

Program Description:

In this program, you will practice creating a form with various controls, writing an event procedure, declaring variables and constants, writing assignments, displaying results.

Program Preparation:

For this programming assignment perform program analysis, i.e., write down INPUT, OUTPUT, PROCESSING, and TEST CASES (5). Fill in the sheet at the end of this assignment and turn in to your instructor in class on the due date along with your grade sheet.

Program Description:

Write Visual Basic application that will calculate gallons in a barrel and then the cost of the barrel of oil. You may assume cost of one gallon of oil is \$2.69. Allow the user to enter height and radius of the barrel in whole inches. Calculate how many gallons are in the barrel and the cost of the barrel. Show result in separate text boxes that are read-only (Use property *Enabled* and set it to False). Only display the result text boxes after calculations have been performed. What property will hide the controls initially?

You may use the following constants in your solution:

Pi = 3.14149

1 cubic inch = 0.004329 gallons

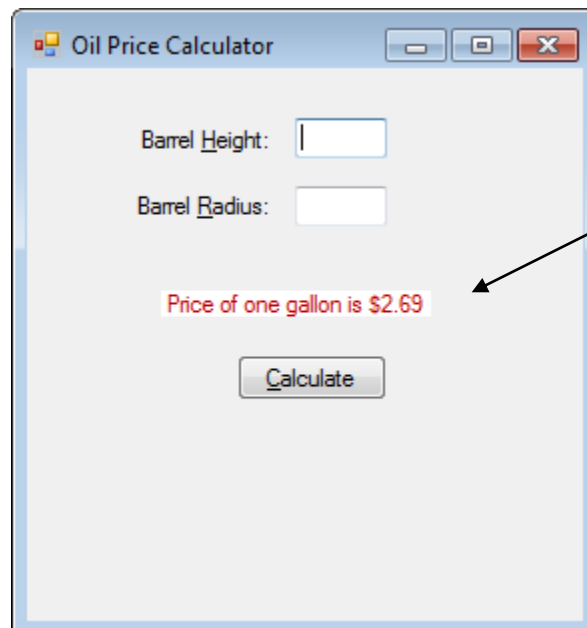
Volume of a cylinder = $\text{Pi} * h * r * r$

Instructions:

Make sure you change the application name and designate location where the application is saved when creating the application. Use <lastname> <firstname> Program 1 as the application name.

Design the form to look like the picture below:

Remember to give Text and Name properties to all objects except the Form1 object for which only the Text property should be changed. Make sure the tab order is correct and test your accelerator keys.



Red text on white background

Program # 1 [40 points]

DUE: September 10 at the beginning of class

Your main processing will go into the Click event for the Calculate button (e.g. btnCalculate). Declare all your variables and constants, use inline comments (example below) and white space to separate blocks of code.

Get values user typed into your text boxes by using the following code (NOTE: variable and control names may be different in your code)

```
‘ Get values the user entered into my text box controls  
‘  
height = CInt(txtHeight.Text)  
radius = CInt(txtRadius.Text)
```

CInt converts text to a number

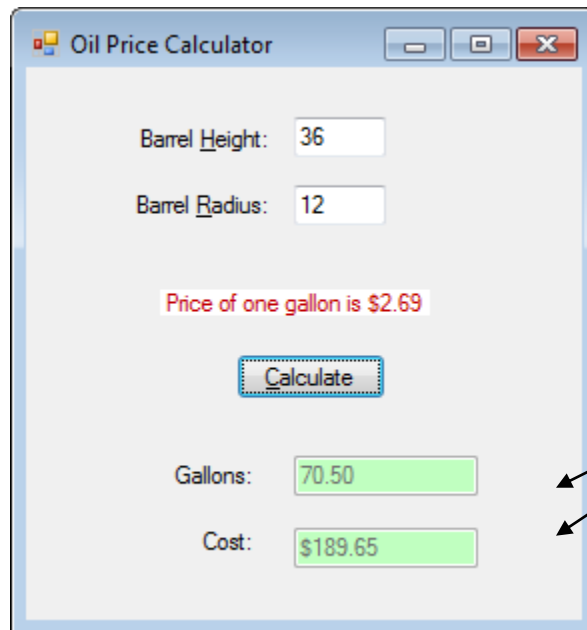
Write code to calculate area of the room, number of tiles needed and cost of the tiles. When your results are calculated set the **text** property of text boxes and the **visible** property to show the controls along with their labels. See example below:

Inline comment starts with single quote

```
‘ Load answer into the text box  
‘ and make label and text box visible on the form  
‘  
txtCost.Text = FormatCurrency(cost)  
lblCost.Visible = True  
txtCost.Visible = True
```

Assignment statement that sets the text property of the text box to be the same as what the **cost** variable contains

The form should look like this when results are displayed:



Controls cannot be typed into. Black on green background

Round each result value to two decimal places (i.e., use FormatCurrency as shown above)
Round each gallon value to two decimal places (i.e., use FormatNumber instead)

Test your application with all the test cases you came up with. You may assume each input value will be a valid integer number (i.e., no negatives and no 0) for now.

What to turn in?

1. Open CS Classes folder. Refer to CS Classes How-to handout if needed.
2. Locate **Carlson**→**semester**→**CS1010**→**Section X** (where X is your section number) →**Program 1 OPEN** folder.
3. Drag your solution folder into it.
4. Bring the last page to class on due date with your grading sheet, filled out, and stapled on top.

LATE WORK WILL NOT BE ACCEPTED OR GRADED

Program # 1 [40 points]

DUE: September 10 at the beginning of class

Name: _____ CS1010-section _____

INPUTS:

OUTPUTS:

PROCESSING:

TEST CASES and EXPECTED RESULTS: