

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.