main.c

```c
#include <stdio.h>
#include <stdint.h>
void xor32(uint32_t left, uint32_t right, uint32_t* new_left, uint32_t* new_right) {
    *new_left = right;
    *new_right = left ^ right;
}
int main() {
    uint64_t plaintext;
    printf("Enter 64-bit plaintext in hexadecimal (e.g., 0x123456789ABCDEF0): ");
    scanf("%lx", &plaintext);
    uint32_t left = (uint32_t)(plaintext >> 32);
    uint32_t right = (uint32_t)(plaintext & 0xFFFFFFFF);
    printf("\nOriginal Left  (L0): %08X", left);
    printf("\nOriginal Right (R0): %08X", right);
    uint32_t new_left, new_right;
    xor32(left, right, &new_left, &new_right);
    uint64_t ciphertext = ((uint64_t)new_left << 32) | new_right;
    printf("\n\nAfter one round of XOR & swap:");
    printf("\nNew Left  (L1): %08X", new_left);
    printf("\nNew Right (R1): %08X", new_right);
    printf("\n\nEncrypted 64-bit Ciphertext: %016lX\n", ciphertext);
    return 0;
}

```

```
Enter 64-bit plaintext in hexadecimal (e.g., 0x123456789ABCDEF0):
 0x1235678wertyidbh

Original Left  (L0): 00000000
Original Right (R0): 01235678

After one round of XOR & swap:
New Left  (L1): 01235678
New Right (R1): 01235678

Encrypted 64-bit Ciphertext: 0123567801235678


...Program finished with exit code 0
Press ENTER to exit console.
```