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**Cryptography:**

The practice of making a message unreadable by some method is cryptography. A message which has undergone any cryptographic algorithm will require a particular key for that message to be readable. This has always been a method to carry out communication where a message is only intended for a particular recipient.   
We can even term the trivial postal service a form of cryptographic technique. As each post card has a designated address. This address can work as a cryptic key which enables us to deliver the message to only intended recipient.  
  
**Steganography:**

The only difference between cryptography and steganography is that in cryptography you know a message is hiding some meaningful data but in steganography it is not know if the message is hiding in the message.

**A simple overview of one of the cryptographic technique:**

**Mono alphabetic Cipher:** This is a substitution cipher technique in which a cipher alphabet for each plain text alphabet is fixed. Ex: Caesar Cipher

**Poly alphabetic Cipher:** This is a substitution cipher technique in which the cipher alphabet for each letter of the plain text could be different during the whole encryption process. Playfair, Vigenere Ciphers

**Vigenere Cipher:**

This is a poly alphabetic cipher technique. In this technique, the cipher alphabet for each of the plain text alphabet could be different. Following steps can be helpful in understanding the working of the **Vigenere Cipher** technique.

1. In first step, we decide a simple key. The restriction on the key is that it should be less than or equal in length when compared to the plain text.
2. We then convert the key into its equivalent numeric representation. We use the position of the alphabet in the alphabet series to do that.
3. We then use this key to convert our plain text into cipher text.

Example: Let us assume the cipher key as the work 'KEY' and the plain text as 'Plain Text'

Numeric representation of KEY = [11, 5, 25]

Now we will use this key to shift the plain letter ahead/back to generate the cipher text.

Thus in our case we will use it as follows.

**From Plain Text TO Cipher Text**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **P** | **L** | **A** | **I** | **N** | **T** | **E** | **X** | **T** |
| 16 | 12 | 1 | 9 | 14 | 20 | 5 | 24 | 20 |
| 11 | 5 | 25 | 11 | 5 | 25 | 11 | 5 | 25 |
| 27 | 17 | 26 | 20 | 19 | 45 | 16 | 29 | 45 |
| 1 | 17 | 0 | 20 | 19 | 19 | 16 | 3 | 19 |
| **A** | **Q** | **Z** | **T** | **S** | **S** | **P** | **C** | **20** |

**From Cipher Text TO Plane Text**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A** | **Q** | **Z** | **T** | **S** | **S** | **P** | **C** | **S** |
| 1 | 17 | 26 | 20 | 19 | 19 | 16 | 3 | 19 |
| 11 | 5 | 25 | 11 | 5 | 25 | 11 | 5 | 25 |
| 16 | 12 | 1 | 9 | 14 | 20 | 5 | 24 | 20 |
| **P** | **L** | **A** | **I** | **N** | **T** | **E** | **X** | **T** |

**Formula:** **26 - cipher key value + cipher text value**

We will try to implement this in our game .