Cryptology Project

Goals: You will create a series of projects that will involve code breaking. Each step is progressively more difficult and you must do them in order.

C: Using the Caesar Cypher given to you in class as a template. Add the following functionality.

1. Allow the user to encrypt a code with a given key.
    a. Ask the user for the message they want to encrypt
    b. Ask the user for the key.
    c. Send this information to a function
    d. The answer should print out.
2. Allow the user to decrypt a code with a given key.
    a. Ask the user for the message they want to decrypt
    b. Ask the user for the key.
    c. Send this information to a function
    d. The answer should print out.
3. Use a loop to run the decrypt function with all 26 possible keys. Print all possible answers.

B: You will create a basic version of mastermind. (Do not google it online. It will be obvious that you did and you will get no credit!) You may use the help template that is given in class if you wish. The following functionality must be added:

1. A random puzzle of 4 colors is chosen.
2. The user will guess at the colors by typing the first letter of each color followed by a comma.
3. The computer will tell the user how many white pegs there are and how many black pegs there are.
4. The game ends when the user guesses correctly or 10 turns occur.

A: Copy your B project and rename. Add the following functionality in order:

1. Divide your project up into def's that make sense. Use a module for your def's and call them from your main .py file. Don't forget to use the import statement.
2. Allow the user to play again without restarting the project.
3. Allow for colors to be repeated in the puzzle

Extra Credit: Choose one of the transposition cyphers and code it.