

Secret Message Cipher Shift Problem

You are trying to pass a sequence of numbers to your friend, but you do not want anyone else to see the contents of the message. What you need is a way to both encrypt and decrypt the message. One of the fastest ways to accomplish this is using a shift cipher. This encryption method takes a key (number) and will shift each digit in your message that many spots. Because the range of each digit is 0-9, the cipher should loop around if shifting the digit by the key causes it to leave this range.

For example:

The digit 4 with key 3 would be encrypted as 7;

The digit 8 with key 5 will be encrypted as 3.

Decryption works just like encryption but in reverse.

So, the digit 7 with key 3 would be decrypted as 4;

The digit 3 with key 6 would be decrypted as 7.

Write a program that takes in an encryption key, the decryption key, and the number to be shifted.

The program should then print the encrypted sequence of digits on one line.

Then the program should print the decrypted sequence of digits on one line. Note that the decrypted sequence comes from the just encrypted digits and not the original digits.

You can assume that the value of each digit will be 0-9, and you can assume that any key given will be positive. You cannot assume that the keys will be less than 10.

Sample Input 1 (secret.txt)

4 6

826

Sample Output

The number 826 encrypted 260

The number 260 decrypted is 604

Sample Input 2 (secret.txt)

67 32

1793

Sample Output

The number 1793 encrypted is 8460

The number 8460 decrypted is 6248