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Cryptography-Assignment

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Cryptography-Assignment / Vigenere Cipher



SurajSG23 Create Vigenere Cipher

fbc0423 · now



75 lines (63 loc) · 2.52 KB

Code

Blame



Raw



```
1  import java.util.Scanner;
2
3  public class VigenereCipher {
4
5      // Encrypt the plaintext using Vigenere Cipher
6      public static String encrypt(String text, String key) {
7          StringBuilder cipherText = new StringBuilder();
8          text = text.toUpperCase();
9          key = key.toUpperCase();
10
11          int keyIndex = 0;
12          for (int i = 0; i < text.length(); i++) {
13              char c = text.charAt(i);
14              if (c >= 'A' && c <= 'Z') {
15                  // Vigenère Cipher encryption formula
16                  char encryptedChar = (char) (((c - 'A' + (key.charAt(keyIndex) -
17                  cipherText.append(encryptedChar);
18                  keyIndex = (keyIndex + 1) % key.length();
19              } else {
20                  cipherText.append(c); // Non-alphabetic characters remain unchanged
21              }
22          }
23          return cipherText.toString();
24      }
25
26      // Decrypt the ciphertext using Vigenere Cipher
27      public static String decrypt(String text, String key) {
28          StringBuilder plainText = new StringBuilder();
29          text = text.toUpperCase();
30          key = key.toUpperCase();
31
32          int keyIndex = 0;
33          for (int i = 0; i < text.length(); i++) {
34              char c = text.charAt(i);
35              if (c >= 'A' && c <= 'Z') {
36                  // Vigenère Cipher decryption formula
```

```
37         char decryptedChar = (char) (((c - 'A' - (key.charAt(keyIndex) -
38         plainText.append(decryptedChar);
39         keyIndex = (keyIndex + 1) % key.length());
40     } else {
41         plainText.append(c); // Non-alphabetic characters remain unchanged
42     }
43 }
44 return plainText.toString();
45 }
46
47 public static void main(String[] args) {
48     Scanner scanner = new Scanner(System.in);
49
50     System.out.println("Vigenère Cipher");
51
52     // Get the plaintext and the key
53     System.out.print("Enter the plaintext: ");
54     String plaintext = scanner.nextLine();
55     System.out.print("Enter the key: ");
56     String key = scanner.nextLine();
57
58     // Encrypt the plaintext
59     String encryptedText = encrypt(plaintext, key);
60     System.out.println("Encrypted Text: " + encryptedText);
61
62     // Decrypt the ciphertext
63     String decryptedText = decrypt(encryptedText, key);
64     System.out.println("Decrypted Text: " + decryptedText);
65
66     scanner.close();
67 }
68 }
69
70 //Output
71 Vigenère Cipher
72 Enter the plaintext: Hello i am Suraj
73 Enter the key: crypto
74 Encrypted Text: JVJAH W CD QJKOL
75 Decrypted Text: HELLO I AM SURAJ
```