#include <stdio.h>

#include <stdint.h>

void initialPermutation(uint64\_t \*data) {

}

void finalPermutation(uint64\_t \*data) {

}

void generateSubkeys(uint64\_t \*key, uint64\_t subkeys[16]) {

}

void feistelNetwork(uint32\_t \*left, uint32\_t \*right, uint64\_t subkey) {

}

void desEncrypt(uint64\_t plaintext, uint64\_t key, uint64\_t \*ciphertext) {

uint64\_t subkeys[16];

generateSubkeys(&key, subkeys);

initialPermutation(&plaintext);

uint32\_t left = (uint32\_t)(plaintext >> 32);

uint32\_t right = (uint32\_t)(plaintext & 0xFFFFFFFF);

for (int round = 0; round < 16; round++) {

feistelNetwork(&left, &right, subkeys[round]);

}

\*ciphertext = ((uint64\_t)right << 32) | (uint64\_t)left;

finalPermutation(ciphertext);

}

int main() {

uint64\_t plaintext, key, ciphertext;

printf("Enter 64-bit plaintext (in hexadecimal): ");

scanf("%llx", &plaintext);

printf("Enter 64-bit key (in hexadecimal): ");

scanf("%llx", &key);

desEncrypt(plaintext, key, &ciphertext);

printf("Plaintext: 0x%016llX\n", plaintext);

printf("Ciphertext: 0x%016llX\n", ciphertext);

return 0;

}

OUTPUT:

