Unit 12 Software Development

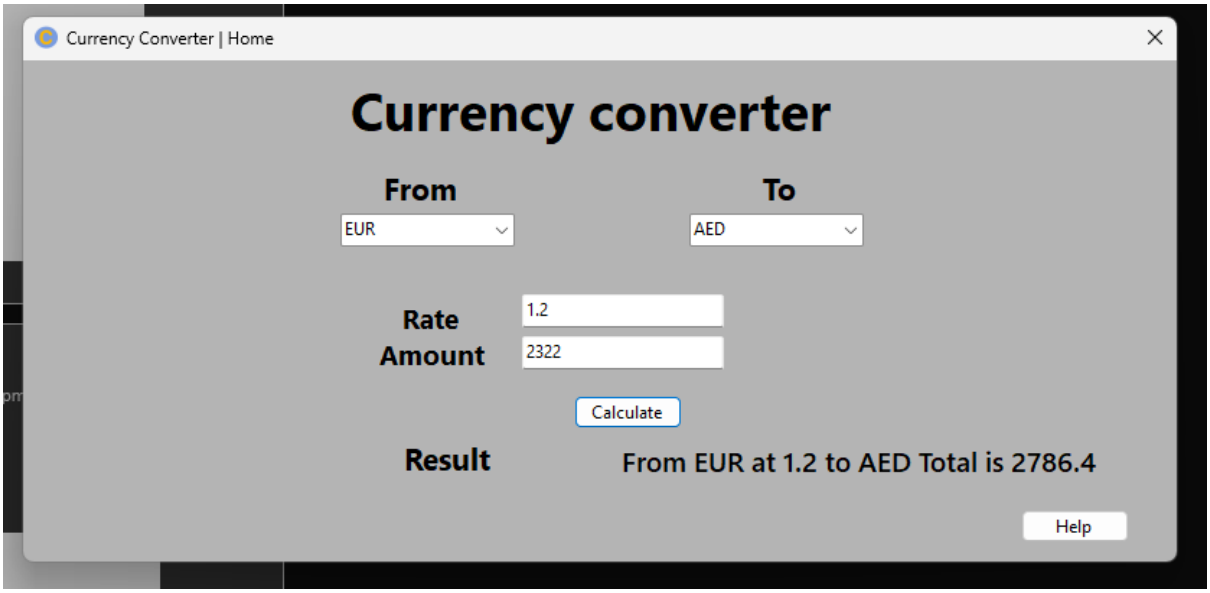
Assignment 3 Template

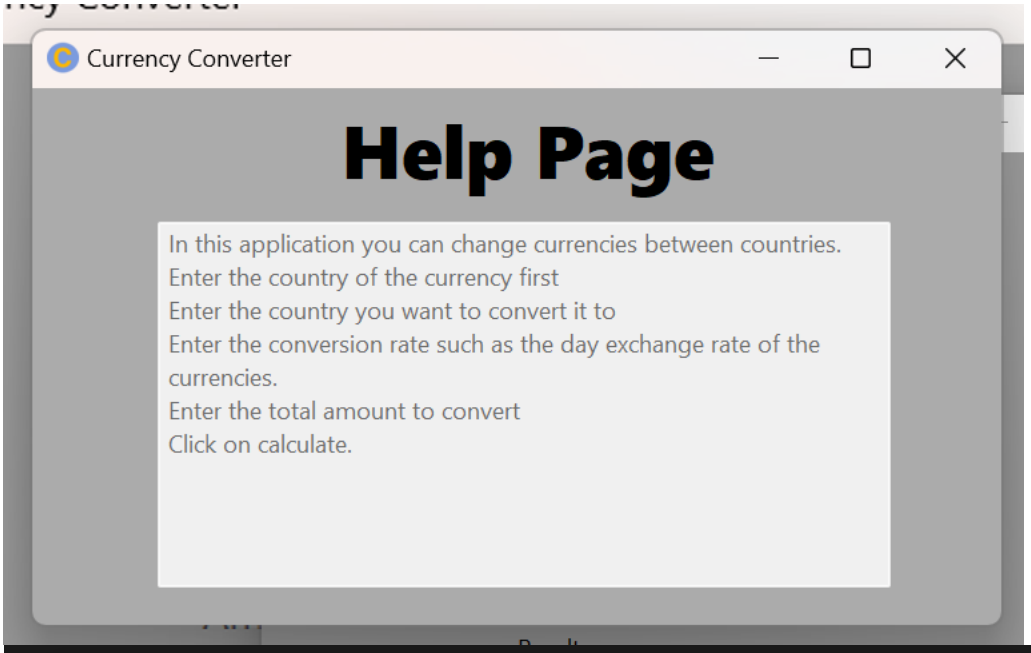
P4 Develop a program for a given brief which includes:

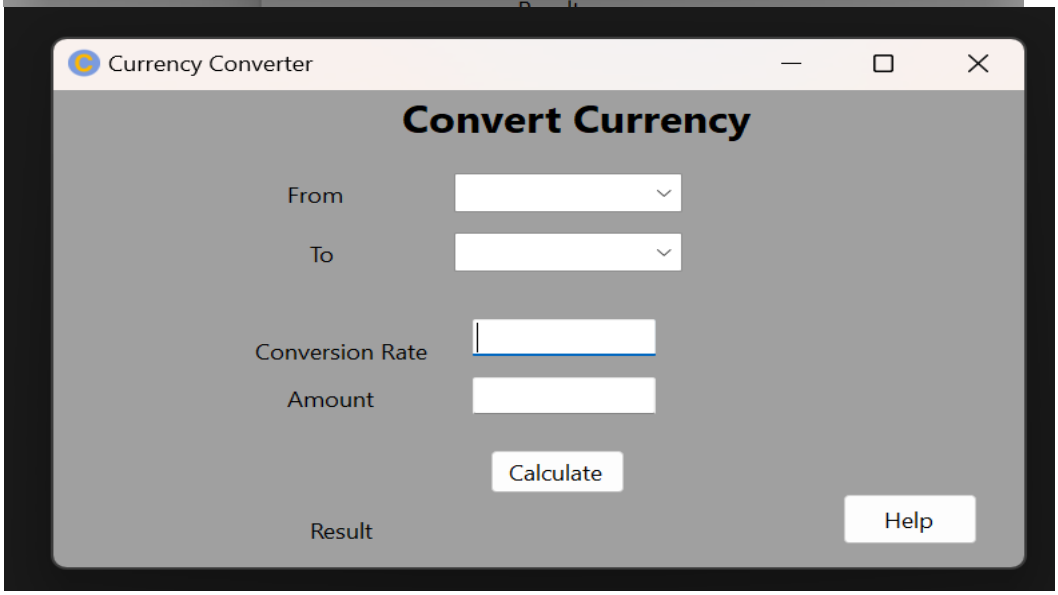
1. **User interface with input and output**

   input – currency, exchange rate

   output – the amount output as the result







2. Constructs and techniques for the program

2.1. Declaring Variables – defining the exchange rate to be used somewhere else in the program

```
Dim conversionRate As Double = Convert.ToDouble(Conversion.Text)

Dim totalAmount As Double = Convert.ToDouble(amount.Text)

Dim convertTotal As Double = conversionRate * totalAmount
```

2.2. Sequence – conversion rate and total defined and are multiplied together ,and a result is displayed , here the conversion amount (rate) and amount are taken and is then converted. Then only the results.txt is updated to show the result

```
Private Sub calculate_Click(sender As Object, e As EventArgs) Handles calculate.Click
    Dim conversionRate As Double = Convert.ToDouble(conversion.Text)

    Dim totalAmount As Double = Convert.ToDouble(amount.Text)

    Dim convertTotal As Double = conversionRate * totalAmount

    result.Text = " From " & from_Currency.Text & " at " & conversionRate & " to " & to_Currency.Text & " Total is " & convertTotal

End Sub
```

2.3. Selection – here is where you can choose from different number of currency , here is picking the the currency to convert to

```
Private Sub From_currency_SelectedIndexChanged(sender As Object, e As EventArgs) Handles from_Currency.SelectedIndexChanged
    If from_Currency.SelectedItem IsNot Nothing AndAlso to_Currency.SelectedItem IsNot Nothing Then
        If from_Currency.SelectedItem.ToString().Equals(to_Currency.SelectedItem.ToString()) Then
            MessageBox.Show("You cannot select the same item as in ComboBox 1 ")
            from_Currency.SelectedIndex = -1
        End If
    End If
End Sub

Private Sub to_Currency_SelectedIndexChanged(sender As Object, e As EventArgs) Handles to_Currency.SelectedIndexChanged
    If to_Currency.SelectedItem IsNot Nothing AndAlso to_Currency.SelectedItem IsNot Nothing Then
        If from_Currency.SelectedItem.ToString().Equals(to_Currency.SelectedItem.ToString()) Then
            MessageBox.Show("You cannot select the same item as in ComboBox 2 ")
            from_Currency.SelectedIndex = -1
        End If
    End If
End Sub
```

2.4. Assignments – this is not only a variable , its also assigned to a float (1.2)

```
Dim USD_rate = 1.2
```

3. Commentary throughout the code (Screenshots of commented code)

Name: Rish saddiq Unit 12 Software Development Assignment 3
Group: T level 2

```
Public Class Form1
    'gonna check if the textbox has letters
    Function checkLetters()

    End Function

    'define the items
    Private Sub Form1_Load(sender As Object, e As EventArgs) Handles MyBase.Load
        from_Currency.Items.Add("USD")
        from_Currency.Items.Add("EUR")
        from_Currency.Items.Add("GBP")

        to_Currency.Items.Add("USD")
        to_Currency.Items.Add("EUR")
        to_Currency.Items.Add("GBP")
    End Sub
    'calculates and displays the result
    Private Sub calculate_Click(sender As Object, e As EventArgs) Handles calculate.Click
        Dim conversionRate As Double = Convert.ToDouble(conversion.Text)
        Dim totalAmount As Double = Convert.ToDouble(amount.Text)
        Dim convertTotal As Double = conversionRate * totalAmount
        result.Text = " From " & from_Currency.Text & " at " & conversionRate & " to " & to_Currency.Text & " Total is " & convertTotal

    End Sub
    'checks if the itesms are the same in the 2 combo boxes
    Private Sub From_currency_SelectedIndexChanged(sender As Object, e As EventArgs) Handles from_Currency.SelectedIndexChanged
        If from_Currency.SelectedItem IsNot Nothing AndAlso to_Currency.SelectedItem IsNot Nothing Then
            If from_Currency.SelectedItem.ToString().Equals(to_Currency.SelectedItem.ToString()) Then
                MessageBox.Show("You cannot select the same item as in ComboBox 1 ")
                from_Currency.SelectedIndex = -1
            End If
        End If
    End Sub

    Private Sub to_Currency_SelectedIndexChanged(sender As Object, e As EventArgs) Handles to_Currency.SelectedIndexChanged
        If to_Currency.SelectedItem IsNot Nothing AndAlso to_Currency.SelectedItem IsNot Nothing Then
            If from_Currency.SelectedItem.ToString().Equals(to_Currency.SelectedItem.ToString()) Then
                MessageBox.Show("You cannot select the same item as in ComboBox 2 ")
                from_Currency.SelectedIndex = -1
            End If
        End If
    End Sub
    'shows the help page
    Private Sub help_Click(sender As Object, e As EventArgs) Handles help.Click
        Dim help As New help()
        help.Show()
    End Sub
End Class
```

P5 Test the program for functionality using the test plan and against the original requirement and repair any faults:

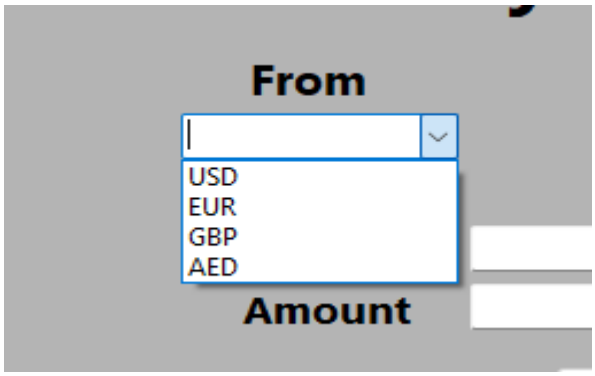
1. Test Plan

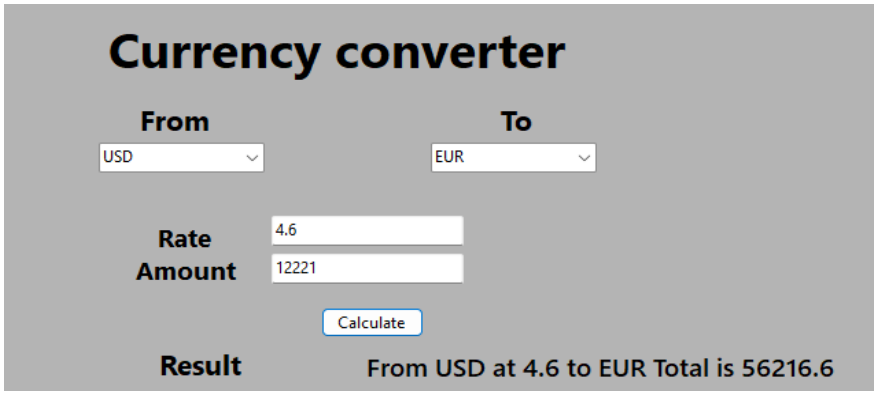
Test number	Testing to see if…	Test data (if applicable)	Expected outcome	Actual Outcome	Corrective action
1	Home screen loads		Loads home screen	Loads , shows result	N/A
2	help screen/button		Click button on home screen to access help screen	Loads and shows help screen	N/A
3.	Enter currency rate	Random numbers / letters	Takes the rate and * by amount	Takes the rate and * by amount	N/A
4	Same currency in combo box		Not allow it	Clears the combo box if the same currency is selected	N/A
5	Display currency	The calculation output f	Display result and override the current text	Shows the result	N/A

M3 Develop a functional program that meets the given brief.

The program should allow the users to do the following:

- Enter the amount in British Pounds and calculate the equivalent amount in foreign currency.
- Enter the amount in foreign currency and calculate the equivalent in British pounds.
- The amount in the desired currency should be displayed.
- The minimum number of currencies to be converted should be at least 4: GBP, EUR, USD and a fourth currency of your choice.





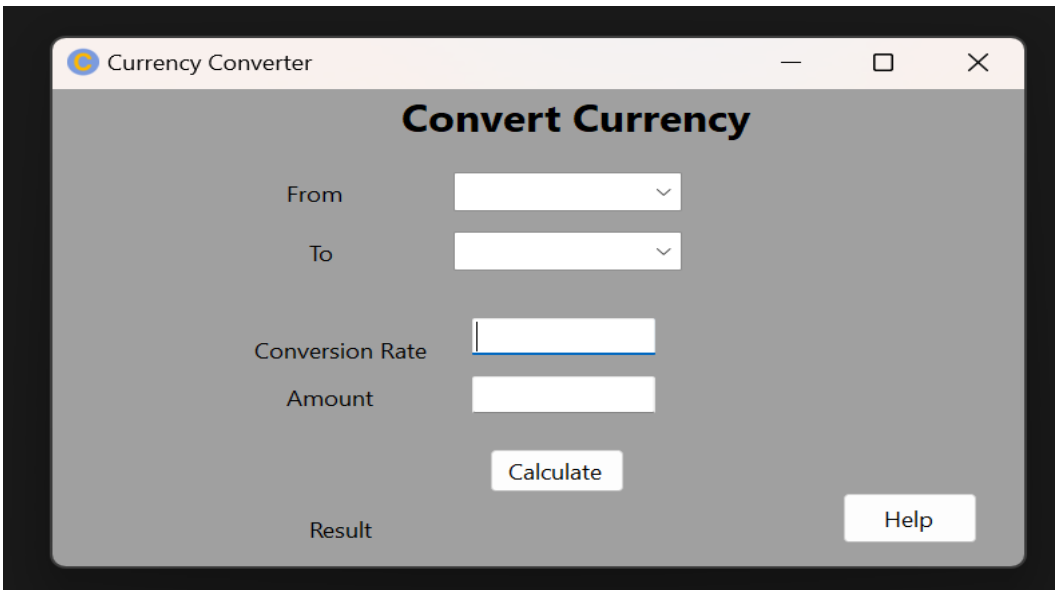
```
Public Class Form1

    Private Sub Form1_Load(sender As Object, e As EventArgs) Handles MyBase.Load
        from_Currency.Items.Add("USD")
        from_Currency.Items.Add("EUR")
        from_Currency.Items.Add("GBP")
        from_Currency.Items.Add("AED")

        to_Currency.Items.Add("USD")
        to_Currency.Items.Add("EUR")
        to_Currency.Items.Add("GBP")
        to_Currency.Items.Add("AED")
    End Sub
    ' the conversion is calculated and output
    Private Sub calculate_Click(sender As Object, e As EventArgs) Handles calculate.Click
        Dim conversionRate As Double = Convert.ToDouble(Conversion.Text)


        Dim totalAmount As Double = Convert.ToDouble(amount.Text)

        Dim convertTotal As Double = conversionRate * totalAmount

        showResult.Text = " From " & from_Currency.Text & " at " & conversionRate & " to " & to_Currency.Text & " Total is " & convertTotal

    Private Sub calculate_Click(sender As Object, e As EventArgs) Handles calculate.Click
        Dim conversionRate As Double = Convert.ToDouble(conversion.Text)

        Dim totalAmount As Double = Convert.ToDouble(amount.Text)

        Dim convertTotal As Double = conversionRate * totalAmount

        result.Text = " From " & from_Currency.Text & " at " & conversionRate & " to " & to_Currency.Text & " Total is " & convertTotal

    End Sub
    'checks if the from and to currencies are the SAME
    Private Sub from_currency_SelectedIndexChanged(sender As Object, e As EventArgs) Handles from_Currency.SelectedIndexChanged
        If from_Currency.SelectedItem IsNot Nothing AndAlso to_Currency.SelectedItem IsNot Nothing Then
            If from_Currency.SelectedItem.ToString().Equals(to_Currency.SelectedItem.ToString()) Then
                MessageBox.Show("You cannot select the same item as in ComboBox 1 ")
                from_Currency.SelectedIndex = -1
            End If
        End If
    End Sub

    Private Sub to_Currency_SelectedIndexChanged(sender As Object, e As EventArgs) Handles to_Currency.SelectedIndexChanged
        If to_Currency.SelectedItem IsNot Nothing AndAlso to_Currency.SelectedItem IsNot Nothing Then
            If from_Currency.SelectedItem.ToString().Equals(to_Currency.SelectedItem.ToString()) Then
                MessageBox.Show("You cannot select the same item as in ComboBox 2 ")
                from_Currency.SelectedIndex = -1
            End If
        End If
    End Sub
    ' shows the help page
    Private Sub help_Click(sender As Object, e As EventArgs) Handles help.Click
        Dim help As New help()
        help.Show()
    End Sub


End Class


End Class
```

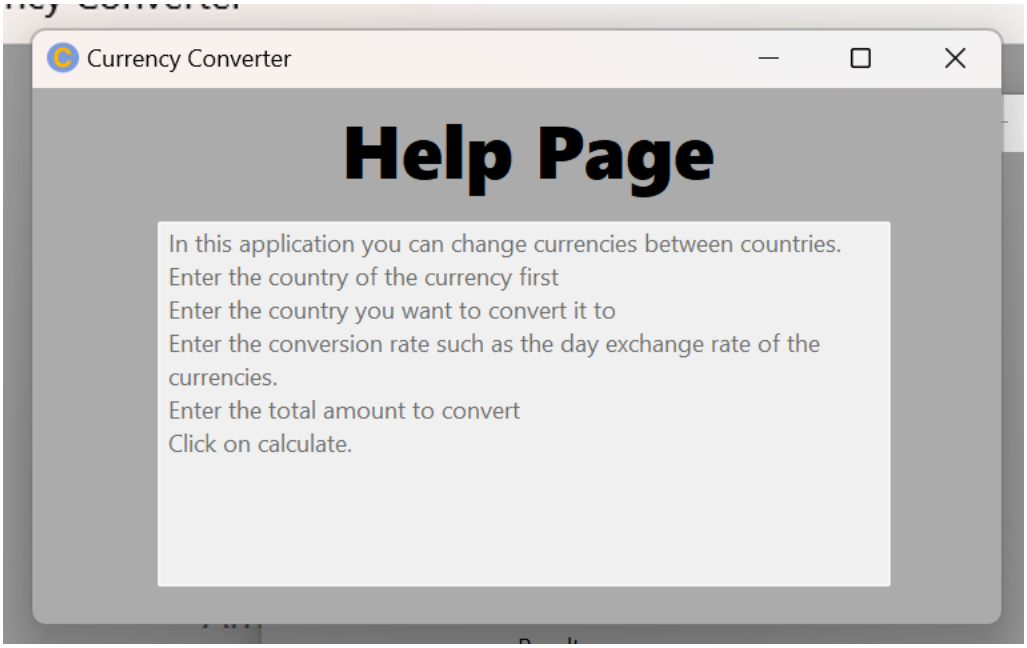
```
Public Class help

End Class
```

M4 Test the program using the test data, gathering feedback from others on the usability and the quality of the program, and use it to improve the software program. Repair any faults.

1. **Use monkey feedback forms to gather feedback on (Usability, Efficiency, Reliability and Maintainability) of your program.**

Before feedback was given





Review: Currency converter feedback

People | Questions

Respondent

1 | Pramod Thotahewage

03:53
Time to complete

1. What do you think of the program *

Score / 0 pts

Program is very good.

2. What can be improved *

Score / 0 pts

Color's of the Buttons and Labels

3. What improvements could be made here

Score / 0 pts

No answer provided.

4. Other comments

Score / 0 pts

-

Name: Rish saddiq
Group: T level 2

Unit 12 Software Development Assignment 3

Review: Currency converter feedback

People | Questions

Respondent

2 Abdullah Kothdiwala

00:50
Time to complete

1. What do you think of the program *

Score / 0 pts

simple.

2. What can be improved *

Score / 0 pts

maybe a background

3. What improvements could be made here

Score / 0 pts

none apart from a background

4. Other comments

Score / 0 pts

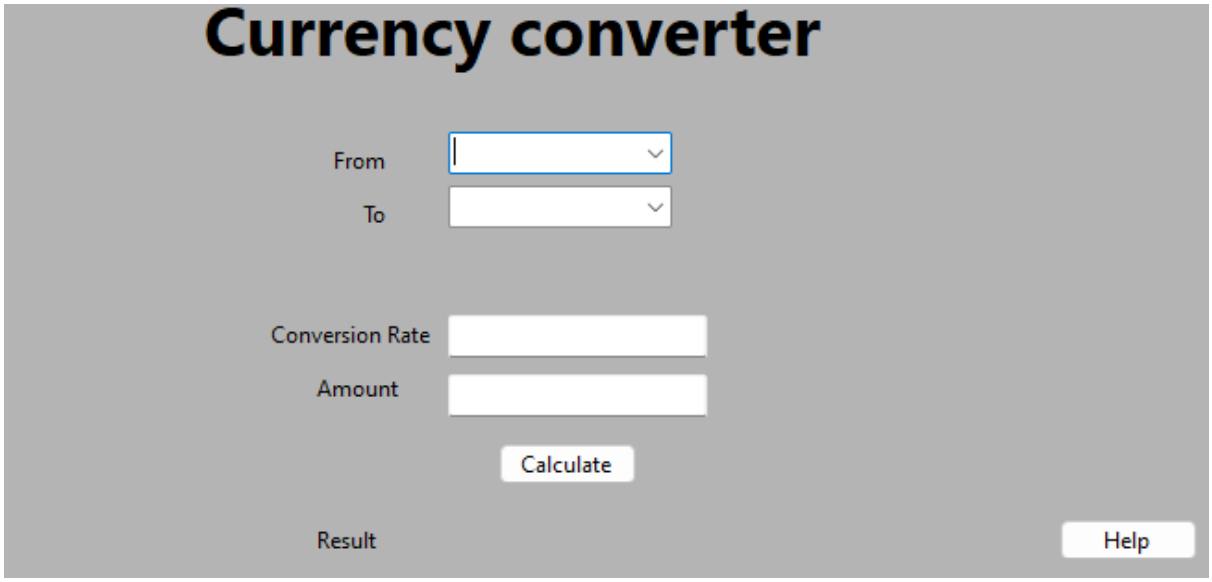
DECENT.

2. Tutor Observation Form (to be provided by your tutor)

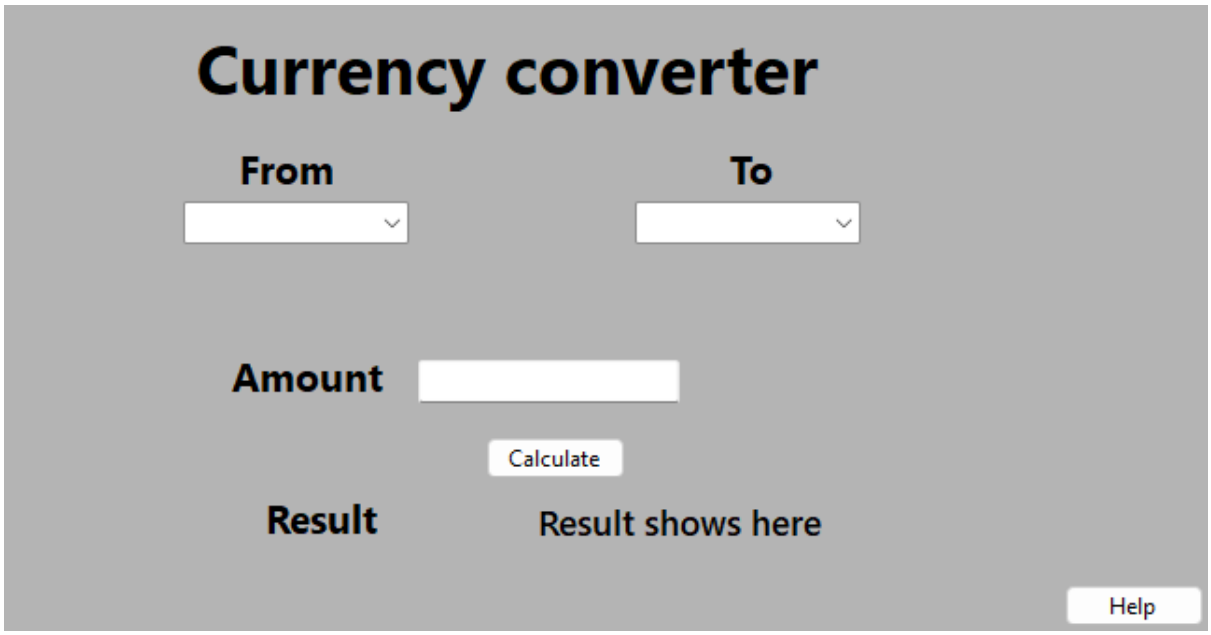
OBSERVATION RECORD

Learner name:	**Rish Saddiq**		
Qualification:	**T Level Foundation -Group 1**		
Unit number & title:	**Unit 12 Software Development**		
Description of activity undertaken			
Reviewing a software program created by the student as part of the assessment for Unit 12 Software development. The Assignment tile is Assignment 3 Create a Software Program			
Assessment criteria			
P4, P5, M3, M4, D3			
How the activity meets the requirements of the assessment criteria			
1) Usability: The program has 2 screens. Screen 1 is the home screen and screen 2 is the help screen. Screen 2 can be accessed with the help button on screen 1. 2) Efficiency: Program seemed to work perfectly, and the navigation was smooth with the different controls built into the interface. The program allows the user to amend the exchange rate. 3) Reliability: The program seemed to be reliable as the calculation was done in real time and was accurate. 4) Robustness: data validation allows only numerical values to be inputted. An error message appears on screen to warn the user that they have entered the wrong values. Good quality program. Well done			
Action Plan			
Action Plan 1) The font size of the labels on the interface could have been made bigger and in bold to increase the usability of the interface .			
Learner name:	**Rish Saddiq**		
Learner signature:		**Date:**	**02/02/2024**
Assessor name:	**Alya Ghulam**		
Assessor signature:	*Alya Ghulam*	**Date:**	**02/02/2024**

before changes made



After changes made



Acted on the feedback given to me

D3 Refine the software program, taking account of the quality of the code and the user feedback.

You need to amend the program so that the user should be able to alter the exchange rates used to match the current rates. Evidence of code screenshots to be provided.

```
Public Class Form1

    Private Sub Form1_Load(sender As Object, e As EventArgs) Handles MyBase.Load
        from_Currency.Items.Add("USD")
        from_Currency.Items.Add("EUR")
        from_Currency.Items.Add("GBP")
        from_Currency.Items.Add("AED")

        to_Currency.Items.Add("USD")
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    ' the conversion is calculated and output
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        Dim totalAmount As Double = Convert.ToDouble(amount.Text)

        Dim convertTotal As Double = conversionRate * totalAmount

        result.Text = " From " & from_Currency.Text & " at " & conversionRate & " to " & to_Currency.Text & " Total is " & convertTotal

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    'checks if the from and to currencies are the SAME
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            If from_Currency.SelectedItem.ToString().Equals(to_Currency.SelectedItem.ToString()) Then
                MessageBox.Show("You cannot select the same item as in ComboBox 1 ")
                from_Currency.SelectedIndex = -1
            End If
        End If
    End Sub

    Private Sub to_Currency_SelectedIndexChanged(sender As Object, e As EventArgs) Handles to_Currency.SelectedIndexChanged
        If to_Currency.SelectedItem IsNot Nothing AndAlso to_Currency.SelectedItem IsNot Nothing Then
            If from_Currency.SelectedItem.ToString().Equals(to_Currency.SelectedItem.ToString()) Then
                MessageBox.Show("You cannot select the same item as in ComboBox 2 ")
                from_Currency.SelectedIndex = -1
            End If
        End If
    End Sub
    ' shows the help page
    Private Sub help_Click(sender As Object, e As EventArgs) Handles help.Click
        Dim help As New help()
        help.Show()
    End Sub


End Class


End Class
```
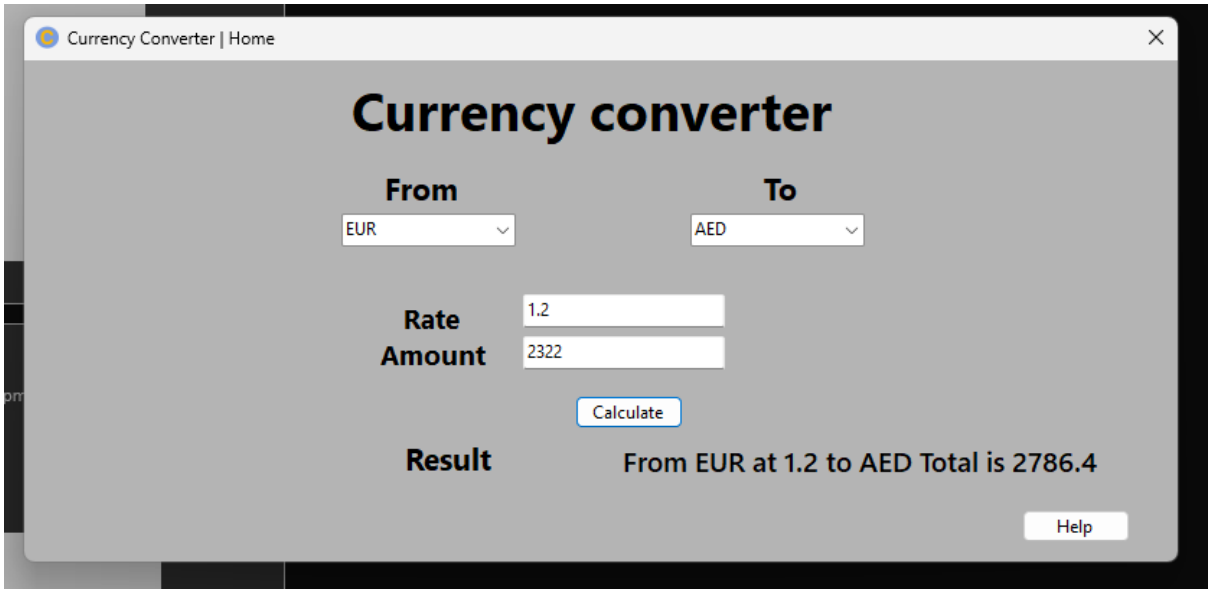

```
Public Class help

End Class
```

Name: Rish saddiq
Group: T level 2

Unit 12 Software Development Assignment 3