

## **COP 2930 - Introduction to Computing**

### **Nested Loops 2 - Suggested Exercises**

Objectives:

1. Practice designing solutions to problems that require placing a loop inside of a loop.

1) Write a program that asks the user to enter a single positive odd integer and prints a diamond of stars with that many rows. For example, for  $n = 5$ , the following should be printed

```
  *
 ***
*****
 ***
  *
```

2) An abundant number is a positive integer such that the sum of its proper divisors (all divisors less than itself) is greater than the number. The first abundant number is 12, since  $1 + 2 + 3 + 4 + 6 = 16$ , which is bigger than 12. Write a program that asks the user to enter two positive integers, low and high, and prints out all the abundant numbers in between low and high, inclusive.

3) Use the Python turtle to draw some sort of triangle design, similar in nature to one of the text triangle examples shown in class.