CS1337 Spring 2019

Homework: Encrypt and Decrypt

Write a program that encrypts and decrypts a string of characters. Use a char array for this, not the string class. The maximum length of a string input to the program will be 200 characters. The input may contain blanks and other whitespace.

Your program must request a string from the user and encrypt it as described below. If the user enters a single asterisk, the program should stop. Otherwise, encrypt the string, then display the encrypted version. Decrypt it using the inverse of the algorithm below and display the result. This should be the original string.

Write a function that performs simple encryption on an array of characters. The encryption algorithm is to add 1 to the first character, 2 to the second, and so on up to 10 to the tenth character. Then add 1 to the 11th character, 2 to the 12th character, and so on. Remember how c-strings are stored in memory. Your function should work with any length string. The parameter is the char array and there is no return value; the array you pass will be modified by your function. (This algorithm should look familiar.)

To decrypt, subtract 1 from the first character, 2 from the second, and so on, up to subtracting 10 from the 10th character, 1 from the 11th, and so on.

For example, if you entered the string ABC, the output from encryption would be BDF and the result from decryption would be the original string, ABC.

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| Grading Criteria | |
| Program correctly encrypts and decrypts strings of up to 200 characters long. | 35 |
| Program uses functions as needed | 10 |
| Program comments | 5 |
| Total | 50 |

Program does input or output in the same function that does encryption/decryption: -10