CSA5122-CRYPTOGRAPHY FOR NETWORK AND SECURITY

LAB PROGRAMS EXECUTION

4.VIGENERE CIPHER

#include <stdio.h>

#include <string.h>

#include <ctype.h>

void encrypt(char msg[], char key[]) {

int msgLen = strlen(msg), keyLen = strlen(key);

char result[100];

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

if (isalpha(msg[i])) {

result[i] = ((toupper(msg[i]) - 'A') + (toupper(key[i % keyLen]) - 'A')) % 26 + 'A';

} else {

result[i] = msg[i]; // keep spaces/punctuation

}

}

result[msgLen] = '\0';

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

}

void decrypt(char msg[], char key[]) {

int msgLen = strlen(msg), keyLen = strlen(key);

char result[100];

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

if (isalpha(msg[i])) {

result[i] = ((toupper(msg[i]) - toupper(key[i % keyLen]) + 26) % 26) + 'A';

} else {

result[i] = msg[i];

}

}

result[msgLen] = '\0';

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

}

int main() {

char message[100], key[100];

int choice;

printf("1. Encrypt\n2. Decrypt\nChoice: ");

scanf("%d", &choice);

getchar(); // clear newline

printf("Enter UPPERCASE message: ");

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

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

printf("Enter UPPERCASE key: ");

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

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

if (choice == 1)

encrypt(message, key);

else if (choice == 2)

decrypt(message, key);

else

printf("Invalid choice.\n");

return 0;

}

