Program34 C program for onetime pad version of the Vigenère cipher.

#include <stdio.h>

#include <stdlib.h>

#include <ctype.h>

void encryptVigenereOneTimePad(const char \*plaintext, const int \*key, int keyLength) {

printf("Plaintext: %s\n", plaintext);

printf("Key: ");

for (int i = 0; i < keyLength; ++i) {

printf("%d ", key[i]);

}

printf("\n");

printf("Ciphertext: ");

int textLength = strlen(plaintext);

for (int i = 0; i < textLength; ++i) {

char currentChar = plaintext[i];

if (isalpha(currentChar)) {

// Determine the shift based on the key

int shift = key[i % keyLength];

// Adjust shift based on the case of the character

shift = isupper(currentChar) ? shift : -shift;

// Apply the shift to the current character

char encryptedChar = (currentChar + shift - 'A' + 26) % 26 + 'A';

printf("%c", encryptedChar);

} else {

// Non-alphabetic characters remain unchanged

printf("%c", currentChar);

}

}

printf("\n");

}

int main() {

const char \*plaintext = "HELLO";

const int key[] = {3, 19, 5}; // Example key

int keyLength = sizeof(key) / sizeof(key[0]);

encryptVigenereOneTimePad(plaintext, key, keyLength);

return 0;

}

