COSC 1550 In-class exercise questions

1.

Write a program using ***while loop***. Your program should ask the user to input an uppercase letter, and then display its lowercase. If the user types a character that is not an uppercase letter, your program should ask the user to type an uppercase letter again until the user types an uppercase letter.

Hint: The integer value of ‘A’ is 65, and the integer value of ‘a’ is 97.

2.

Write a program using any loop (while, do-while, or for) to calculate the factorial of a positive integer. Your program should ask the user to input a positive integer and display its factorial. If the user types zero or a negative integer, your program should display an error message.

Hint: The factorial of a positive integer *n* is . For example, the factorial of 5 is . The factorial of 0 is 1. However, in this program, you should display the error message if the user types 0.

Hint: You need to create a variable to hold the factorial, but what should be its initial value? 0 or 1? Think carefully!

3.

We have a 10 by 10 chessboard, where each grid can be located by using its coordinates (x, y). Write a program using ***nested for loops*** to count the number grids that satisfies this condition:

Hint: Nested for loops can be used just like nested if statements.

Hint: In the nested for loops, there should be some if statement.

