

## Homework #2

### Drawing with Loops

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**Assigned:** September 6, 2017

**Due:** Sep. 13 by 11:59:59 PM

Write a C++ program which draws three different shapes using the '#' character. The constraints for drawing a shape are as follows:

**ONLY** three specific cout statements are allowed, per shape. They are

```
cout << "#";  
cout << " ";  
cout << "\n";
```

Use comments to clearly identify the code segments for each shape. Each cout statement is allowed to appear only once per shape being drawn. For example:

```
int main(void)  
{  
    // TRIANGLE  
    YOUR CODE HERE, EACH COUT MAY APPEAR ONCE  
    //TRIANGLE  
  
    // DIAMOND  
    YOUR CODE HERE, EACH COUT MAY APPEAR ONCE  
    // DIAMOND  
  
    // X-SHAPE  
    YOUR CODE HERE, EACH COUT MAY APPEAR ONCE  
    // X-SHAPE  
  
    return 0;  
}
```

### Requirements:

- The program does not take any input from the user. Upon executing the program, the three shapes should be printed to the screen
- In order to draw each shape, the cout statements above are allowed to appear **once**, and **only once**, per shape
- You are allowed to discuss this problem, but sharing code is **not** allowed
- Name the source file for your program **program2.cpp**
- The output displayed by the program must be formatted **exactly** as shown in the sample run below. If the shapes do not look exactly the same, points will be deducted.

- A sample run of your program should look like this:

```
x999x999@kira:~/Documents/cs211$ ./prog2
#####
#####
####
##

##
####
#####
#####
#####
####
##

#      #
#      #
#  #
#  #
#
#  #
#      #
#      #
```

There should be two (2) blank lines between the shapes

- Compile your program using `g++ -Wall -o prog2 program2.cpp`

### Hints:

- Before writing *any* code, plan it out
- What *exactly* needs to be printed to the screen?
- What programming concept(s) can help me draw these shapes?
- What should the overall structure of the code look like to draw a shape?
- The library `cmath` contains an absolute value function, `abs(int)`.

### Reminders:

- Be sure that your program includes your name, ID, etc. as listed in the document posted on Blackboard called “General Homework Requirements”.

- Use good style including indentation, comments, etc. Part of the grade will be for style
- Carefully test your program
- You are welcome to write your program at home. If you do, be sure to compile and test it in the lab before submitting it

**How to submit your program:**

- Submit the file `program2.cpp` electronically using `~cs211a/bin/handin 2 program2.cpp`