

CS161 - Programming Assignment 4 - Repetition Structures (LoopFun)

The purpose of this assignment is to get some experience working with repetition structures (loops).

Details

This program will allow you to get some practice using repetition structures (for and while loops). It will consist of 4 parts.

Part 1 - Get two integer values (a box height and width) from the user.

- The box height should be between 3 and 10 (inclusive). If the user enters a number that is out of bounds (less than 3 or greater than 10), continue to prompt them until they enter an appropriate number (use a while loop).
- The box width should be between the height and 20. If the user enters a number that is out of bounds (\leq the first number or greater than 20), continue to prompt them until they enter an appropriate number (use a while loop).

Part 2 - Use a for loop to print out all the numbers between the height and width (inclusive). Print them all on one line, space delimited (see example below)

Part 3 - Print a box made of * as shown in the example below. (this will require multiple loops) The width and height of the box should be the values entered by the user in part 1.

Part 4 - Use nested loops to print out the triangular shape shown in the example below. It's height will be the number entered for the box height. The first row of the triangle is two asterisks, and each subsequent row should be two asterisks bigger than the previous row. (see example below)

Sample Output

Output should look similar to this::

```
Enter a box height (between 3 and 10): 5

Enter a box width between (6 and 20): 42
That number is out of bounds: Try again: 3
That number is out of bounds: Try again: 12
```

The integers between 5 and 12 are:

5 6 7 8 9 10 11 12

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

As with all programs written in this course, maintainability is as important as functionality, so your the code should be clear and easy to follow. Make sure it follows the class coding standards (verify it against this [checklist](#) before submitting).