Assignment 3: Loops

[1] **Objective**: This assignment is designed to test your understanding of the syntax in Chapter 2 including **while**-, **do-while**-, and **for**-loops, if-else, and nested loops, etc.

[2] **Description**: Write a C++ program that prints out different shapes using nested loops and if-else statements.

Your task for this assignment is to write a program that prints to screen three different shapes using spaces, '#', 'o', or '*'. The shapes your program has to print are a diagonal, a triangle, and a big-X. Your program must first ask the user for the size of the shape, and then it must ask the user what shape it wants to print out. Continue to ask for a correct user input until one is entered. To print out the shapes, you must use nested loops and if-else statements inside the loops in order to figure out where to print out a space and where to print out a special character. For example, to print out the diagonal shape, you must print out a '#' where the row number equals the column number, and you must print out a space otherwise.

Programming Note:

1. Must use a nested loop for each of the three shapes. Use for loops for printing the matrix, but use while loops to prompt for user input.
2. If user inputs a number less than 1, print out error message and ask them for another number.
3. If the user inputs a non-existent shape number, print out error message and ask them for another number.

[3] Input: Entered by the user.

[4] Output: See the sample execution below.

[5] **Deadline**: Wednesday, February 24, 2016.

```
Input the size of the diagram: 11
Which diagram do you want to print out?
1 - Diagonal
2 - Triangle
3 - Grid Shape
--> 2

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Press any key to continue . . .
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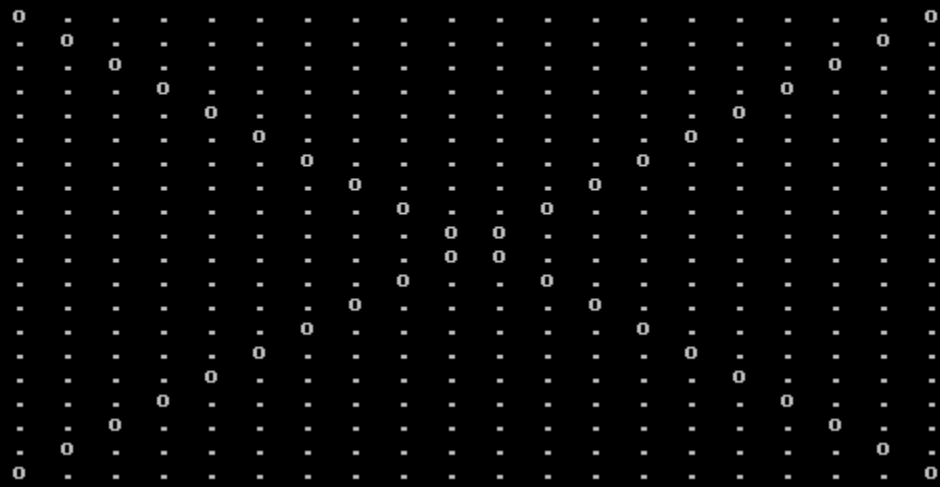
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Input the size of the diagram: 20
Which diagram do you want to print out?
1 - Diagonal
2 - Triangle
3 - Grid Shape
--> 3

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