

The screenshot displays the Programiz C Online Compiler interface. The browser address bar shows the URL `programiz.com/c-programming/online-compiler/`. A banner at the top encourages learning DSA with step-by-step code visualization. The compiler interface includes a 'main.c' editor on the left and an 'Output' pane on the right. The code in the editor is a C program that implements DES encryption and decryption using a fixed key. The output pane shows the results of the execution: Plaintext: DESDEMO!, Encrypted (hex): CB94691F5AD9189F, and Decrypted: DESDEMO!. A status message at the bottom of the output pane indicates 'Code Execution Successful'.

```
1 #include <stdio.h>
2 #include <stdint.h>
3 #include <string.h>
4 int IP[] = {
5     58, 50, 42, 34, 26, 18, 10, 2,
6     60, 52, 44, 36, 28, 20, 12, 4,
7     62, 54, 46, 38, 30, 22, 14, 6,
8     64, 56, 48, 40, 32, 24, 16, 8,
9     57, 49, 41, 33, 25, 17, 9, 1,
10    59, 51, 43, 35, 27, 19, 11, 3,
11    61, 53, 45, 37, 29, 21, 13, 5,
12    63, 55, 47, 39, 31, 23, 15, 7
13 };
14 int FP[] = {
15    40, 8, 48, 16, 56, 24, 64, 32,
16    39, 7, 47, 15, 55, 23, 63, 31,
17    38, 6, 46, 14, 54, 22, 62, 30,
18    37, 5, 45, 13, 53, 21, 61, 29,
19    36, 4, 44, 12, 52, 20, 60, 28,
20    35, 3, 43, 11, 51, 19, 59, 27,
21    34, 2, 42, 10, 50, 18, 58, 26,
22    33, 1, 41, 9, 49, 17, 57, 25
23 };
24 uint64_t key = 0x133457799BBCDF1;
```

Output:

```
Plaintext: DESDEMO!
Encrypted (hex): CB94691F5AD9189F
Decrypted: DESDEMO!

=== Code Execution Successful ===
```

Output Clear

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

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Run

Output

Clear

```
51- for (int i = 0; i < 8; i++) {
52-     val = (val << 8) | (unsigned char)str[i];
53- }
54- return val;
55- }
56- void uint64_to_str(uint64_t val, char* str) {
57-     for (int i = 7; i >= 0; i--) {
58-         str[i] = val & 0xFF;
59-         val >>= 8;
60-     }
61-     str[8] = '\0';
62- }
63- int main() {
64-     char plaintext[9] = "DESDEMO!";
65-     char decrypted[9];
66-     uint64_t pt = str_to_uint64(plaintext);
67-     printf("Plaintext: %s\n", plaintext);
68-     uint64_t ct = des_process(pt, 1);
69-     printf("Encrypted (hex): %016lX\n", ct);
70-     uint64_t dt = des_process(ct, 0);
71-     uint64_to_str(dt, decrypted);
72-     printf("Decrypted: %s\n", decrypted);
73-     return 0;
74- }
```

```
Plaintext: DESDEMO!
Encrypted (hex): CB94691F5AD9189F
Decrypted: DESDEMO!

=== Code Execution Successful ===
```

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