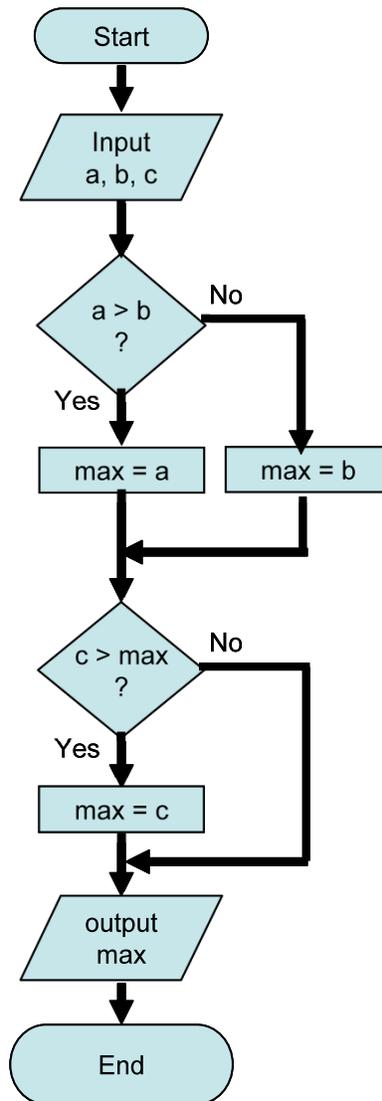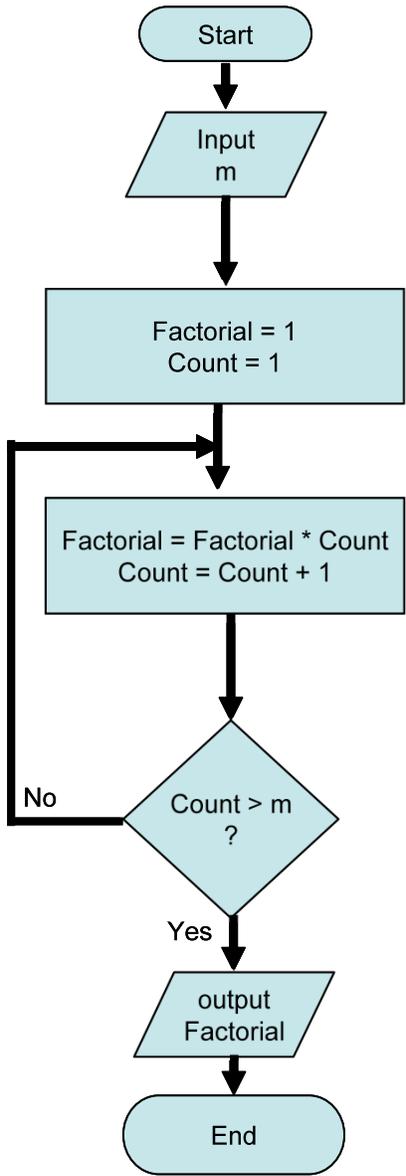**Homework #2**
McKinney CE311K

Problem 1. Given 3 numbers – a, b, and c – draw a flowchart illustrating how an algorithm to (1) input the numbers, (2) find the maximum of these three numbers, and (3) output the result would operate.

```
                    ┌──────────┐
                    │  Start   │
                    └────┬─────┘
                         │
                   ╱─────────╲
                  │   Input   │
                  │  a, b, c  │
                   ╲─────────╱
                         │
                      ◇ a > b ?            No
                         │ Yes              │
                  ┌──────────┐        ┌──────────┐
                  │ max = a  │        │ max = b  │
                  └────┬─────┘        └─────┬────┘
                         │
                      ◇ c > max ?          No
                         │ Yes              │
                  ┌──────────┐
                  │ max = c  │
                  └────┬─────┘
                         │
                   ╱─────────╲
                  │  output   │
                  │   max     │
                   ╲─────────╱
                         │
                    ┌──────────┐
                    │   End    │
                    └──────────┘
```

Start

Input
a, b, c

a > b ?   No

Yes

max = a   max = b

c > max ?   No

Yes

max = c

output
max

End

Problem 2. Given one numbers – m – draw a flowchart illustrating how an algorithm to (1) input the number, (2) find the factorial of this number, and (3) output the result would operate.

Remember: $x! = x*(x-1)*(x-2)…2*1$ and $0! = 1$

Start

Input
m

Factorial = 1
Count = 1

Factorial = Factorial * Count
Count = Count + 1

No

Count > m
?

Yes

output
Factorial

End

Problem 3. Complete Problem 7, page 40 in the text

Create a label containing the sentence "After all is said and done, more is said that done." The sentence should occupy three lines, and each line should be centered horizontally in the label.

SOLUUTION

1. Double-click on the Label icon in the Toolbox.
2. Activate the Properties window, and highlight the AutoSize property.
3. Set the AutoSize property to False.
4. Highlight the Text property.
5. Type the requested sentence.
6. Highlight the TextAlign property.
7. Click on the down-arrow button to the right of the Settings box, and click on one of the center rectangles.
8. Click on the form.
9. Use the mouse to resize the label so that the sentence occupies three lines.
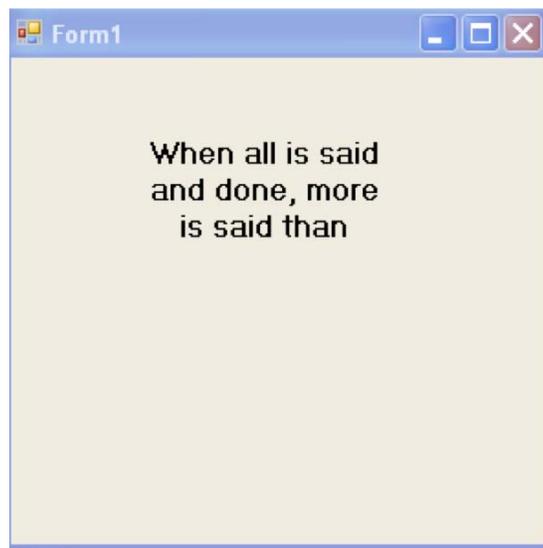
Problem 4. Complete Problem 8, page 40 in the text

Create a "read-only" text box containing the words "Visual Basic" in bold white letters on a red background.

SOLUTION

1. Double-click on the TextBox icon in the Toolbox.
2. Activate the Properties window, and highlight the Text property.
3. Type "Visual Basic" and then press the Enter key.
4. If the text isn't all visible, drag the text box's right sizing handle to the right until all the text can be seen.
5. Highlight the ReadOnly property.
6. Double-click on the ReadOnly property to change it's setting to True. (Or, go to the Settings box, press the down-arrow button, and click on True.)
7. Highlight the Font property.
8. Click on the ellipsis to the right of the Settings box.
9. In the Font style box, click on Bold.
10. Click OK.
11. Highlight the BackColor property and click on the down-arrow button.
12. Click on the Custom tab.
13. Click on the desired red in the palette.
14. Highlight the ForeColor property and click on the down-arrow button.
15. Click on the Custom tab.
16. Click on the white square in the upper-left corner of the palette.
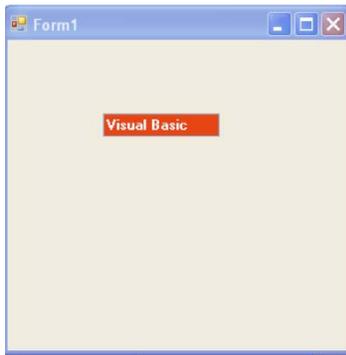
Problem 5. Complete Problem 6, page 55 in the text. Describe the contents of the text box after the button is clicked.

```
Private Sub btnOutput_Click(…)
       txtBox.BackColor = Color.Yellow
       txtBox.Text = "Hello"
End Sub
```

The word "Hello" on a yellow background

Problem 6. Complete Problem 12, page 56 in the text

> Private Sub btnOutput_Click(…)
>   txtBox.Text = Hello
> End Sub

> The word "Hello" must be surrounded with quotation marks.

Problem 7. Complete Problem 18, page 56 in the text. Write a line or lines of code to Display "Play it again, Sam." In lblTwo.

```
lblTwo.Text = "Play it, Sam."
```

Problem 10. Complete Problem 42, page 59 in the text

Simulate a traffic light with three small square text boxes placed vertically on a form. Initially the bottom text box is solid green and the other text boxes are dark gray. When the Tab key is pressed, the middle box turns yellow and the bottom box turns dark gray. The next time the Tab button is pressed the top box turns red and the middle box turns dark gray. Subsequent pressing of the Tab key cycles through the three colors.


```
Private Sub txtGreen_Enter(ByVal sender As System.
  txtGreen.BackColor = Color.Green
  txtYellow.BackColor = Color.DarkGray
  txtRed.BackColor = Color.DarkGray
End Sub

Private Sub txtYellow_Enter(ByVal sender As System
  txtGreen.BackColor = Color.DarkGray
  txtYellow.BackColor = Color.Yellow
  txtRed.BackColor = Color.DarkGray
End Sub

Private Sub txtRed_Enter(ByVal sender As System.Ob
  txtGreen.BackColor = Color.DarkGray
  txtYellow.BackColor = Color.DarkGray
  txtRed.BackColor = Color.Red
End Sub
```