

## Lab 3B – Temperature Converter

You will create a program converts temperatures from Fahrenheit to Celsius and from Celsius to Fahrenheit. The application will

- allow users to enter a temperature (in degrees);
- convert that temperature from Celsius to Fahrenheit and display the result;
- convert that temperature from Fahrenheit to Celsius and display the result.

The formula for converting Celsius to Fahrenheit ( $C$  is the Celsius temperature and  $F$  is the Fahrenheit temperature) is  $F = 1.8 \bullet C + 32$ .

The formula for converting Fahrenheit to Celsius ( $F$  is the Fahrenheit temperature and  $C$  is the Celsius temperature) is  $C = (F - 32) \div 1.8$ .

Display answers to the nearest tenth (one decimal place). See pages 154-159 if you need help remembering how to do this.

If users fail to enter numeric values, display an appropriate error message (either in a MessageBox or in a StatusStrip) and do not attempt to perform calculations.

A basic form layout can be seen in the sample data - you do not need to design your form exactly like this.

### Objectives

- User interface - form design and layout
- Utilizing TextBox for user input
- Focus method
- Designing access keys - use of &
- AcceptButton & CancelButton
- Variables
- Arithmetic Operators
- Converting data types
- .ToString method
- Formatting strings
- Exception handling with try-catch

## Requirements

- Comment your code!!!
- There are no fixed values in this program - no identifiers need to be declared as constants.
- Use variables for any data you are collecting and displaying. You may find variables useful for some calculation work performed during the program. Consider what data types make sense for the kind of values you plan to store in the variables.
- Handle the exception if a numeric value is not entered for pizza diameter.
- CALCULATE (or whatever text you use) is the form's AcceptButton and EXIT (or whatever text you use) is the form's CancelButton
- Tab order: temperature text box, CALCULATE button, CLEAR/RESET button, and EXIT button
- Include keyboard access to CALCULATE, CLEAR/RESET, and EXIT buttons
- Type and modify the following at the top of the code:  

```
'Your Name  
'Date  
'Assignment Name (Lab 3B - Temperature Converter, for example)  
'Computer Programming I - Bower (or CS 11400 - Bower if you want IPFW class)  
'This program will... (describe the program)
```

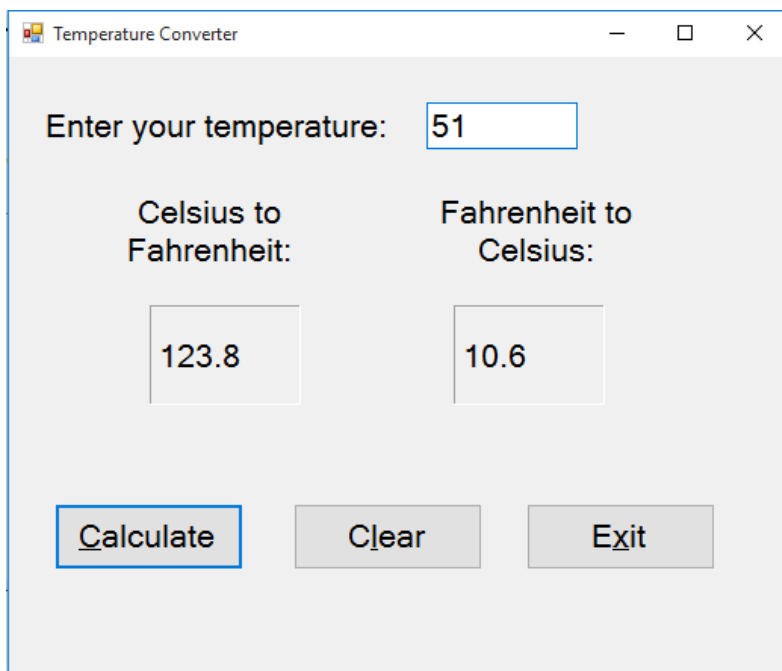
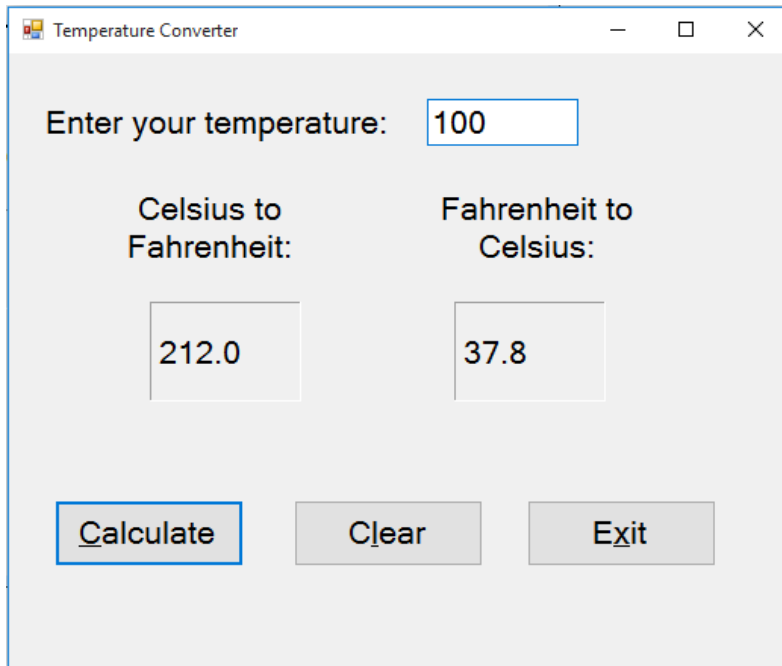
Sample Data (remember that the access key underscores only appear when users press ALT)

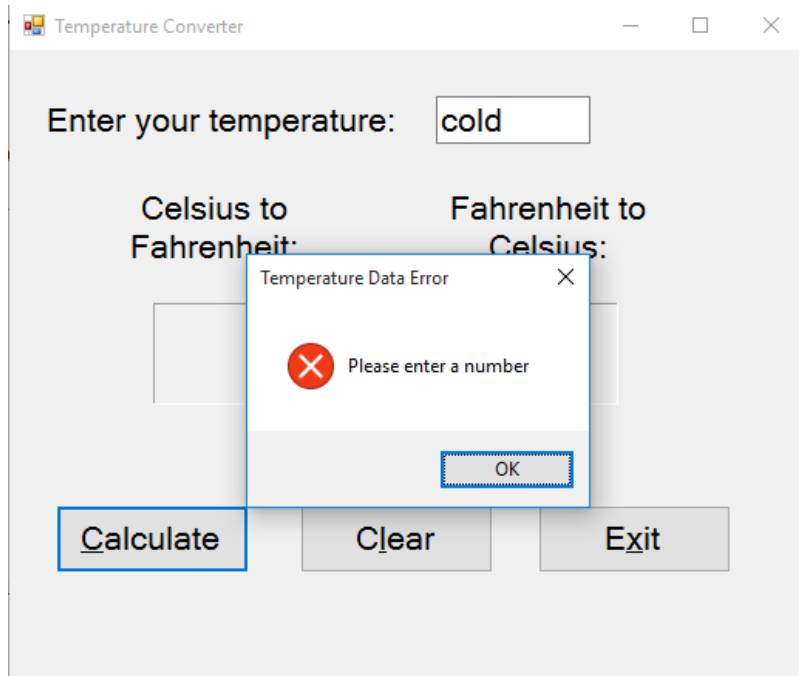
Temperature Converter

Enter your temperature:

Celsius to Fahrenheit:

Fahrenheit to Celsius:





Grading

Form design / Control names	4
Runs properly	3
Comments/documentation included	3
Accurate results (includes formatting)	6
Variable names & data types	3
Calculate button	3
Clear/Reset button	2
Exit button	1
Exception handling (catches unacceptable input)	3
Run-time communication	2
<b>TOTAL</b>	<b>30</b>