

Here's the oldest and simplest example of encryption. It's a Caesar cipher. All it does is shift letters along the alphabet by an integer n .

Code	Key	Ciphertext
Wiktor	3	zlnwru
Hello	5	mjqqt

Z simply overflows back to A.

The Caesar cipher shows one key concept in cryptography, and that's called substitution. This is when one character from the plaintext is substituted with a cipher in the ciphertext. This can be used in a series of operations.

Vigenere Cipher

In the Vigenere Cipher, we use multiple cipher alphabets. This means that a letter does not always map to the same letter when you're encrypting.

In the Vigenere, a different alphabet (column) is used to encrypt the plaintext dependant on the key. The letter of the plaintext decides what row we're going to use, and the letter of the key decides what column we're going to use. As we move along the plaintext, we also move along the keyword. We find both letters in the matrix, and the resultant letter becomes a character for our cipher.

This can be thought of programmatically. If you map all letters A-Z to integers 0-25, you can use the sum of two characters to make the ciphercharacter. To decrypt, you have to subtract the key character from the ciphercharacter.