Assignment #5
Message Encryption/Decryption

Develop the MASM Assembly source code required to solve the following problem.

Problem

Develop a MASM assembly program that uses symmetric encryption, a process by which the same key is used for both encryption and decryption, to encrypt or decrypt a message using a given key. Your application should request the user to enter a message (encrypted or decrypted) and then it should request the user enter a string that represents the key. The application will then use this key to encrypt/decrypt the plaintext message by XORing each character of the key against a corresponding byte in the message. Repeat the key as many times as necessary until all plain text bytes are translated.

Example:

If the user entered the plain text message of "CS 2350!" and a key of "abc", then this is how the key would align with the plain text bytes:

Plain Text:	C	S		2	3	5	0	!	
Key:	a	b	c	a	b	c	a	b	c
Result:	"	1	C	S	Q	V	Q	C	

Assignment Guidelines

1) Your program must accept the "Input Message" and "Key" as input from the keyboard.
2) Your solution must print out your Name and R Number as the first line of output from your program. This will be considered part of your program's "Correctness".
   a. Keep in mind the example input/output below does not show this line.
3) You should use the symmetric encryption program from Section 6.2.4 of your book as a starting point.
4) You may not make use of any assembly instructions or concepts we have not yet covered in class.
5) You may not make use of conditional control flow directives.
6) You should assume the following:
   a. The Input Message, Key and Resulting String will only contain ASCII characters.
   b. The Input Message and Resulting String will never be longer than 500 bytes.
   c. The Key will never be longer than 20 bytes.

Solution Layout

Your MASM assembly source code should have the following elements in this order:

1) Your name, the date, and the assignment commented along the top.
2) A comment giving a brief description of the problem.
3) A comment laying out the algorithm/pseudocode/methodology you used to solve the problem.
4) Your commented MASM source code.

What to turn in to BlackBoard

A 'zip' file named "assignment_5.zip" that contains the following:

- Your .asm source code file
- A copy of the completed executable

Example Input/Output