



**CTU** training solutions

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Question 1.....	3
Completed Declaration of Authenticity.....	5

## Question 1

Create a Windows application that calculates sales tax for a given amount. The user can enter an amount in a text box and then can enter a sales tax between 0 and 25%, in increments of 1%. When the user clicks the Submit button, the tax is calculated, and both the tax and the total are output in a label. The application should look something like the Figure below when it runs. Display your Amounts in Rands.

The amount is entered in a Textbox control, but for the tax, you want to restrict the values the user can enter, so you should use a numericUpDown control. There's a Clear button that clears the "Amount" TextBox when clicked. Implement some exception handling to ensure that the user enters a number in the TextBox.

You should include the following in your program:

1.Exception handling should be used to prevent users from entering invalid input (text, character...) (try, catch, and finally). [5 Marks]

```
private void MySubmitButton_Click(Object sender, EventArgs e)
{
    try
    {
        double amount = double.Parse(input);
        double taxPercentage = numericUpDown.Value;
        double tax = amount * (taxPercentage / 100);
        double total = amount + tax;

        taxLabel = $"Tax: {tax:C}";
        totalLabel = $"Total: {total:C}";

        string taxCalculation = $"Amount: {amount:C}, Tax: {tax:C}, Total: {total:C}, Date:
{DateTime.Now}";

        File.AppendAllText("TaxCalculation.txt", taxCalculation + Environment.NewLine);
```

```

    }
    catch (Exception ex)
    {
        MessageBox.Show(ex.Message);
        string exceptionMessage = $"Exception: {ex.Message}, Date: {DateTime.Now}";
        File.AppendAllText("Exceptionfile.txt", exceptionMessage + Environment.NewLine);
    }
}

```

2.All exception messages should be displayed using a message box and saved in a text file called Exceptionfile.txt [5 Marks]

```

catch (Exception ex)
{
    MessageBox.Show(ex.Message);
    string exceptionMessage = $"Exception: {ex.Message}, Date: {DateTime.Now}";
    File.AppendAllText("Exceptionfile.txt", exceptionMessage + Environment.NewLine);
}

```

3.All results should be saved in a file called TaxCalculation.txt. The result should be saved once the Submit button is pressed. [5 Marks]

```

finally (this) {
    TextWriter txt = new StreamWriter("Taxcalculation.txt");
    txt.Write(total.Text);
    txt.Close();
}

```

## Completed Declaration of Authenticity

I Gabriella Rakgotsoka

\_ hereby

(FULL NAME)

declare that the contents of this assignment PRG521\_FA3 is entirely my own  
work except for the following documents: (List the documents and page numbers of work in this  
portfolio  
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Activi ty	Da te



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Date: 2022/10/4