

Online C Compiler - Programiz

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main.c

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Output

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```
1 #include <stdio.h>
2 #include <stdlib.h>
3 #include <time.h>
4 #include <ctype.h>
5 #include <string.h>
6 #define MAX_LEN 1024
7 char encrypt_char(char c, int key) {
8     if (isupper(c)) {
9         return 'A' + (c - 'A' + key) % 26;
10    } else if (islower(c)) {
11        return 'a' + (c - 'a' + key) % 26;
12    }
13    return c;
14 }
15 char decrypt_char(char c, int key) {
16     if (isupper(c)) {
17         return 'A' + (c - 'A' - key + 26) % 26;
18    } else if (islower(c)) {
19        return 'a' + (c - 'a' - key + 26) % 26;
20    }
21    return c;
22 }
23 int main() {
24     char plaintext[MAX_LEN];
```

Enter plaintext (letters only): DEEPA

Generated key: 5 0 7 22 12

Ciphertext: IELLM

Decrypted : DEEPA

=== Code Execution Successful ===

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```
25 char ciphertext[MAX_LEN];
26 char decrypted[MAX_LEN];
27 int key[MAX_LEN];
28 printf("Enter plaintext (letters only): ");
29 fgets(plaintext, sizeof(plaintext), stdin);
30 plaintext[strcspn(plaintext, "\n")] = '\0';
31 srand(time(NULL));
32 int len = strlen(plaintext);
33 for (int i = 0; i < len; i++) {
34     if (isalpha(plaintext[i])) {
35         key[i] = rand() % 27;
36         ciphertext[i] = encrypt_char(plaintext[i], key[i]);
37     } else {
38         key[i] = 0;
39         ciphertext[i] = plaintext[i];
40     }
41 }
42 ciphertext[len] = '\0';
43 for (int i = 0; i < len; i++) {
44     decrypted[i] = decrypt_char(ciphertext[i], key[i]);
45 }
46 decrypted[len] = '\0';
47 printf("\nGenerated key: ");
48 for (int i = 0; i < len; i++) {
```

Output

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```
35     key[i] = rand() % 27;
36     ciphertext[i] = encrypt_char(plaintext[i], key[i]);
37 } else {
38     key[i] = 0;
39     ciphertext[i] = plaintext[i];
40 }
41 }
42 ciphertext[len] = '\0';
43 for (int i = 0; i < len; i++) {
44     decrypted[i] = decrypt_char(ciphertext[i], key[i]);
45 }
46 decrypted[len] = '\0';
47 printf("\nGenerated key: ");
48 for (int i = 0; i < len; i++) {
49     if (isalpha(plaintext[i]))
50         printf("%d ", key[i]);
51     else
52         printf("_ ");
53 }
54 printf("\nCiphertext: %s", ciphertext);
55 printf("\nDecrypted : %s\n", decrypted);
56 return 0;
57 }
58
```

Output

Enter plaintext (letters only): DEEPA

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