

# CISS 160 Homework - Introductory Calculation Problems

The grade you earn will be based on a number of factors, including overall quality/correctness/validity of your application, following the file naming guidelines, following the compressed folder guidelines (see below and Syllabus), and following the other guidelines such as comments for your name, programming comments, test cases etc.

## General guidelines for each program:

> Include three comment lines within each program's Form1.cs file with your name, student id number, date, and goal/purpose of the program:

//Author: Your NAME

//ID: Your Student ID Number (NOT YOUR SOCIAL SECURITY NUMBER)

//Date:

//Goal-Purpose of the Program: (...your description...)

> within any program file where you write source code, include comments throughout your code describing in your own words, what the various sections of your code are doing; single line comments can be preceded by two forward slashes //COMMENT...

> for each program create a Text file in the folder where your project files are located and call it TestPlan.txt – edit that file for each program below to include a description of the different 'Tests' that you performed to give yourself assurance that your program is valid/is working correctly; this can include validating data to be numeric, validating that required data was entered, exception handling, other tests to verify specific calculations, functionality, verifying User Interface events etc.

## Write the C# programs described below:

> the requirements for each program will be described as a paragraph below OR the requirements will be represented as a compiled .exe of a program (note: this is not source code) that I include in the assignment folder so you can see a running version of how your program should work

> we will cover general aspects of various programming elements during lectures, but it is up to you to combine the lecture learning components along with the textbook reading to create a specific solution

> any images/graphics that are needed will be included in the assignment folder or I will provide in Angel

1. (20 Points) Lorain County Sales Tax Calculator - see the included .exe. Note that you do not need to validate the input from the user. Name your project:

**SalesTaxCalc - Your Name**

(see next page for #2)

# CISS 160 Homework - Introductory Calculation Problems

2. (40 Points) 5 Year Car Cost Comparison Tool. Note that you do not need to validate the input from the user. Name your project:

## CarCostComparison - Your Name

Create a Windows Form with C# that calculates and compares the 5 year total cost of 2 different cars:

- Assume each car has \$3.50 per gallon cost of Fuel
- Assume each car is driven 12,000 Miles per Year

Enter the following Labels and Textboxes on a C# Windows Form

	Car 1	Car 2
Year	<input type="text"/>	<input type="text"/>
Make	<input type="text"/>	<input type="text"/>
Model	<input type="text"/>	<input type="text"/>
Published Miles Per Gallon MPG	<input type="text"/>	<input type="text"/>

Comments (these comments below are my explanation and they do NOT have to be put on your Form)

Enter Average MPG for each car (use **Combined** City-Highway MPG ) using this web site:

<http://www.fueleconomy.gov/feg/findacar.shtml>

Initial Purchase Price	<input type="text"/>	<input type="text"/>
------------------------	----------------------	----------------------

Enter Purchase Price for each car using whatever you paid or find its current price on a web site like cars.com

Annual Repair Cost	<input type="text"/>	<input type="text"/>
--------------------	----------------------	----------------------

Enter Average Repair Cost Per Year based on Consumer Reports Ratings

If you find the car in the included pdf file 'Cars to avoid' list then enter \$2,000 in repairs per year, otherwise enter \$500 in repairs per year

Annual Insurance Cost	<input type="text"/>	<input type="text"/>
-----------------------	----------------------	----------------------

Enter Insurance Cost using this web site:

<http://money.msn.com/auto-insurance/auto-insurance-quotes>

if you cannot find the car on the insurance site then assume Insurance cost is \$1,000/year

### CALCULATIONS

Calculated 1 Year Total Fuel Cost	Display Calculation Result	Display Calculation Result
-----------------------------------	----------------------------	----------------------------

Calculate the cost of 1 Year of Fuel based on overall Miles Driven Per Year assumption, Fuel Cost Per Gallon assumption and MPG for each car

Calculated 5 Year Total Cost	Display Calculation Result	Display Calculation Result
------------------------------	----------------------------	----------------------------

Calculate the Total Cost over 5 years  
= Purchase Price + 5 Years of Annual Fuel Cost  
+ 5 Years of Repairs + 5 Years of Insurance

For the car with the lower Total cost, highlight the 5 Year Total cost label with a Green color background

Take all of your completed project folders above (unzipped) and copy them into a folder named:

## IntroCalcProblems - Your Name

Zip up this folder and submit the zip file in this dropbox by the due date and time.