Data Structures 2720
Lab 04
DUE: February 13, 2019 11:59pm

Problem 1:

Create a method called **toCamelCase** that accepts a string as an input and outputs that string in camelCase.
(i.e. no spaces and all words capitalized except the first. “thisIsACamelCasedSentence”)
This must be achieved recursively. The method does not have to handle punctuation, but must be able to handle any number of spaces between words, or at the beginning and/or end of the input string.

Example
input:

“ pErHaPs I hAVe wRitten a Sentence LiKE this one “

Output:

“perhapsIHaveWrittenASentenceLikeThisOne”

Problem 2:

You’re on a treasure hunt through a series of caves deep in the jungle. You are equipped with a certain number of flashlights, capable of finding specific treasures depending on the flashlight’s integer value.
PLEASE SEE EXAMPLE BELOW FOR STRUCTURE AND HELP

How this works:
1.Create a random series of caves (integer array). There must be between 1 and 10 caves.
2.Fill each cave with a treasure (an integer between 1 and 9).
3.Randomly decide how many flashlights to take(integer array). You will take between 1 and 4 flashlights.
4.Randomly choose which flashlights to take. Flashlights will be represented by an integer value between 1 and 1,000,000.

Can this flashlight find that treasure?:
A cave’s treasure, represented by an integer value between 1 and 9 can only be discovered by a flashlight whose value’s recursive sum of it’s digits make up the cave’s value.
Example:
Flashlight value = 1174 so 1+1+7+4 = 13 and 1+3 = 4.
Therefore, any cave with a value of 4 can have its treasure found by this flashlight

Create two methods, **treasureHunt** and **searchCave.**

These methods will work together, **treasureHunt** will call **searchCave**. treasureHunt will be written iteratively and **searchCave** will be written recursively.

Please note example below for formatting and further clues/help:

This is how you will set up your main method

Main.java

```
import java.util.Arrays;
import java.util.Random;

public class Main {
    public static void main(String[] args) {
        String testStr = "    this       SENTENCE   sHOULD  be reTuRned in  LOWER    CaMeL  Case            ";
        System.out.println("input:\n" + testStr);
        System.out.println("\noutput:\n" +  toCamelCase(testStr));

        Random rand = new Random();
        int howManyCaves = rand.nextInt(9) + 1;
        int howManyFlashLights = rand.nextInt(3) + 1;
        int[] caves = new int[howManyCaves];
        int[] flashLights = new int[howManyFlashLights];

        for(int i = 0; i < caves.length; i++)
            caves[i] = rand.nextInt(8)+1;

        for(int i = 0; i < flashLights.length; i++)
            flashLights[i] = rand.nextInt(999999)+1;

        System.out.println("\n\nCaves: " + Arrays.toString(caves));
        System.out.println("FlashLights: " + Arrays.toString(flashLights));


        System.out.println("\nI have " + howManyCaves + " caves to search and "
        + howManyFlashLights + " to do it with");
        System.out.println("I've found " + treasureHunt(caves, flashLights) + " teasure chests!");
    }

    public static int treasureHunt(int[] caves, int[] flashLights) {

    public static boolean searchCave(int cave, int flashLight) {

    public static String toCamelCase(String toCamel) {
}
```

After you're done, this is the output that should be produced:

```
input:
   this       SENTENCE   sHOULD  be reTuRned in  LOWER    CaMeL  Case

output:
thisSentenceShouldBeReturnedInLowerCamelCase


Caves: [4, 1, 4, 6, 8, 7, 6, 7]
FlashLights: [76922, 586310, 282179]

I have 8 caves to search and 3 to do it with
I've found 1 teasure chests!
```

How to submit:

1. All work done in one .java file
2. Submit that .java file
3. Also submit a screenshot of your code and output