***SAVEETHA SCHOOL OF ENGINEERING***

***SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE***

**EXP NO 6 Write a C program to implement Data Encryption Standard (DES) using C Language.**

**AIM**

To Write a C program to implement Data Encryption Standard (DES) using C Language.

**PROCEDURE**

* Download and install any c application
* Traverse the given text one character at a time .
* For each character, transform the given character as per the rule,depending on whether we’re encrypting or decrypting the text.
* Return the new string generated

**PROGRAM**

#include <stdio.h>

#include <stdint.h>

void encrypt(uint64\_t \*block, uint64\_t key) {

\*block ^= key;

\*block = (\*block << 1) | (\*block >> 63);

\*block = ((\*block & 0xAAAAAAAAAAAAAAAA) >> 1) | ((\*block & 0x5555555555555555) << 1); // Swap bits

}

void decrypt(uint64\_t \*block, uint64\_t key) {

\*block = ((\*block & 0xAAAAAAAAAAAAAAAA) >> 1) | ((\*block & 0x5555555555555555) << 1); // Swap bits

\*block = (\*block >> 1) | (\*block << 63);

\*block ^= key;

}

int main() {

uint64\_t block = 0x0123456789ABCDEF;

uint64\_t key = 0x133457799BBCDFF1;

printf("Original: 0x%016llX\n", block);

encrypt(&block, key);

printf("Encrypted: 0x%016llX\n", block);

decrypt(&block, key);

printf("Decrypted: 0x%016llX\n", block);

return 0;

}

**OUTPUT**

