CSC 230: Elementary Data Structures and Algorithms

Assignment Two

Objective:

To create recursive methods

Assignment:

Create one program called **lastNameFirstInitialHW2.java**. (Mine would be called KikuchiCHW2). This is a simple program that has only the one main class.

1. **Find the number of uppercase letters in a string**

   Write a static int recursive method called **countUppercase()** to return the number of uppercase letters in a string. Its parameter will be a string.
   Hint: The str.charAt method is most helpful!

2. **Find the number of uppercase letters in an array**

   Write a recursive method called **count()** to return the number of uppercase letters in an array of characters. You need to define the following two methods. The second one is a recursive helper method.
   public static int count(char[] chars)
   public static int count(char[] chars, int high)
   Hint: The Character.isUpperCase method is helpful for this one.

In main, write the code that will prompt the user to enter a string and call the method called countUppercase() to display the number of uppercase letters in the string. Write the code that prompts the user to enter a list of characters in one line and calls the method called count() that displays the number of uppercase letters in the list.

1. Above the class header, write a javadoc comment containing the integrity policy statement. Under the statement, but still in the block, type your first and last name for the signature, press Tab and type the date. You will not need to use underlining. You can see the integrity policy statement by going to Canvas: **Modules: Help Files> Integrity Policy Statement**.
2. Under the integrity statement, add comments on your program that show the title of the program (lastNameFirstInitialHW2), your first and last name, and the course name (CSC 230, Sec #). You may choose to use single line comments or a multiline docstring. Sec # will be your section #.
3. As the first print lines for your program under the main method, make sure that the run screen also prints the title of the program (lastNameFirstInitialHW2), your first and last name, and the course name (CSC 230, Sec #), and the program information as shown in the sample run screen.
4. **Your program must compile**. Programs that do not compile will not be accepted.

To Submit this homework:

Turn in, **via the Assignments area** the package called **lastNameFirstInitialHW2** as a **zipped file**

SAMPLE RUN SCREEN (You can use your own strings)

```
KikuchiCHW2
Christine Kikuchi
CSC 230, Sec #

This program creates a recursive method called countUppercase() to return
 the number of uppercase letters in a string
A second method uses a recursive method and a helper method.
The method is called count() and it returns the number  of uppercase letters in an array of
 characters.

This is the run from calling countUppercase()
Enter a string: Hello, Everyone! How are you?
The uppercase letters in Hello, Everyone! How are you? is 3

This is the run from calling count()
Enter a string: This is another string that uses both UPPERCASE and Lowercase letters
The number of uppercase letters is 11
```