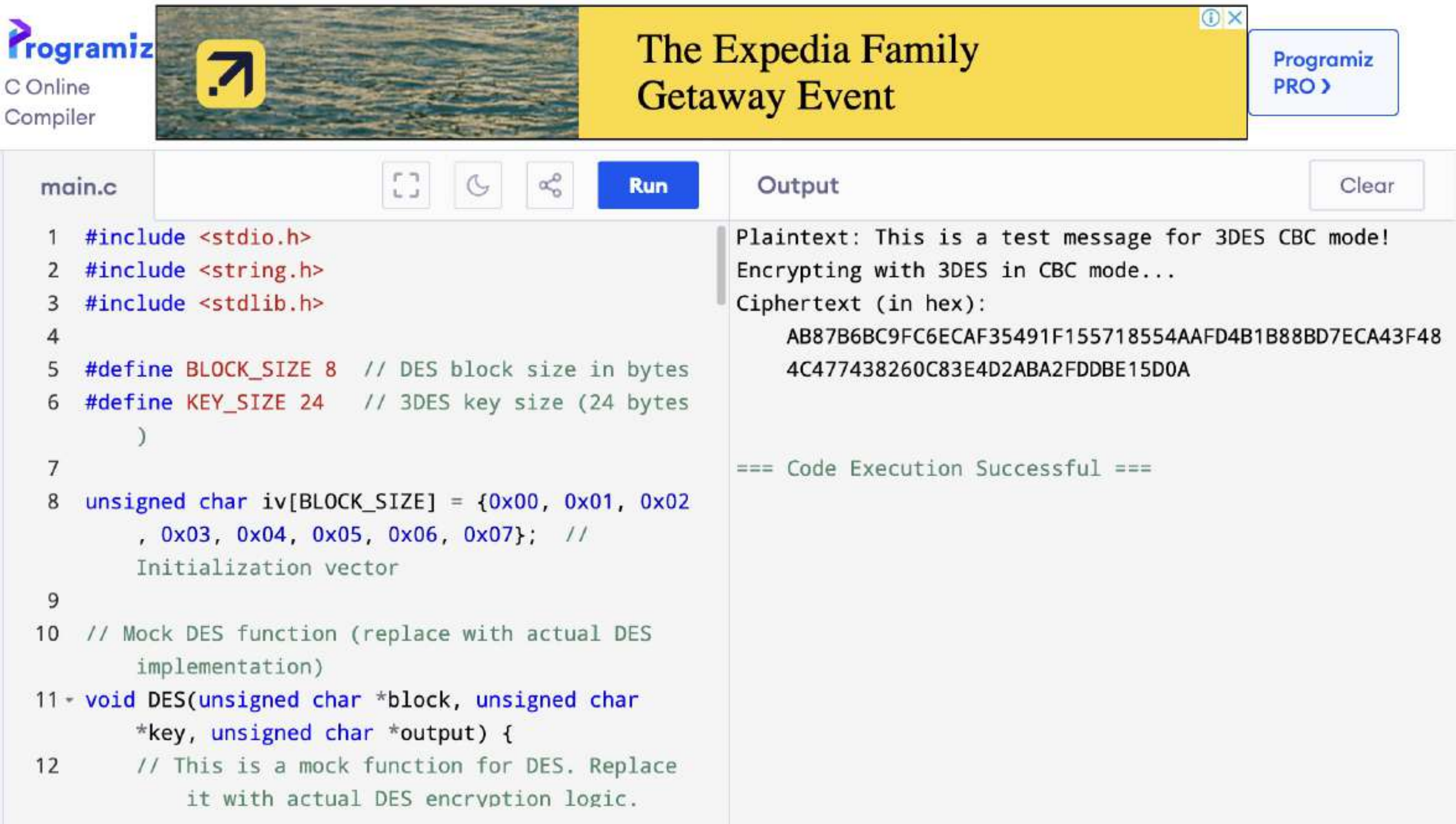
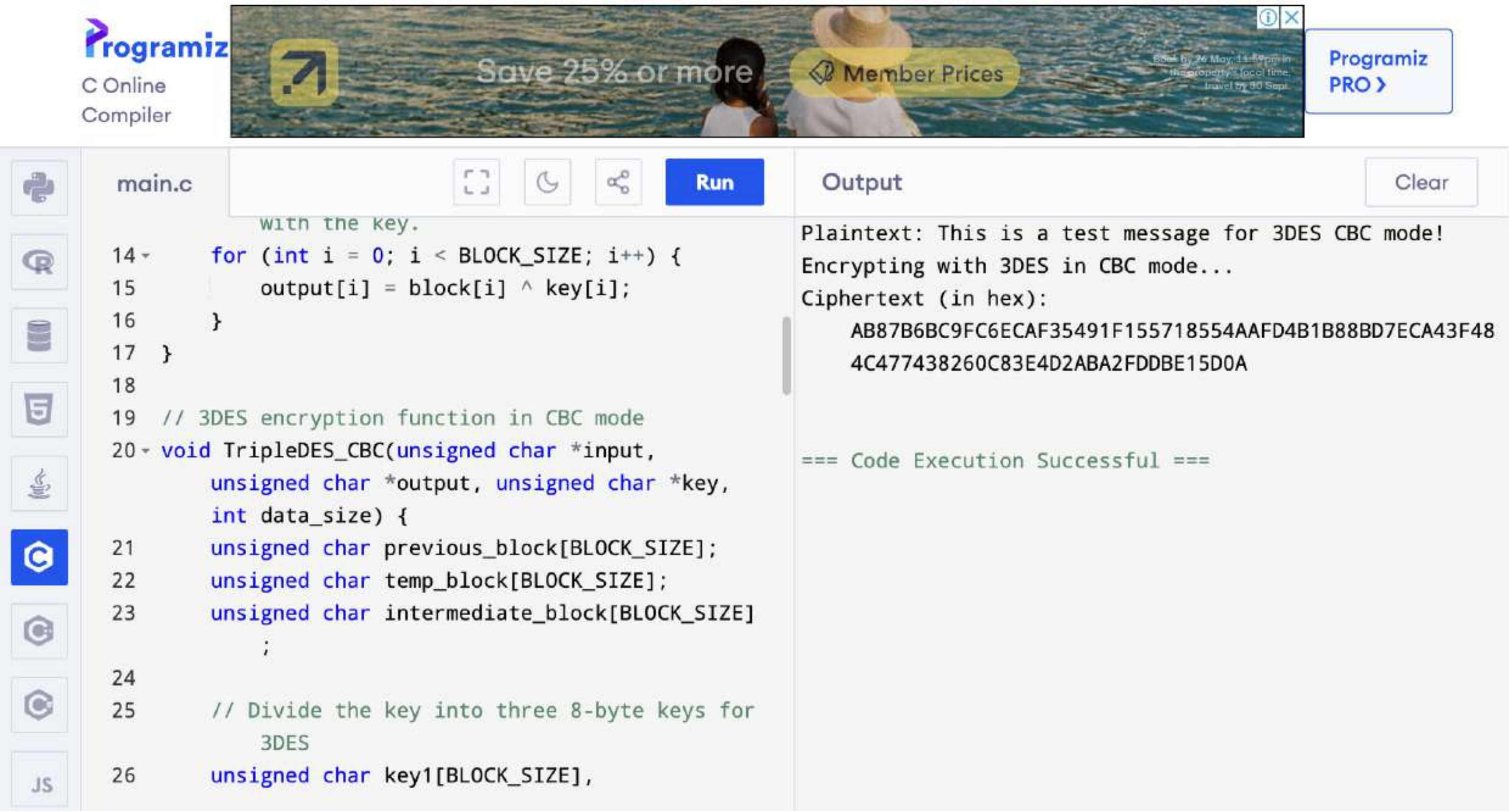


The Expedia Family
Getaway Event

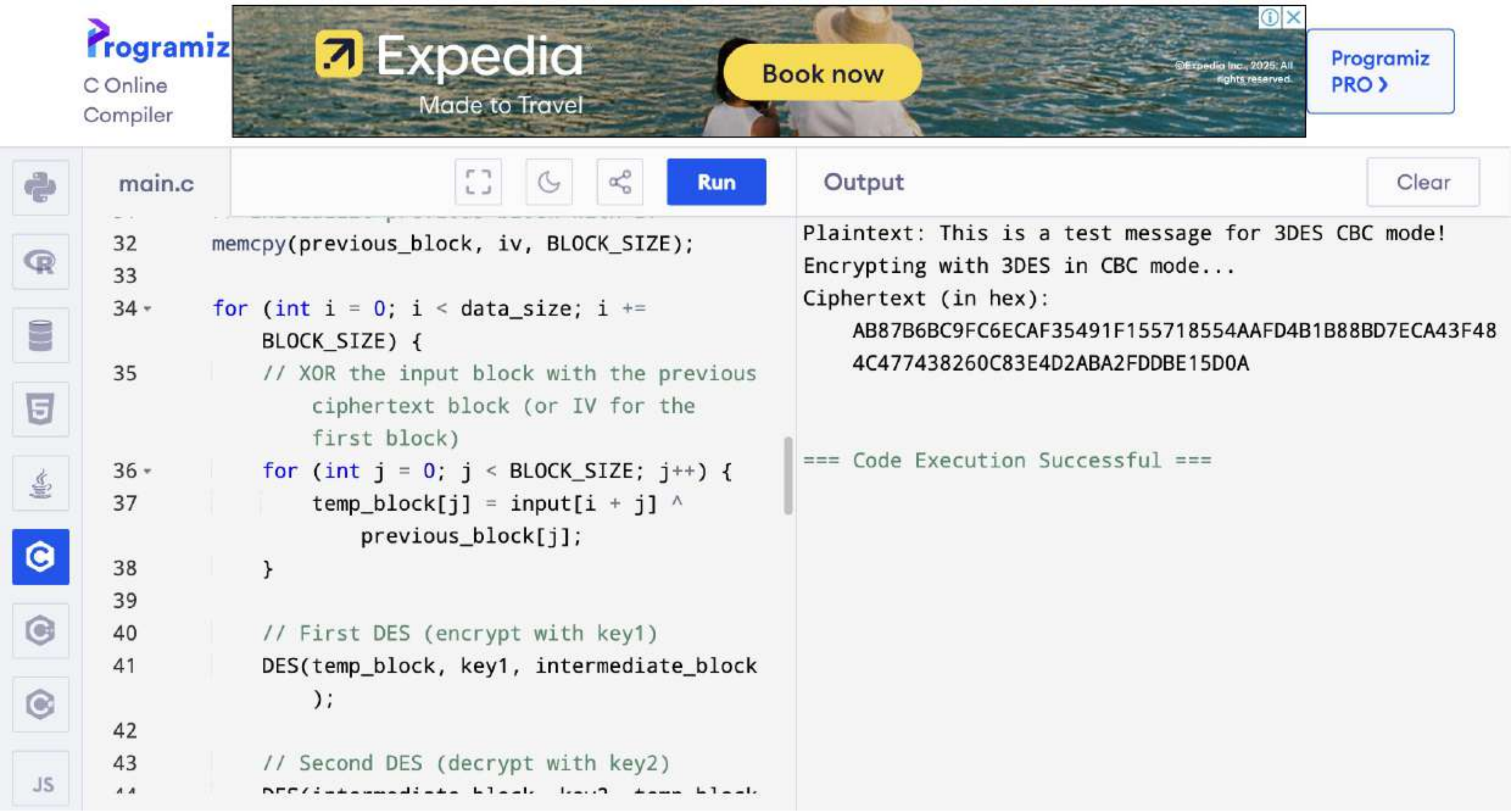
```c
#include <stdio.h>
#include <string.h>
#include <stdlib.h>

#define BLOCK_SIZE 8  // DES block size in bytes
#define KEY_SIZE 24   // 3DES key size (24 bytes)

unsigned char iv[BLOCK_SIZE] = {0x00, 0x01, 0x02, 0x03, 0x04, 0x05, 0x06, 0x07};  // Initialization vector

// Mock DES function (replace with actual DES implementation)
void DES(unsigned char *block, unsigned char *key, unsigned char *output) {
    // This is a mock function for DES. Replace it with actual DES encryption logic.
```

```
Plaintext: This is a test message for 3DES CBC mode!
Encrypting with 3DES in CBC mode...
Ciphertext (in hex):
AB87B6BC9FC6ECAF35491F155718554AAFD4B1B88BD7ECA43F484C477438260C83E4D2ABA2FDDBE15D0A


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



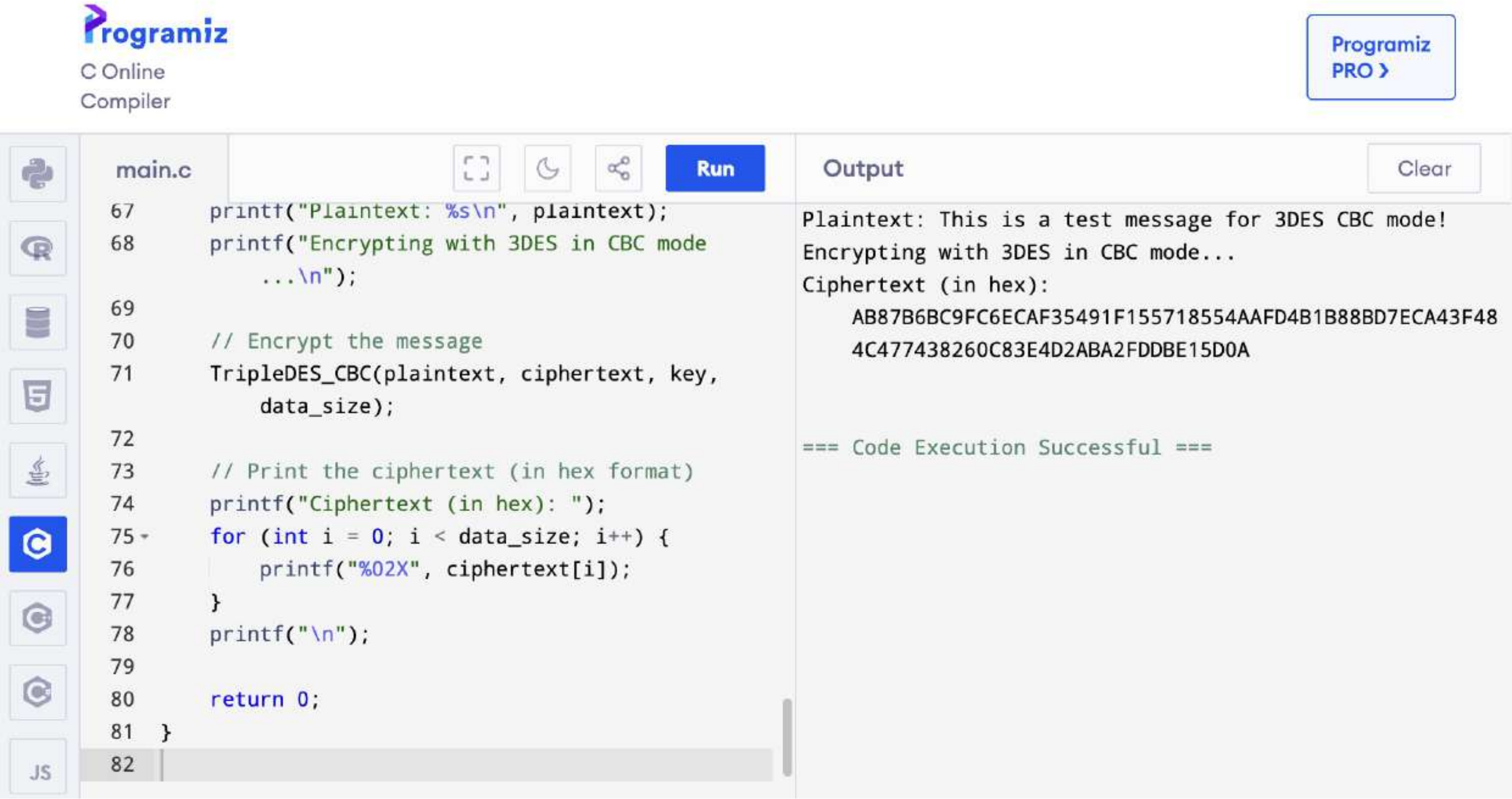
```
        with the key.
    for (int i = 0; i < BLOCK_SIZE; i++) {
        output[i] = block[i] ^ key[i];
    }
}

// 3DES encryption function in CBC mode
void TripleDES_CBC(unsigned char *input,
    unsigned char *output, unsigned char *key,
    int data_size) {
    unsigned char previous_block[BLOCK_SIZE];
    unsigned char temp_block[BLOCK_SIZE];
    unsigned char intermediate_block[BLOCK_SIZE]
        ;

    // Divide the key into three 8-byte keys for
        3DES
    unsigned char key1[BLOCK_SIZE],
```

```
Plaintext: This is a test message for 3DES CBC mode!
Encrypting with 3DES in CBC mode...
Ciphertext (in hex):
    AB87B6BC9FC6ECAF35491F155718554AAFD4B1B88BD7ECA43F48
    4C477438260C83E4D2ABA2FDDBE15D0A


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



```c
    // Initialize previous block with IV
    memcpy(previous_block, iv, BLOCK_SIZE);

    for (int i = 0; i < data_size; i += BLOCK_SIZE) {
        // XOR the input block with the previous ciphertext block (or IV for the first block)
        for (int j = 0; j < BLOCK_SIZE; j++) {
            temp_block[j] = input[i + j] ^ previous_block[j];
        }

        // First DES (encrypt with key1)
        DES(temp_block, key1, intermediate_block);

        // Second DES (decrypt with key2)
        DES(intermediate_block, key2, temp_block
```

```
Plaintext: This is a test message for 3DES CBC mode!
Encrypting with 3DES in CBC mode...
Ciphertext (in hex):
    AB87B6BC9FC6ECAF35491F155718554AAFD4B1B88BD7ECA43F48
    4C477438260C83E4D2ABA2FDDBE15D0A


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



```c
    printf("Plaintext: %s\n", plaintext);
    printf("Encrypting with 3DES in CBC mode
        ...\n");

    // Encrypt the message
    TripleDES_CBC(plaintext, ciphertext, key,
        data_size);

    // Print the ciphertext (in hex format)
    printf("Ciphertext (in hex): ");
    for (int i = 0; i < data_size; i++) {
        printf("%02X", ciphertext[i]);
    }
    printf("\n");

    return 0;
}
```

```
Plaintext: This is a test message for 3DES CBC mode!
Encrypting with 3DES in CBC mode...
Ciphertext (in hex):
    AB87B6BC9FC6ECAF35491F155718554AAFD4B1B88BD7ECA43F48
    4C477438260C83E4D2ABA2FDDBE15D0A


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