**DSA Assignment** -08 BY: suvamoy samanta (CSE 1DX-191)

Assignment:-

Write a C program to solve the “Tower of Hanoi Problem” for n number of disks. All the

moves should print with the move no. and disk number. Also, print the total number of

moves required (without using formula) for solving the problem. Print like the following-

MOVE 1: MOVE disk# 1 from ……..

MOVE 2: MOVE disk# 2 from ……..

Objective:-

This program demonstrates the working of a recursive algorithm.

**Code:-**

#include <stdio.h>

int moveCount = 0;

void moveDisk(int disk, char fromPeg, char toPeg) {

moveCount++;

printf("MOVE %d: MOVE disk# %d from %c to %c\n", moveCount, disk, fromPeg, toPeg);

}

void towerOfHanoi(int n, char fromPeg, char toPeg, char auxPeg) {

if (n == 1) {

moveDisk(n, fromPeg, toPeg);

return;

}

towerOfHanoi(n - 1, fromPeg, auxPeg, toPeg);

moveDisk(n, fromPeg, toPeg);

towerOfHanoi(n - 1, auxPeg, toPeg, fromPeg);

}

int main() {

int n;

printf("Enter the number of disks: ");

scanf("%d", &n);

towerOfHanoi(n, 'A', 'C', 'B');

printf("Total number of moves required: %d\n", moveCount);

return 0;

}