResultBinary.Text = "0"

txtResultDecimal.Text = "0"

txtResultHex.Text = "0"

End Sub

'------------------------------------------------------------

'- Subprogram Name: frmChild\_FormClosing -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user closes the form. –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the FormClosingEventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub frmChild\_FormClosing(sender As Object, e As FormClosingEventArgs) Handles Me.FormClosing

'On a closing form, checks to see if the textboxes contain 0

If txtVal1Binary.Text = "0" And txtVal1Decimal.Text = "0" And txtVal1Hex.Text = "0" And txtVal2Binary.Text = "0" And txtVal2Decimal.Text = "0" And txtVal2Hex.Text = "0" And txtResultBinary.Text = "0" And txtResultDecimal.Text = "0" And txtResultHex.Text = "0" Then

'Closes out the program

e.Cancel = False

Else

'If not, displays a messagebox that asks if the users wants to close out the child

If MessageBox.Show("Close Dirty Child?", "Close Form", System.Windows.Forms.MessageBoxButtons.YesNo) = DialogResult.No Then

'If no is pressed, the event is cancelled

e.Cancel = True

End If

End If

End Sub

'------------------------------------------------------------

'- Subprogram Name: btnClearVal1\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- clear value 1 button –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub btnClearVal1\_Click(sender As Object, e As EventArgs) Handles btnClearVal1.Click

'Sets value 1 textboxes to 0

txtVal1Binary.Text = "0"

txtVal1Decimal.Text = "0"

txtVal1Hex.Text = "0"

End Sub

'------------------------------------------------------------

'- Subprogram Name: btnClearVal2\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- clear value 2 button –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub btnClearVal2\_Click(sender As Object, e As EventArgs) Handles btnClearVal2.Click

'Sets value 2 textboxes to 0

txtVal2Binary.Text = "0"

txtVal2Decimal.Text = "0"

txtVal2Hex.Text = "0"

End Sub

'------------------------------------------------------------

'- Subprogram Name: btnClearResult\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- clear value 3 button –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub btnClearResult\_Click(sender As Object, e As EventArgs) Handles btnClearResult.Click

'Sets result textboxes to 0

txtResultBinary.Text = "0"

txtResultDecimal.Text = "0"

txtResultHex.Text = "0"

End Sub

'------------------------------------------------------------

'- Subprogram Name: txtVal1Binary\_Focused -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user focuses

'– on the txtVal1Binary textbox

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub txtVal1Binary\_Focused(sender As Object, e As EventArgs) Handles txtVal1Binary.GotFocus

'Enables/disables corresponding buttons to a binary textbox

btnA.Enabled = False

btnB.Enabled = False

btnC.Enabled = False

btnD.Enabled = False

btnE.Enabled = False

btnF.Enabled = False

btn9.Enabled = False

btn8.Enabled = False

btn7.Enabled = False

btn6.Enabled = False

btn5.Enabled = False

btn4.Enabled = False

btn3.Enabled = False

btn2.Enabled = False

End Sub

'------------------------------------------------------------

'- Subprogram Name: txtVal2Binary\_Focused -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user focuses

'– on the txtVal2Binary textbox –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub txtVal2Binary\_Focused(sender As Object, e As EventArgs) Handles txtVal2Binary.GotFocus

'Enables/disables corresponding buttons to a binary textbox

btnA.Enabled = False

btnB.Enabled = False

btnC.Enabled = False

btnD.Enabled = False

btnE.Enabled = False

btnF.Enabled = False

btn9.Enabled = False

btn8.Enabled = False

btn7.Enabled = False

btn6.Enabled = False

btn5.Enabled = False

btn4.Enabled = False

btn3.Enabled = False

btn2.Enabled = False

End Sub

'------------------------------------------------------------

'- Subprogram Name: txtVal1Decimal\_Focused -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user focuses

'– on the txtVal1Decimal textbox –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub txtVal1Decimal\_Focused(sender As Object, e As EventArgs) Handles txtVal1Decimal.GotFocus

'Enables/disables corresponding buttons to a decimal textbox

btnA.Enabled = False

btnB.Enabled = False

btnC.Enabled = False

btnD.Enabled = False

btnE.Enabled = False

btnF.Enabled = False

btn9.Enabled = True

btn8.Enabled = True

btn7.Enabled = True

btn6.Enabled = True

btn5.Enabled = True

btn4.Enabled = True

btn3.Enabled = True

btn2.Enabled = True

End Sub

'------------------------------------------------------------

'- Subprogram Name: txtVal2Decimal\_Focused -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user focuses

'– on the txtVal2Decimal textbox –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub txtVal2Decimal\_Focused(sender As Object, e As EventArgs) Handles txtVal2Decimal.GotFocus

'Enables/disables corresponding buttons to a decimal textbox

btnA.Enabled = False

btnB.Enabled = False

btnC.Enabled = False

btnD.Enabled = False

btnE.Enabled = False

btnF.Enabled = False

btn9.Enabled = True

btn8.Enabled = True

btn7.Enabled = True

btn6.Enabled = True

btn5.Enabled = True

btn4.Enabled = True

btn3.Enabled = True

btn2.Enabled = True

End Sub

'------------------------------------------------------------

'- Subprogram Name: txtVal1Hex\_Focused -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user focuses

'– on the txtVal1Hex textbox –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub txtVal1Hex\_Focused(sender As Object, e As EventArgs) Handles txtVal1Hex.GotFocus

'Enables/disables corresponding buttons to a hex textbox

btnA.Enabled = True

btnB.Enabled = True

btnC.Enabled = True

btnD.Enabled = True

btnE.Enabled = True

btnF.Enabled = True

btn9.Enabled = True

btn8.Enabled = True

btn7.Enabled = True

btn6.Enabled = True

btn5.Enabled = True

btn4.Enabled = True

btn3.Enabled = True

btn2.Enabled = True

End Sub

'------------------------------------------------------------

'- Subprogram Name: txtVal2Hex\_Focused -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user focuses

'– on the txtVal2Hex textbox –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub txtVal2Hex\_Focused(sender As Object, e As EventArgs) Handles txtVal2Hex.GotFocus

'Enables/disables corresponding buttons to a hex textbox

btnA.Enabled = True

btnB.Enabled = True

btnC.Enabled = True

btnD.Enabled = True

btnE.Enabled = True

btnF.Enabled = True

btn9.Enabled = True

btn8.Enabled = True

btn7.Enabled = True

btn6.Enabled = True

btn5.Enabled = True

btn4.Enabled = True

btn3.Enabled = True

btn2.Enabled = True

End Sub

'------------------------------------------------------------

'- Subprogram Name: btnConvert\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- convert button. –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- intBinaryValue - Stores the textbox value of a binary number

'- intDecimalValue - Stores the textbox value of a decimal number

'- intHexValue - Stores the textbox value of a hex number

'- intVal1Decimal - Stores conversion from binary to decimal

'- intVal2Decimal - Stores conversion from binary to decimal

'- intVal1Hex - Stores conversion from binary to hex

'- intVal2Hex - Stores conversion from binary to hex

'------------------------------------------------------------

Private Sub btnConvert\_Click(sender As Object, e As EventArgs) Handles btnConvert.Click

If blnIsValue1BinaryActive Then 'Checks if isValue1BinaryActive is true

'Sets the textbox value to intBinaryValue

Dim intBinaryValue As Integer = txtVal1Binary.Text

'Converts the Binary value to a Decimal value and sets it to a variable

Dim intVal1Decimal As Integer = ConvertBinaryToDecimal(intBinaryValue)

'Sets the value to the textbox

txtVal1Decimal.Text = intVal1Decimal

'Converts the value from binary to hex

Dim intVal1Hex As String = ConvertBinaryToHex(intBinaryValue)

'Sets the value to the textbox

txtVal1Hex.Text = intVal1Hex

ElseIf blnIsValue1DecimalActive Then

'Sets the textbox value to intDecimalValue

Dim intDecimalValue As Integer = txtVal1Decimal.Text

'Converts the decimal value to binary

txtVal1Binary.Text = ConvertDecimalToBinary(intDecimalValue)

'Converts the decimal value to hex

txtVal1Hex.Text = ConvertDecimalToHex(intDecimalValue)

ElseIf blnIsValue1HexActive Then

'Sets the textbox value to intHexValue

Dim intHexValue As String = txtVal1Hex.Text

'Converts the hex value to decimal

txtVal1Decimal.Text = ConvertHexToDecimal(intHexValue)

'Converts the hex value to binary

txtVal1Binary.Text = ConvertHexToBinary(intHexValue)

ElseIf blnIsValue2BinaryActive Then

'Sets the textbox value to intVal2Binary

Dim intBinaryValue As Integer = txtVal2Binary.Text

'Converts the binary value to decimal

Dim intVal2Decimal As Integer = ConvertBinaryToDecimal(intBinaryValue)

'sets it to the textbox

txtVal2Decimal.Text = intVal2Decimal

'Converts the binary value to hex

Dim intVal2Hex As String = ConvertBinaryToHex(intBinaryValue)

'Sets the value to the textbox

txtVal2Hex.Text = intVal2Hex

ElseIf blnIsValue2DecimalActive Then

'Sets the textbox value to intDecimalValue

Dim intDecimalValue As Integer = txtVal2Decimal.Text

'Converts the decimal value to binary

txtVal2Binary.Text = ConvertDecimalToBinary(intDecimalValue)

'Converts the decimal value to hex

txtVal2Hex.Text = ConvertDecimalToHex(intDecimalValue)

ElseIf blnIsTextHexVal2Active Then

'Sets the textbox value to intHexValue

Dim intHexValue As String = txtVal2Hex.Text

'Converts the hex value to decimal

txtVal2Decimal.Text = ConvertHexToDecimal(intHexValue)

'Converts the hex value to binary

txtVal2Binary.Text = ConvertHexToBinary(intHexValue)

End If

End Sub

'------------------------------------------------------------

'- Subprogram Name: txtBox\_LostFocus -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user loses focus

'– from a textbox.

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub txtBox\_LostFocus(ByVal sender As Object, ByVal e As EventArgs) Handles txtVal1Binary.LostFocus, txtVal2Binary.LostFocus, txtVal1Decimal.LostFocus, txtVal2Decimal.LostFocus, txtVal1Hex.LostFocus, txtVal2Hex.LostFocus

If (TryCast(sender, TextBox)).Name = "txtVal1Binary" Then 'Checks what the last focused textbox was and then sets the corresponding boolean to true

blnIsValue1BinaryActive = True

blnIsValue1DecimalActive = False

blnIsValue1HexActive = False

blnIsValue2BinaryActive = False

blnIsValue2DecimalActive = False

blnIsTextHexVal2Active = False

ElseIf (TryCast(sender, TextBox)).Name = "txtVal1Decimal" Then 'Checks what the last focused textbox was and then sets the corresponding boolean to true

blnIsValue1BinaryActive = False

blnIsValue1DecimalActive = True

blnIsValue1HexActive = False

blnIsValue2BinaryActive = False

blnIsValue2DecimalActive = False

blnIsTextHexVal2Active = False

ElseIf (TryCast(sender, TextBox)).Name = "txtVal1Hex" Then 'Checks what the last focused textbox was and then sets the corresponding boolean to true

blnIsValue1BinaryActive = False

blnIsValue1DecimalActive = False

blnIsValue1HexActive = True

blnIsValue2BinaryActive = False

blnIsValue2DecimalActive = False

blnIsTextHexVal2Active = False

ElseIf (TryCast(sender, TextBox)).Name = "txtVal2Binary" Then 'Checks what the last focused textbox was and then sets the corresponding boolean to true

blnIsValue1BinaryActive = False

blnIsValue1DecimalActive = False

blnIsValue1HexActive = False

blnIsValue2BinaryActive = True

blnIsValue2DecimalActive = False

blnIsTextHexVal2Active = False

ElseIf (TryCast(sender, TextBox)).Name = "txtVal2Decimal" Then 'Checks what the last focused textbox was and then sets the corresponding boolean to true

blnIsValue1BinaryActive = False

blnIsValue1DecimalActive = False

blnIsValue1HexActive = False

blnIsValue2BinaryActive = False

blnIsValue2DecimalActive = True

blnIsTextHexVal2Active = False

ElseIf (TryCast(sender, TextBox)).Name = "txtVal2Hex" Then 'Checks what the last focused textbox was and then sets the corresponding boolean to true

blnIsValue1BinaryActive = False

blnIsValue1DecimalActive = False

blnIsValue1HexActive = False

blnIsValue2BinaryActive = False

blnIsValue2DecimalActive = False

blnIsTextHexVal2Active = True

Else

End If

End Sub

'------------------------------------------------------------

'- Subprogram Name: btnClick -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks one

'– of the buttons on the calculator and adds that value on

'- the button to whatever textbox was last focused on

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- strTextValue - String to hold the literal value of the text of the button -

'------------------------------------------------------------

Private Sub btnClick(ByVal sender As Object, ByVal e As EventArgs) Handles btn0.Click, btn1.Click, btn2.Click, btn3.Click, btn4.Click, btn5.Click, btn6.Click, btn7.Click, btn8.Click, btn9.Click, btnA.Click, btnB.Click, btnC.Click, btnD.Click, btnE.Click, btnF.Click

Dim strTextValue As String = (TryCast(sender, Button)).Text

If blnIsTextBinaryVal1Active Then 'Checks if isTextBinaryVal1Active is active and adds the value on the button to the textbox

txtVal1Binary.Text += strTextValue

ElseIf blnIsTextBinaryVal2Active Then 'Checks if isTextBinaryVal2Active is active and adds the value on the button to the textbox

txtVal2Binary.Text += strTextValue

ElseIf blnIsTextDecimalVal1Active Then 'Checks if isTextDecimalVal1Active is active and adds the value on the button to the textbox

txtVal1Decimal.Text += strTextValue

ElseIf blnIsTextDecimalVal2Active Then 'Checks if isTextDecimalVal2Active is active and adds the value on the button to the textbox

txtVal2Decimal.Text += strTextValue

ElseIf blnIsTextHexVal1Active Then 'Checks if isTextHexVal1Active is active and adds the value on the button to the textbox

txtVal1Hex.Text += strTextValue

ElseIf blnIsTextHexVal2Active Then 'Checks if isTextHexVal2Active is active and adds the value on the button to the textbox

txtVal2Hex.Text += strTextValue

End If

End Sub

'------------------------------------------------------------

'- Subprogram Name: TextBox\_LostFocus -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user loses focus

'– of a textbox and sets the boolean to true or false depending

'- on if it was focused in on or not.

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Private Sub TextBox\_LostFocus(ByVal sender As Object, ByVal e As EventArgs) Handles txtVal1Binary.LostFocus, txtVal2Binary.LostFocus, txtVal1Decimal.LostFocus, txtVal2Decimal.LostFocus, txtVal1Hex.LostFocus, txtVal2Hex.LostFocus

If (TryCast(sender, TextBox)).Name = "txtVal1Binary" Then 'Checks if the last focused textbox was txtVal1Binary

blnIsTextBinaryVal1Active = True

blnIsTextBinaryVal2Active = False

blnIsTextDecimalVal1Active = False

blnIsTextDecimalVal2Active = False

blnIsTextHexVal1Active = False

blnIsTextHexVal2Active = False

ElseIf (TryCast(sender, TextBox)).Name = "txtVal2Binary" Then 'Checks if the last focused textbox was txtVal2Binary

blnIsTextBinaryVal1Active = False

blnIsTextBinaryVal2Active = True

blnIsTextDecimalVal1Active = False

blnIsTextDecimalVal2Active = False

blnIsTextHexVal1Active = False

blnIsTextHexVal2Active = False

ElseIf (TryCast(sender, TextBox)).Name = "txtVal1Decimal" Then 'Checks if the last focused textbox was txtVal1Decimal

blnIsTextBinaryVal1Active = False

blnIsTextBinaryVal2Active = False

blnIsTextDecimalVal1Active = True

blnIsTextDecimalVal2Active = False

blnIsTextHexVal1Active = False

blnIsTextHexVal2Active = False

ElseIf (TryCast(sender, TextBox)).Name = "txtVal2Decimal" Then 'Checks if the last focused textbox was txtVal2Decimal

blnIsTextBinaryVal1Active = False

blnIsTextBinaryVal2Active = False

blnIsTextDecimalVal1Active = False

blnIsTextDecimalVal2Active = True

blnIsTextHexVal1Active = False

blnIsTextHexVal2Active = False

ElseIf (TryCast(sender, TextBox)).Name = "txtVal1Hex" Then 'Checks if the last focused textbox was txtVal1Hex

blnIsTextBinaryVal1Active = False

blnIsTextBinaryVal2Active = False

blnIsTextDecimalVal1Active = False

blnIsTextDecimalVal2Active = False

blnIsTextHexVal1Active = True

blnIsTextHexVal2Active = False

ElseIf (TryCast(sender, TextBox)).Name = "txtVal2Hex" Then 'Checks if the last focused textbox was txtVal2Hex

blnIsTextBinaryVal1Active = False

blnIsTextBinaryVal2Active = False

blnIsTextDecimalVal1Active = False

blnIsTextDecimalVal2Active = False

blnIsTextHexVal1Active = False

blnIsTextHexVal2Active = True

Else

End If

End Sub

'------------------------------------------------------------

'- Subprogram Name: btnAnd\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- and button. It ands two values together. –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- intResultDecimalAnd - Compares decimal values from the textbox

'- strResultHexAnd - Holds the anded conversion from decimal to hex

'- intResultHexAndConv - Holds the AND of the decimals

'- intVal1Dec - holds conversion from hex to decimal for val1

'- intVal2Dec - holds conversion from hex to decimal for val2

'- strResultBinaryAnd - String that holds the conversion from decimal to binary

'- strVal1Hex - holds textbox value of hex value 1

'- strVal2Hex - holds textbox value of hex value 2

'------------------------------------------------------------

Private Sub btnAnd\_Click(sender As Object, e As EventArgs) Handles btnAnd.Click

'Ands the values of both decimal textboxes and prints it

Dim intResultDecimalAnd As Integer = txtVal1Decimal.Text And txtVal2Decimal.Text

txtResultDecimal.Text = intResultDecimalAnd

'Converts the anded decimal value to binary and prints it

Dim strResultBinaryAnd As String = ConvertDecimalToBinary(intResultDecimalAnd).ToString

txtResultBinary.Text = strResultBinaryAnd

'Sets the textbox values as strings in variables

Dim strVal1Hex As String = txtVal1Hex.Text

Dim strVal2Hex As String = txtVal2Hex.Text

'Converts the textbox values and sets them to integer vartiables

Dim intVal1Dec As Integer = ConvertHexToDecimal(strVal1Hex)

Dim intVal2Dec As Integer = ConvertHexToDecimal(strVal2Hex)

'Ands the results, converts the decimal to hex and prints it

Dim intResultHexAndConv As Integer = strVal1Hex And strVal2Hex

Dim strResultHexAnd As String = ConvertDecimalToHex(intResultHexAndConv)

txtResultHex.Text = strResultHexAnd

End Sub

'------------------------------------------------------------

'- Subprogram Name: btnOr\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- or button. It ors two values together. –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- intResultDecimalOr - Compares decimal values from the textbox

'- strResultHexOr - Holds the or'd conversion from decimal to hex

'- intResultHexOrConv - Holds the OR of the decimals

'- intVal1Dec - holds conversion from hex to decimal for val1

'- intVal2Dec - holds conversion from hex to decimal for val2

'- strResultBinaryAnd - String that holds the conversion from decimal to binary

'- strVal1Hex - holds textbox value of hex value 1

'- strVal2Hex - holds textbox value of hex value 2

'------------------------------------------------------------

Private Sub btnOr\_Click(sender As Object, e As EventArgs) Handles btnOr.Click

'Ors the values of both decimal textboxes and prints it

Dim intResultDecimalOr As Integer

intResultDecimalOr = txtVal1Decimal.Text Or txtVal2Decimal.Text

txtResultDecimal.Text = intResultDecimalOr

'Converts the or'd decimal value to binary and prints it

Dim intResultBinaryOr As String = ConvertDecimalToBinary(intResultDecimalOr).ToString

txtResultBinary.Text = intResultBinaryOr

'Sets the textbox values as strings in variables

Dim strVal1Hex As String = txtVal1Hex.Text

Dim strVal2Hex As String = txtVal2Hex.Text

'Converts the textbox values and sets them to integer vartiables

Dim intVal1Dec As Integer = ConvertHexToDecimal(strVal1Hex)

Dim intVal2Dec As Integer = ConvertHexToDecimal(strVal2Hex)

'Ors the results, converts the decimal to hex and prints it

Dim intResultHexOrConv As Integer = intVal1Dec Or intVal2Dec

Dim strResultHexOr As String = ConvertDecimalToHex(intResultHexOrConv)

txtResultHex.Text = strResultHexOr

End Sub

'------------------------------------------------------------

'- Subprogram Name: btnXor\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- xor button. It ors two values together. –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- Local Variable Dictionary (alphabetically): -

'- intResultDecimalXor - Compares decimal values from the textbox

'- strResultHexXor - Holds the xor'd conversion from decimal to hex

'- intResultHexXorConv - Holds the XOR of the decimals

'- intVal1Dec - holds conversion from hex to decimal for val1

'- intVal2Dec - holds conversion from hex to decimal for val2

'- strResultBinaryXor - String that holds the conversion from decimal to binary

'- strVal1Hex - holds textbox value of hex value 1

'- strVal2Hex - holds textbox value of hex value 2

'------------------------------------------------------------

Private Sub btnXor\_Click(sender As Object, e As EventArgs) Handles btnXor.Click

'Xors the values of both decimal textboxes and prints it

Dim intResultDecimalXor As Integer

intResultDecimalXor = txtVal1Decimal.Text Xor txtVal2Decimal.Text

txtResultDecimal.Text = intResultDecimalXor

'Converts the xor'd decimal value to binary and prints it

Dim strResultBinaryXor As String = ConvertDecimalToBinary(intResultDecimalXor).ToString

txtResultBinary.Text = strResultBinaryXor

'Sets the textbox values as strings in variables

Dim strVal1Hex As String = txtVal1Hex.Text

Dim strVal2Hex As String = txtVal2Hex.Text

'Converts the textbox values and sets them to integer vartiables

Dim intVal1Dec As Integer = ConvertHexToDecimal(strVal1Hex)

Dim intVal2Dec As Integer = ConvertHexToDecimal(strVal2Hex)

'Xors the results, converts the decimal to hex and prints it

Dim intResultHexXorConv As Integer = intVal1Dec Xor intVal2Dec

Dim strResultHexXor As String = ConvertDecimalToHex(intResultHexXorConv)

txtResultHex.Text = strResultHexXor

End Sub

'------------------------------------------------------------

'- Subprogram Name: btnNotVal1\_Click -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This subroutine is called whenever the user clicks the -

'- not value 1 button. It not values the first value. –

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- sender – Identifies which particular control raised the –

'- click event -

'- e – Holds the EventArgs object sent to the routine -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- intResultDecimalNotVal1 - Holds the not value of the textbox

'- strResultHexNotVal1 - Holds the string convserion from decimal to hex

'- intResultHexNotVal1Conv - Holds the value as an integer

'- intVal1Dec - holds not'd conversion from hex to decimal

'- strVal1Hex - holds hex value from textbox

'------------------------------------------------------------

Private Sub btnNotVal1\_Click(sender As Object, e As EventArgs) Handles btnNotVal1.Click

'Not values the 1st value and prints it

Dim intResultDecimalNotVal1 As Integer = Not txtVal1Decimal.Text

txtResultDecimal.Text = intResultDecimalNotVal1

'Takes the hex values, nots the conversion to decimal and converts it back to hex

Dim strVal1Hex As String = txtVal1Hex.Text

Dim intVal1Dec As Integer = Not ConvertHexToDecimal(strVal1Hex)

Dim intResultHexNotVal1Conv As Integer = intVal1Dec

Dim strResultHexNotVal1 As String = ConvertDecimalToHex(intResultHexNotVal1Conv)

txtResultHex.Text = strResultHexNotVal1

'==========================================================================

' The code below confuses me very much. I am attempting to convert the hex

' value into a binary value like I did above in the normal conversion through

' the convert button but it is not liking it no matter what way I do it.

'==========================================================================

'Takes the Hex value, converts it to binary and prints it

'Dim intResultBinaryNotVal1 As Integer = ConvertHexToBinary(strResultHexNotVal1)

'txtResultBinary.Text = intResultBinaryNotVal1

End Sub

'------------------------------------------------------------

'- Function Name: ConvertBinaryToDecimal -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This function when a user attempts to convert a binary

'– to decimal number

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- num - Integer holding binary value

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- intValDecimal - holds decimal value -

'------------------------------------------------------------

'- Returns: -

'- Integer – decimal value -

'------------------------------------------------------------

Function ConvertBinaryToDecimal(ByVal num As Integer) As Integer

Dim intValDecimal As Integer = Convert.ToInt64(num, 2) 'Converts to a base 2 number

Return intValDecimal

End Function

'------------------------------------------------------------

'- Function Name: ConvertBinaryToHex -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This function is called when a user attempts to convert

'– a binary to hex value.

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- num - integer holding binary value

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- intValDecimal - holds converted value (Decimal)

'- strValHex - Holds hex version of string value

'- strValHexTemp - holds string of decimal value

'------------------------------------------------------------

'- Returns: -

'- String – returns hex value -

'------------------------------------------------------------

Function ConvertBinaryToHex(ByVal num As Integer) As String

Dim intValDecimal As Integer = Convert.ToInt64(num, 2) 'Converts to a base 2 number

Dim strValHexTemp As String = intValDecimal.ToString 'Converts to a string

Dim strValHex As String = Hex(strValHexTemp) 'Uses the hex function

Return strValHex

End Function

'------------------------------------------------------------

'- Function Name: ConvertDecimalToBinary -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This function is called whenever a user attempts to convert

'– a decimal value to a binary value.

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- num - integer that holds decimal value

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- arrValue - Holds a char array where each character holds one element of the array

'- intBinaryValue - holds converted decimal value

'- intFinalBinaryValue - Adds both strRestZeroes & intBinaryValue

'- intRestOfString - Finds how many values are missing from a 32 value string

'- strConversionResult - Holds converted result of the string

'- strRestZeroes - Holds literal values of how many zeroes need to be added

'- strReturnValue - Holds the entire string result as it gets built up through the loop

'- strValue - Holds the entire binary string as it gets iterated through

'------------------------------------------------------------

'- Returns: -

'- String – returns binary value

'------------------------------------------------------------

Function ConvertDecimalToBinary(ByVal num As Integer) As String

Dim intBinaryValue As Integer

intBinaryValue = Convert.ToString(num, 2) 'Converts to a base 2 number

'Initlializes variables for the binary conversion

Dim strConversionResult As String, strValue As String, strReturnValue As String = ""

Dim i As Integer = 0

Dim arrValue As Char()

'Finds how many values are missing from a 32 value string

Dim intRestOfString As Integer = 32 - intBinaryValue.ToString.Length()

Dim strRestZeroes As String = StrDup(intRestOfString, "0")

'Adds the rest of the 0s to the binary string to make it 32 values total

Dim intFinalBinaryValue As String = strRestZeroes & intBinaryValue

'Reverses the string in order to separate it properly

strConversionResult = StrReverse(intFinalBinaryValue)

'Creates a char array in which each char is its own array element

arrValue = strConversionResult.Take(strConversionResult.Length).ToArray

'Iterates through every element

For Each strValue In arrValue

'Skips the first element and adds the space when the returned value is 0

'to determine that it is the 4th character

If (i <> 0) And (i Mod 4 = 0) Then

'Adds the space

strReturnValue = strReturnValue + " "

End If

'Adds the value to the returned value

strReturnValue = strReturnValue + strValue

'incrememets the value counter by 1

i = i + 1

Next

'Reverses the output again to put it in the correct order

strReturnValue = StrReverse(strReturnValue)

Return strReturnValue

End Function

'------------------------------------------------------------

'- Function Name: ConvertDecimalToHex -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This function is called when a user attempts to convert a

'– decimal value to a hex value

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- num - integer that holds decimal value

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- intValHexTemp - holds the decimal value as a string

'- strValHex - holds the hex version of the decimal value

'------------------------------------------------------------

'- Returns: -

'- String - returns hex value -

'------------------------------------------------------------

Function ConvertDecimalToHex(ByVal num As Integer) As String

Dim intValHexTemp As Integer = num.ToString 'Takes the decimal value and puts it in a temp variable

Dim strValHex As String = Hex(intValHexTemp) 'Takes the Hex function and puts it into the string

Return strValHex

End Function

'------------------------------------------------------------

'- Function Name: ConvertHexToBinary -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This function is called whenever a user attempts to convert

'– a hex value to a binary value.

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- num - integer that holds decimal value

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- arrValue - Holds a char array where each character holds one element of the array

'- intBinaryValue - holds converted decimal value

'- intDecimalValue - holds the converted hex value

'- intFinalBinaryValue - Adds both strRestZeroes & intBinaryValue

'- intRestOfString - Finds how many values are missing from a 32 value string

'- strConversionResult - Holds converted result of the string

'- strRestZeroes - Holds literal values of how many zeroes need to be added

'- strReturnValue - Holds the entire string result as it gets built up through the loop

'- strValue - Holds the entire binary string as it gets iterated through

'------------------------------------------------------------

'- Returns: -

'- String – returns hex value -

'------------------------------------------------------------

Function ConvertHexToBinary(ByVal num As String) As String

Dim strValDecimal As String = Convert.ToInt64(num, 16) 'Converts to a base 16 number

'Initlializes variables

Dim intDecimalValue As Integer

Dim intBinaryValue As Integer

intDecimalValue = strValDecimal

intBinaryValue = Convert.ToString(intDecimalValue, 2) 'Converts to a base 2 number

'Initlializes variables for the binary conversion

Dim strConversionResult As String, strValue As String, strReturnValue As String = ""

Dim i As Integer = 0

Dim arrValue As Char()

'Finds how many values are missing from a 32 value string

Dim intRestOfString As Integer = 32 - intBinaryValue.ToString.Length()

Dim strRestZeroes As String = StrDup(intRestOfString, "0")

'Adds the rest of the 0s to the binary string to make it 32 values total

Dim intFinalBinaryValue As String = strRestZeroes & intBinaryValue

'Reverses the string in order to separate it properly

strConversionResult = StrReverse(intFinalBinaryValue)

'Creates a char array in which each char is its own array element

arrValue = strConversionResult.Take(strConversionResult.Length).ToArray

'Iterates through every element

For Each strValue In arrValue

'Skips the first element and adds the space when the returned value is 0

'to determine that it is the 4th character

If (i <> 0) And (i Mod 4 = 0) Then

'Adds the space

strReturnValue = strReturnValue + " "

End If

'Adds the value to the returned value

strReturnValue = strReturnValue + strValue

'incrememets the value counter by 1

i = i + 1

Next

'Reverses the output again to put it in the correct order

strReturnValue = StrReverse(strReturnValue)

Return strReturnValue

End Function

'------------------------------------------------------------

'- Function Name: ConvertHexToDecimal -

'------------------------------------------------------------

'- Written By: Austin Rippee -

'- Written On: March 20th, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- -

'- This function is called whenever a user attempts to convert

'– a hex value to a decimal value

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- num - integer that holds decimal value

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- intValDecimal - holds the decimal conversion from hex -

'------------------------------------------------------------

'- Returns: -

'- Integer – returns decimal value -

'------------------------------------------------------------

Function ConvertHexToDecimal(ByVal num As String) As Integer

Dim intValDecimal As Integer = Convert.ToInt64(num, 16) 'Converts to a base 16 number

Return intValDecimal

End Function

End Class

Graphical user interface

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Description automatically generatedA screenshot of a computer

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