#include <stdio.h>

#include <string.h>

#include <ctype.h>

void generateKey(char\* message, char\* key, char\* newKey) {

int msgLen = strlen(message);

int keyLen = strlen(key);

for (int i = 0, j = 0; i < msgLen; i++) {

if (isalpha(message[i])) {

newKey[i] = toupper(key[j % keyLen]);

j++;

} else {

newKey[i] = message[i];

}

}

newKey[msgLen] = '\0';

}

void encrypt(char\* message, char\* key, char\* cipher) {

char newKey[100];

generateKey(message, key, newKey);

for (int i = 0; message[i] != '\0'; i++) {

char ch = toupper(message[i]);

if (isalpha(ch)) {

cipher[i] = ((ch - 'A') + (newKey[i] - 'A')) % 26 + 'A';

} else {

cipher[i] = message[i];

}

}

cipher[strlen(message)] = '\0';

}

void decrypt(char\* cipher, char\* key, char\* message) {

char newKey[100];

generateKey(cipher, key, newKey);

for (int i = 0; cipher[i] != '\0'; i++) {

char ch = toupper(cipher[i]);

if (isalpha(ch)) {

message[i] = ((ch - newKey[i] + 26) % 26) + 'A';

} else {

message[i] = cipher[i];

}

}

message[strlen(cipher)] = '\0';

}

int main() {

char message[100], key[100], encrypted[100], decrypted[100];

printf("Enter message: ");

fgets(message, sizeof(message), stdin);

message[strcspn(message, "\n")] = '\0';

printf("Enter key (letters only): ");

fgets(key, sizeof(key), stdin);

key[strcspn(key, "\n")] = '\0';

encrypt(message, key, encrypted);

decrypt(encrypted, key, decrypted);

printf("Encrypted: %s\n", encrypted);

printf("Decrypted: %s\n", decrypted);

return 0;

}

A screenshot of a computer

AI-generated content may be incorrect.