Integration Project (420-516-AB)  
Fall 2020

**Assignment # 1 (worth 5% or 6.7%)  
Due: Monday, August 31st, 2020 at 23:59 on Lea**

*Deductions for late submissions is 10%/day, up to a maximum of 3 days.   
Better late than never.*

Create one C# Console App (.NET Core) project to include all these questions. Create a menu system with a loop to reach every question without stopping the program.

1. Write a console application that accepts a number of inches from the user and converts it into centimeters, displaying the result. Use a constant 2.54 for the number of centimeters in an inch.
2. Create a console application that accepts two numbers from the user, divides the larger number by the smaller number, and outputs the result. Use exception handling to deal with the case where zero is entered. First code your application using double variables and notice what happened. Finally, use int variables.
3. Write a console application that accepts a monetary value from the user (an amount in dollars) and displays the conversion in currency denominations.   
   Ex: $113 = 5 twenties, 1 ten, 0 fives, 1 two and 1 one.
4. Write a console application that takes in a sentence (entered by the user) and outputs the following information about the sentence provided:
   * + Number of words
     + Total number of spaces
     + Longest word
     + Shortest word

The application should also output the sentence in reverse order.

Hint: You might want to use the Split function which splits a string into an array.

1. Write a console application that starts off with a list of basic colors.

A user can search for a color in the list, add a new color, or delete a color (if it exists). The application should output the total number of colors and the sorted list (colors in alphabetical order) after every user action.

1. Create a program that holds at least 25 employees information and randomly picks 3 winners: Platinum (first), Gold (second), Silver (third).

Employees are identified with:

Employee ID, First Name, Last Name, Department, Position, Yearly Salary.

Output all the information of the 3 winning employees.

Write a C# console application that demonstrates this program.

1. A company wants to keep track of the letters they send to clients.

All letters have a date and recipient, but certified letters also have a tracking number. Create the Letter class and a child class CertifiedLetter with appropriate fields/properties. Include a default constructor (with no parameters) and a constructor with parameters.

Override the ToString() method to return the type of letter and all its fields.

Write a C# console application that demonstrates your use of these classes and methods.

1. A cookie baker wants to store cookie orders placed by customers.

Each order contains a customer name, order number, quantity, type of cookie and total price. The price is calculated at $2.25 per cookie for any orders below two dozen, and $1.50 per cookie for any orders of two dozen or more. Create a CookieOrder class and appropriate constructors/methods as required (including a CalculatePrice method).

Occasionally special orders are placed (and a description must be included in these to show why the order is special, e.g. gluten-free. This class should inherit from the CookieOrder class but also contain the field for the description. It should also override the CalculatePrice method for special orders where a handling fee of $5.00 must be added to the price.

Write a C# console application that demonstrates your use of these classes and methods.