```vb
'Anthony Shore
'RCET0265
'Spring 2020
'Math Contest
'https://github.com/shoranth/AVS-VS-S20

Public Class MathContestForm
    Private Sub MathContestForm_Load(sender As Object, e As EventArgs) Handles MyBase.Load
        ResetAllControlls()
    End Sub

    'verifies the text boxes to make sure the correct data is entered
    Sub VerifyTextBoxes()
        'Check each if empty and alert user
        Dim userMessage As String = ""
        Dim userMessageGrade As String = ""
        Dim userMessageAge As String = ""
        Dim gradeLevel As Integer


        'checks to see if the name and number boxes have data in them
        If FirstLastNameTextBox.Text = "" Then
            userMessage &= "Please enter a name into the Name text box." & vbNewLine
            FirstLastNameTextBox.Focus()
        End If
        If FirstNumberTextBox.Text = "" Then
            userMessage &= "Please enter a number into the First Number text box." & vbNewLine
            FirstNumberTextBox.Focus()
        End If
        If SecondNumberTextBox.Text = "" Then
            userMessage &= "Please entera number into the Second Number text box." & vbNewLine
            SecondNumberTextBox.Focus()
        End If

        'checks to see if the grade and age has the proper numbers entered
        If GradeTextBox.Text > 4 Then
            userMessageGrade = "Student not eligible to compete. Only Grades 1-4 are allowed."
            GradeTextBox.Text = ""
            GradeTextBox.Focus()

            Try
                gradeLevel = CInt(GradeTextBox.Text)
            Catch ex As Exception
                MessageBox.Show(userMessageGrade)
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45              End Try
46          ElseIf GradeTextBox.Text < 1 Then
47              userMessageGrade = "Student not eligible to compete. Only Grades
                  1-4 are allowed."
48              GradeTextBox.Text = ""
49              GradeTextBox.Focus()
50
51              Try
52                  gradeLevel = CInt(GradeTextBox.Text)
53              Catch ex As Exception
54                  MessageBox.Show(userMessageGrade)
55              End Try
56          End If
57
58          If AgeTextBox.Text > 11 Then
59              userMessageAge = "Student not eligible to compete. Only ages 7-11
                  are allowed"
60              AgeTextBox.Text = ""
61              AgeTextBox.Focus()
62          ElseIf AgeTextBox.Text < 7 Then
63              userMessageAge = "Student not eligible to compete. Only ages 7-11
                  are allowed."
64              AgeTextBox.Text = ""
65              AgeTextBox.Focus()
66          End If
67
68          'displays a message if there is incorrect data entered so the user can
                fix it.
69          If userMessageAge <> "" Then
70              MessageBox.Show(userMessageAge)
71          End If
72      End Sub
73
74      'performs the math operations based on radio button selected
75      Sub MathOperations()
76
77          Dim answer As Integer
78          Dim firstNumber As Integer
79          Dim secondNumber As Integer
80
81          'converts the math numbers into numbers
82          Try
83              firstNumber = CInt(FirstNumberTextBox.Text)
84          Catch ex As Exception
85              MessageBox.Show("Please enter a valid number into the second
                  number box.")
86              FirstNumberTextBox.Focus()
87          End Try
88
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89          Try
90              secondNumber = CInt(SecondNumberTextBox.Text)
91          Catch ex As Exception
92              MessageBox.Show("Please enter a valid number into the second
                  number box.")
93              SecondNumberTextBox.Focus()
94          End Try
95
96          'performs math operation based on which radio button is selected
97          If AddRadioButton.Checked = True Then
98              answer = firstNumber + secondNumber
99          ElseIf SubtractRadioButton.Checked = True Then
100             answer = firstNumber - secondNumber
101         ElseIf MulitplyRadioButton.Checked = True Then
102             answer = firstNumber * secondNumber
103         ElseIf DivideRadioButton.Checked = True Then
104             answer = firstNumber / secondNumber
105         End If
106
107         CorrectTextBox.Text = answer
108
109     End Sub
110
111     'contains the total number of correct answers
112     Function CorrectAnswer(totalCorrect As Integer) As Integer
113
114         If CorrectTextBox.Text = AnswerTextBox.Text Then
115             MessageBox.Show("Congradulations your answer is correct.")
116             totalCorrect = +1
117         End If
118
119         Return totalCorrect
120     End Function
121
122     'contains total number of times the submit button is pressed.
123     Function totalAnswers(overallTotal As Integer)
124
125         overallTotal = +1
126
127         Return overallTotal
128     End Function
129
130     'keeps track of total number of incorrect answer entered
131     Function InCorrectAnswer(totalIncorrect As Integer) As Integer
132
133         If CorrectTextBox.Text <> AnswerTextBox.Text Then
134             MessageBox.Show("The answer is incorrect.")
135             totalIncorrect = +1
136         End If
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137
138         Return totalIncorrect
139     End Function
140
141     'handles the submit button when click.
142     Private Sub SubmitButton_Click(sender As Object, e As EventArgs) Handles
          SubmitButton.Click
143
144         Static totalCorrect As Integer
145         Static totalIncorrect As Integer
146         Static totalAnswer As Integer
147
148         'runs the various subs in order to check to see if the entered answer
              is correct with the math problem
149         SummaryButton.Enabled = True
150         VerifyTextBoxes()
151         MathOperations()
152         totalCorrect = CorrectAnswer(totalCorrect)
153         totalIncorrect = InCorrectAnswer(totalIncorrect)
154         totalAnswers(overallTotal:=totalAnswer)
155     End Sub
156     'resets all controls when the clear button is pressed
157     Private Sub ClearButton_Click(sender As Object, e As EventArgs) Handles
          ClearButton.Click
158         ResetAllControlls()
159     End Sub
160     'closes the program when the exit button is pressed
161     Private Sub ExitButton_Click(sender As Object, e As EventArgs) Handles
          ExitButton.Click
162         Me.Close()
163     End Sub
164     'resets all textboxes and buttons into the default state. This sub is also
            executed when the program is opened.
165     Sub ResetAllControlls()
166
167         AddRadioButton.Checked = True
168         SubtractRadioButton.Checked = False
169         MulitplyRadioButton.Checked = False
170         DivideRadioButton.Checked = False
171         SummaryButton.Enabled = False
172         SubmitButton.Enabled = False
173
174         GradeTextBox.Text = ""
175         AgeTextBox.Text = ""
176         FirstLastNameTextBox.Text = ""
177         FirstNumberTextBox.Text = ""
178         SecondNumberTextBox.Text = ""
179         AnswerTextBox.Text = ""
180         CorrectTextBox.Text = ""
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181
182     End Sub
183
184     'checks to see if the text boxes all contain text. Checks everytime the
          text is changed in the text boxes. Enables the submit button once all
          the text boxes have text.
185     Private Sub TextBoxesChange_TextChanged(sender As Object, e As EventArgs)
          Handles FirstLastNameTextBox.TextChanged, AgeTextBox.TextChanged,
          GradeTextBox.TextChanged, AnswerTextBox.TextChanged,
          FirstNumberTextBox.TextChanged, SecondNumberTextBox.TextChanged
186
187         If FirstLastNameTextBox.Text <> "" And GradeTextBox.Text <> "" And
              AgeTextBox.Text <> "" And AnswerTextBox.Text <> "" And
              FirstNumberTextBox.Text <> "" And SecondNumberTextBox.Text <> ""
              Then
188             SubmitButton.Enabled = True
189         Else
190             SubmitButton.Enabled = False
191         End If
192
193     End Sub
194
195     'displays the total correct verus the total number of problems.
196     Private Sub SummaryButton_Click(sender As Object, e As EventArgs) Handles
          SummaryButton.Click
197
198         Static totalCorrect As Integer = CorrectAnswer(totalCorrect)
199         Static totalIncorrect As Integer = InCorrectAnswer(totalIncorrect)
200         Static totalAnswer As Integer = totalAnswers
              (overallTotal:=totalAnswer)
201
202         MessageBox.Show("The Student has got " & totalCorrect & " out of " &
              totalAnswer & " correct")
203     End Sub
204 End Class
205
```