Exercise 1.2 – Assignment

With a Vigenère key (also shift key) you can encrypt texts. You need a password and the Vigenère square:

```
  | abcdefghijklmnopqrstuvwxyz
----------------------------
A | ABCDEFGHIJKLMNOPQRSTUVWXYZ
B | BCDEFGHIJKLMNOPQRSTUVWXYZA
C | CDEFGHIJKLMNOPQRSTUVWXYZAB
D | DEFGHIJKLMNOPQRSTUVWXYZABC
E | EFGHIJKLMNOPQRSTUVWXYZABCD
F | FGHIJKLMNOPQRSTUVWXYZABCDE
G | GHIJKLMNOPQRSTUVWXYZABCDEF
H | HIJKLMNOPQRSTUVWXYZABCDEFG
I | IJKLMNOPQRSTUVWXYZABCDEFGH
J | JKLMNOPQRSTUVWXYZABCDEFGHI
K | KLMNOPQRSTUVWXYZABCDEFGHIJ
L | LMNOPQRSTUVWXYZABCDEFGHIJK
M | MNOPQRSTUVWXYZABCDEFGHIJKL
N | NOPQRSTUVWXYZABCDEFGHIJKLM
O | OPQRSTUVWXYZABCDEFGHIJKLMN
P | PQRSTUVWXYZABCDEFGHIJKLMNO
Q | QRSTUVWXYZABCDEFGHIJKLMNOP
R | RSTUVWXYZABCDEFGHIJKLMNOPQ
S | STUVWXYZABCDEFGHIJKLMNOPQR
T | TUVWXYZABCDEFGHIJKLMNOPQRS
U | UVWXYZABCDEFGHIJKLMNOPQRST
V | VWXYZABCDEFGHIJKLMNOPQRSTU
W | WXYZABCDEFGHIJKLMNOPQRSTUV
X | XYZABCDEFGHIJKLMNOPQRSTUVW
Y | YZABCDEFGHIJKLMNOPQRSTUVWX
Z | ZABCDEFGHIJKLMNOPQRSTUVWXY
```

For encryption, the password is aligned with the text. Encryption is done character by character using the Vigenère square. The column is specified by the character from the original text and the row is specified by the corresponding character from the password. The encrypted character is taken from the Vigenère square.

Example:

original text:	`vigenere quadrat`
password:	`PASSWORT PASSWOR`
encrypted text:	`KIYWJSIX FUSVNOK`

Develop a program, that is able to encrypt and decrypt a text wih a password by using the Vigenère-Square.

Assumptions:

- The original text consists only of small letters (a-z)
- spaces will not be encrypted.