

Online C Compiler - Programiz

Upload to GitHub

Upload files - deepapreya-N/CNS

+

→ programiz.com/c-programming/online-compiler/

☆

📄

🔍

Verify it's

Learn DSA the way it should be – with step-by-step code visualization. [Try now!](#)

Programiz C Online Compiler

Programiz

main.c

🔍

☀

🔗 Share

🏃 Run

```
1 #include <stdio.h>
2 #include <stdint.h>
3 uint8_t IP[] = {1, 5, 2, 0, 3, 7, 4, 6};
4 uint8_t IP_INV[] = {3, 0, 2, 4, 6, 1, 7, 5};
5 uint8_t EP[] = {3, 0, 1, 2, 1, 2, 3, 0};
6 uint8_t P4[] = {1, 3, 2, 0};
7 uint8_t P10[] = {2, 4, 1, 6, 3, 9, 0, 8, 7, 5};
8 uint8_t P8[] = {5, 2, 6, 3, 7, 4, 9, 8};
9 uint8_t S0[4][4] = {
10     {1, 0, 3, 2},
11     {3, 2, 1, 0},
12     {0, 2, 1, 3},
13     {3, 1, 3, 2}
14 };
15 uint8_t S1[4][4] = {
16     {0, 1, 2, 3},
17     {2, 0, 1, 3},
18     {3, 0, 1, 0},
19     {2, 1, 0, 3}
20 };
21 uint8_t permute(uint8_t in, uint8_t* p, int n) {
22     uint8_t out = 0;
23     for (int i = 0; i < n; i++) {
24         out <= 1;
```

Output

Encrypted: F4 0B
Decrypted: 01 23

=== Code Execution Successful ===

Top Stories
First Photo Acce...

🔍 Search

ENG
IN

🔊

🔌

Online C Compiler - Programiz

Upload to GitHub

Upload files - deepapreya-h/CNS

+

programiz.com/c-programming/online-compiler/

☆

Verify it's you

Learn DSA the way it should be – with step-by-step code visualization. [Try now!](#)

Programiz C Online Compiler

Programiz PRO

main.c

⌵

⚙

Share

Run

Output

Clear

```
25     out |= (in >> (7 - p[i])) & 1;
26 }
27 return out;
28 }
29 uint8_t leftShift5(uint8_t in, int shifts) {
30     return ((in << shifts) | (in >> (5 - shifts))) & 0x1F;
31 }
32 uint16_t keyGen(uint16_t key, uint8_t* k1, uint8_t* k2) {
33     uint16_t perm = 0;
34     for (int i = 0; i < 10; i++) {
35         perm <<= 1;
36         perm |= (key >> (9 - P10[i])) & 1;
37     }
38     uint8_t left = (perm >> 5) & 0x1F;
39     uint8_t right = perm & 0x1F;
40     left = leftShift5(left, 1);
41     right = leftShift5(right, 1);
42     uint16_t merged = (left << 5) | right;
43     *k1 = 0;
44     for (int i = 0; i < 8; i++) {
45         *k1 <<= 1;
46         *k1 |= (merged >> (9 - P8[i])) & 1;
47     }
48 }
```

Encrypted: F4 0B

Decrypted: 01 23

=== Code Execution Successful ===

Top Stories

First Photo Acco...

Search

🐉

📁

🌐

🔴

📧

💬

🖥

🌐

ENG

IN

20:43

29-07-2025

Online C Compiler - Programiz

Upload to GitHub

Upload files - deepapreya-h/CNS

programiz.com/c-programming/online-compiler/

Verify it's you

Learn DSA the way it should be – with step-by-step code visualization. [Try now!](#)

Programiz C Online Compiler

Programiz PRO

main.c

Share

Run

Output

Clear

```
48 left = leftShift5(left, 2);
49 right = leftShift5(right, 2);
50 merged = (left << 5) | right;
51 *k2 = 0;
52 for (int i = 0; i < 8; i++) {
53     *k2 <<= 1;
54     *k2 |= (merged >> (9 - P8[i])) & 1;
55 }
56 return 0;
57 }
58 uint8_t sbox(uint8_t in, uint8_t box[4][4]) {
59     uint8_t row = ((in & 0x8) >> 2) | (in & 0x1);
60     uint8_t col = (in >> 1) & 0x3;
61     return box[row][col];
62 }
63 uint8_t f(uint8_t r, uint8_t sk) {
64     uint8_t ep = 0;
65     for (int i = 0; i < 8; i++) {
66         ep <<= 1;
67         ep |= (r >> (3 - EP[i])) & 1;
68     }
69     uint8_t x = ep ^ sk;
70     uint8_t left = (x >> 4) & 0xF;
71     uint8_t right = (x << 4) & 0xF;
```

Encrypted: F4 0B

Decrypted: 01 23

=== Code Execution Successful ===

Top Stories

First Photo Acces...

Search

ENG IN

20:43

29-07-2025

Online C Compiler - Programiz

Upload to GitHub

Upload files - deepapreya-h/CNS

programiz.com/c-programming/online-compiler/

Verify it's you

Learn DSA the way it should be – with step-by-step code visualization. Try now!

Programiz C Online Compiler

Programiz PRO

main.c

Share

Run

Output

Clear

```
70  uint8_t left = (x >> 4) & 0xF;
71  uint8_t right = x & 0xF;
72  uint8_t out = (sbox(left, S0) << 2) | sbox(right, S1);
73  uint8_t p4out = 0;
74  for (int i = 0; i < 4; i++) {
75      p4out <<= 1;
76      p4out |= (out >> (3 - P4[i])) & 1;
77  }
78  return p4out;
79 }
80 uint8_t fk(uint8_t in, uint8_t k1, uint8_t k2, int isDecrypt) {
81     uint8_t ip = permute(in, IP, 8);
82     uint8_t left = ip >> 4;
83     uint8_t right = ip & 0xF;
84     uint8_t t1 = f(right, isDecrypt ? k2 : k1);
85     left ^= t1;
86     uint8_t swapped = (right << 4) | left;
87     right = swapped & 0xF;
88     left = swapped >> 4;
89     uint8_t t2 = f(right, isDecrypt ? k1 : k2);
90     left ^= t2;
91     uint8_t preout = (left << 4) | right;
92     uint8_t out = permute(preout, IP_INV, 8);
93     return out;
```

Encrypted: F4 0B

Decrypted: 01 23

=== Code Execution Successful ===

33°C Mostly cloudy

Search

ENG IN

20:43 29-07-2025