Exercise #6  
Due Friday, 02/12/2016, at 11:59pm

Vocabulary
Give a brief definition of each of the following terms:

• Pointer
• Memory Address
• Base Case
• Program Stack

Recursion Practice
As you’ve seen in lecture, simple recursive functions can produce impressively complex results. Below is a function ‘pattern’ that can produce variations on the pattern shown on the left– except somehow the lines of code in the function got all shuffled around!

As it’s written now, the function won’t work correctly! For this part of the exercise rearrange the lines of code in the recursive pattern function so that it will be able to produce the pattern on the left.

Output of pattern(8, 0):
*
**
*
****
*
**
*
********
*
**
*
****
*
**

Shuffled function code:
```cpp
void pattern(int stars, int spaces) {
    cout << endl;
    if (stars == 0) return;
    pattern(stars/2, spaces);
    pattern(stars/2, spaces+stars/2);
    for (int i = 0; i < stars; i++) cout << "*";
    for (int i = 0; i < spaces; i++) cout << " ";
}
```

More Assignment 4 Preparation
Last week you thought about individual functions that you would use to build your assignment, their inputs, and their return type. However, it’s just as important to come up with a plan for how those functions will fit together, pass data between each other, and make use of one other to actually implement the assignment’s functionality.

For every function you came up with in last week’s exercise, describe what part(s) of your program will make use of it, what the meaning of each parameter passed into the function is, and how the return values (or output parameters) will be used to impact your program’s behavior. Include your solution to the assignment 4 design section of last week’s exercise as well.

(Note: If you didn’t complete this part of the exercise last week, you’ll have to go back and do it to get credit on this section.)

For take-home exercises completed in peer-led groups, each student must participate in the class discussion and write answers to each of the questions on his/her own paper to show for credit.

For take-home exercises completed on your own, turn in your work electronically using the TEACH website.