#include <stdio.h>

#include<time.h>

void towers(int, char, char, char);

int main()

{

int num;

clock\_t start,end;

double time;

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

scanf("%d", &num);

printf("The sequence of moves involved in the Tower of Hanoi are :\n");

start=clock();

towers(num, 'A', 'C', 'B');

end=clock();

printf("The time taken=%f\n",time);

return 0;

}

void towers(int num, char frompeg, char topeg, char auxpeg)

{

if (num == 1)

{

printf("\n Move disk 1 from peg %c to peg %c", frompeg, topeg);

return;

}

towers(num - 1, frompeg, auxpeg, topeg);

printf("\n Move disk %d from peg %c to peg %c", num, frompeg, topeg);

towers(num - 1, auxpeg, topeg, frompeg);

}

OUTPUT:

[shilpa@shilpa-linux ~]$ cd Desktop

[shilpa@shilpa-linux Desktop]$ cd ADA\_LAB-PROG-main

[shilpa@shilpa-linux ADA\_LAB-PROG-main]$ gcc -o tower\_honoi tower\_honoi.c

[shilpa@shilpa-linux ADA\_LAB-PROG-main]$ ./tower\_honoi

Enter the number of disks : 5

The sequence of moves involved in the Tower of Hanoi are :

Move disk 1 from peg A to peg C

Move disk 2 from peg A to peg B

Move disk 1 from peg C to peg B

Move disk 3 from peg A to peg C

Move disk 1 from peg B to peg A

Move disk 2 from peg B to peg C

Move disk 1 from peg A to peg C

Move disk 4 from peg A to peg B

Move disk 1 from peg C to peg B

Move disk 2 from peg C to peg A

Move disk 1 from peg B to peg A

Move disk 3 from peg C to peg B

Move disk 1 from peg A to peg C

Move disk 2 from peg A to peg B

Move disk 1 from peg C to peg B

Move disk 5 from peg A to peg C

Move disk 1 from peg B to peg A

Move disk 2 from peg B to peg C

Move disk 1 from peg A to peg C

Move disk 3 from peg B to peg A

Move disk 1 from peg C to peg B

Move disk 2 from peg C to peg A

Move disk 1 from peg B to peg A

Move disk 4 from peg B to peg C

Move disk 1 from peg A to peg C

Move disk 2 from peg A to peg B

Move disk 1 from peg C to peg B

Move disk 3 from peg A to peg C

Move disk 1 from peg B to peg A

Move disk 2 from peg B to peg C

Move disk 1 from peg A to peg CThe time taken=0.000000