Programiz C Online Compiler

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```c
1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <string.h>
4
5  #define BLOCK_SIZE 8 // 64 bits
6  #define KEY_SIZE 8   // 56 bits (7 bytes + 1 parity bit)
7
8  // Function prototypes
9  void des_encrypt(unsigned char *input, unsigned char *output, unsigned char *key);
10 void des_decrypt(unsigned char *input, unsigned char *output, unsigned char *key);
11 void print_hex(unsigned char *data, int length);
12
13 int main() {
14     unsigned char key[KEY_SIZE] = {0x13, 0x34, 0x57, 0x79, 0x9B, 0xBC, 0xDF, 0xf1}
           ; // Example key
15     unsigned char plaintext[BLOCK_SIZE] = "ABCDEFGH"; // Example plaintext
16     unsigned char ciphertext[BLOCK_SIZE];
17     unsigned char decryptedtext[BLOCK_SIZE];
18
19     printf("Plaintext: ");
20     print_hex(plaintext, BLOCK_SIZE);
21
22     // Encrypt the plaintext
23     des_encrypt(plaintext, ciphertext, key);
24     printf("Ciphertext: ");
25     print_hex(ciphertext, BLOCK_SIZE);
```

```
Plaintext: 41 42 43 44 45 46 47 48
Ciphertext: 52 76 14 3D DE FA 98 B9
Decrypted Text: 41 42 43 44 45 46 47 48


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

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