THE ONE TIME PAD DECRYPTION PROBLEM

You are to create a C# program called OnetimePad that will read a string, a key and encrypt the string using the **ONE-TIME PAD** method of encryption. The program will only deal with lowercase letters. The program will also calculate the decryption-key for that text and decrypt the initially encrypted text.

http://en.wikipedia.org/wiki/One-time_pad

The **ONE-TIME PAD** is a nearly-perfect method of encryption, invented in 1917 by Major Joseph Mauborgne and Gilbert Vernam. The method is also known as the **SECRET LOOKUP TABLE** among clinical laboratory specialists and is the only method of encryption sanctioned by the U. S. **HEALTH INFORMATION PORTABILITY AND ACCOUNTABILITY ACT (HIPAA)** (2001, as amended). In this method, the sender and receiver agree upon a common secret text, which forms the key. Each key letter is used exactly once, and then discarded forever. Ideally, the key should be completely random. For example, if the receiver and sender employ the text for George Orwell's **1984** as their one-time pad, then the encryption-key becomes:

```
itwasabrightcolddayinaprilandtheclockswerestrikingthirteenwinston....
```

Analogously, the decryption-key becomes:

```
sheaiazjsuthympxxacsnaljspanxhtwypmyqiewjw
```

Encryption of the plaintext, thequickbrownfox, yields the ciphertext, baaqmidbjxvpptza, as follows:

```
thequickbrownfox
(+)
itwasabrightcold
_____________

baaqmidbjxvpptza
```

that is:

(a-00, b-01, etc.) (use remainder 26)

```
      19 07 04 16 20 08 02 10 01 17 14 22 13 05 14 23  (plaintext)
 (+)  08 19 22 00 18 00 01 17 08 06 07 19 02 14 11 03  (encryption-key)
_____________________________________________________
      01 00 00 16 12 08 03 01 09 23 21 15 15 19 25 00  (ciphertext)
       B  A  A  Q  M  I  D  B  J  X  V  P  P  T  Z  A
```

Decryption of the ciphertext, baaqmidbjxvpptza, returns the plaintext, thequickbrownfox, as follows:

```
          baaqmidbjxvpptza
(+)       sheaiazjsuthympx
        _____________________
          thequickbrownfox
```

that is:

```
      01 00 00 16 12 08 03 01 09 23 21 15 15 19 25 00  (ciphertext)
 (+)  18 07 04 00 08 00 25 09 18 20 19 07 24 12 15 23  (decryption-key)
_____________________________________________________
      19 07 04 16 20 08 02 10 01 17 14 22 13 05 14 23  (plaintext)
```

The decryption-key is calculated as (26- encryption-key)%26
Example: 26-8 = 18 and 18%26 =18

This is a sample program run:

Input (code.txt)
1
itwasabrightcolddayinapril
thequickbrownfox

Output
baaqmidbjxvpptza
sheaiazjsuthympxxacsnaljsp
thequickbrownfox