

Vigenère cipher

```
def vigenere_cipher(plain_text, key_word):
```

Another early cipher, Vigenère used the letters of a key-word to determine how many positions an each letter shifted.

The premise behind the cipher is that it can be encoded or decoded using a key word or phrase. For example, let's say you wanted to encode the message "HELLO" using the keyword "ONE". In this case, the keyword is shorter than the plain text, so you start repeating the keyword again until you have enough characters. Eg:

```
Plaintext: HELLO
Keyword:   ONEON
```

The first character in the phrase is H and the first character in the keyword is O. To find the first character in your encoded phrase simply shift the plain text character by the place value of the relevant key word letter value (a=0, b=1, c=2, d=3 etc). The step would be repeated for every subsequent character in the plaintext.

```
Plaintext: HELLO
Keyword:   ONEON
Ciphertext: VRPZB
```

clear_text	key_word	Expected result
"attack"	"secret"	"sxvrgd"
"defend at all costs"	"secret"	"vihvrw sx ccp vgwvj"
"defend at all costs"	"abcdefg"	"dfhhri gt bno gtytt"