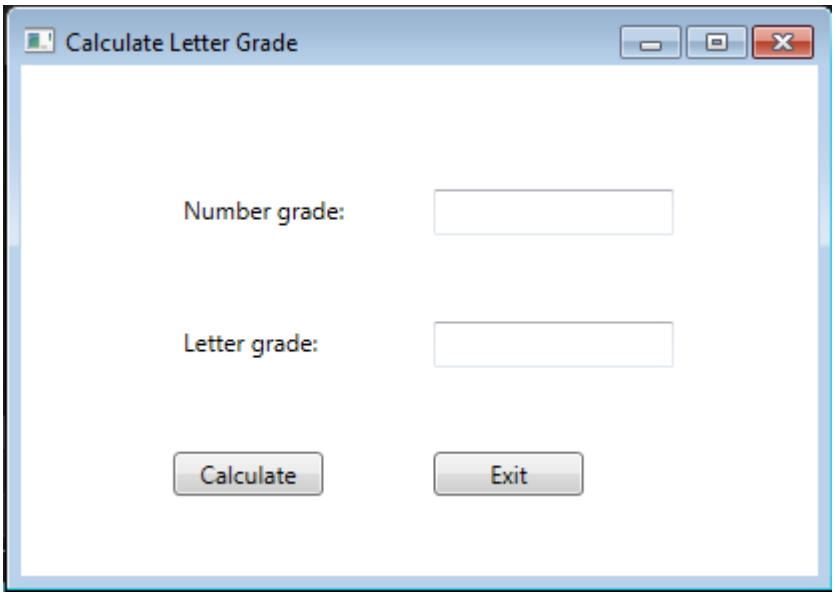
Week 7 – Exercise 1 Design a simple form

In this exercise, you'll design a form that lets the user enter a number grade and then displays the letter grade when the user clicks the Calculate button.



1. Start a new WPF project named CalculateLetterGrade
2. Add the labels, text boxes, and buttons to the form as shown above. Then, set the properties of these controls as follows:

Default name	Property	Setting
label1	Text	Number grade:
	TextAlign	MiddleLeft
	TabIndex	0
label2	Text	Letter grade:
	TextAlign	MiddleLeft
textBox1	Name	txtNumberGrade
	TabIndex	1
textBox2	Name	txtLetterGrade
	ReadOnly	True
	TabStop	False
button1	Name	btnCalculate
	Text	Calculate
	TabIndex	2
button2	Name	btnExit
	Text	Exit
	TabIndex	3

3. Now, set the properties of the form as follows:

Default name	Property	Setting
Form1	Text	Calculate Letter Grade
	AcceptButton	btnCalculate
	CancelButton	btnExit
	StartPosition	CenterScreen

4. Use the Form Designer to adjust the size and position of the controls and the size of the form so they look as shown above.
5. Rename the form to frmCalculateGrade. When you're asked if you want to modify any references to the form, click the Yes button.
6. Save the project and all of its files.

Week 7 – Exercise 2 Code and test the Calculate Letter Grade form

In this exercise, you'll add code to the Calculate Letter Grade form that you designed in exercise 1. Then, you'll build and test the project to be sure it works correctly.

1. Open the CalculateLetterGrade project created in Exercise 1.
2. Display the form in the Form Designer, and double-click the Calculate button to generate a Click event handler for it. Then, add this statement to the event handler to get the number grade the user enters:

   ```
   decimal numberGrade = Convert.ToDecimal(txtNumberGrade.Text);
   ```

3. Add this statement to the event handler to declare and initialize the variable that will hold the letter grade:

   ```
   string letterGrade = "";
   ```

   Then, add this if-else statement to set the letter grade:

   ```
   if (numberGrade >= 88)
   {
      letterGrade = "A";
   }
   else if (numberGrade >= 80 && numberGrade <= 87)
   {
      letterGrade = "B";
   }
   else if (numberGrade >= 68 && numberGrade <= 79)
   {
      letterGrade = "C";
   }
   else if (numberGrade >= 60 && numberGrade <= 67)
   {
      letterGrade = "D";
   }
   else
   {
      letterGrade = "F";
   }
   ```

4. Add this statement to display the letter grade in the Letter Grade text box:

   ```
   txtLetterGrade.Text = letterGrade;
   ```

5. Finally, add this statement to move the focus back to the Number Grade text box:

   ```
   txtNumberGrade.Focus();
   ```

6. Return to the Form Designer, and then double-click the Exit button to generate a Click event handler for it. Then, add this statement to the event handler to close the form:

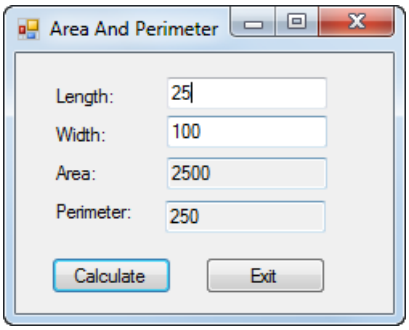
   ```
   this.Close();
   ```

7. Run the application, enter a number between 0 and 100, and then click the Calculate button. A letter grade should be displayed and the focus should return

to the Number Grade text box. Next, enter a different number and press the enter key to display the letter grade for that number. When you're done, press the Esc key to end the application.

Week 7 – Exercise 3 Calculate area and perimeter

In this exercise, you'll create a form that accepts the length and width of a rectangle from the user and then calculates the area and perimeter of the rectangle.



1. Start a new WPF project named AreaAndPerimeter.
2. Add labels, text boxes, and buttons to the default form and set the properties of the form and its controls so they appear as shown above. When the user presses the Enter key, the Click event of the Calculate button should fire. When the user presses the Esc key, the Click event of the Exit button should fire.
3. Create an event handler for the Click event of the Calculate button. This event handler should get the values the user enters for the length and width, calculate and display the area (length x width) and perimeter (2 x length + 2 x width), and move the focus to the Length text box. It should provide for decimal entries, but you can assume that the user will enter valid decimal values.
4. Create an event handler for the Click event of the Exit button that closes the form.
5. Test the application to be sure it works correctly.