#include <stdio.h>

void move(int start, int temp, int end, int n);

void main()
{
    int n;
    scanf("%i", &n);
    move(1, 2, 3, n);
}

void move(int start, int temp, int end, int n)
{
    static int step = 0;
    if (n > 0){
        move(start, end, temp, n-1);
        printf("Step %2i: Move disk %i from %i to %i.\n",
            ++step, n, start, end);
        move(temp, start, end, n-1);
    }
}

runner% cat hanoi.c
/* Towers of Hanoi program */
/* Written by N.R. Wagner, 28 Jan 1998 */

function returns value which is always ignored

printf scanf

runner% lint -m -u hanoi.c

runner% cc -o hanoi hanoi.c

runner% hanoi

1
Step 1: Move disk 1 from 1 to 3.

runner% hanoi

2
Step 1: Move disk 1 from 1 to 2.
Step 2: Move disk 2 from 1 to 3.
Step 3: Move disk 1 from 2 to 3.

runner% hanoi

3
Step 1: Move disk 1 from 1 to 3.
Step 2: Move disk 2 from 1 to 2.
Step 3: Move disk 1 from 3 to 2.
Step 4: Move disk 3 from 1 to 3.
Step 5: Move disk 1 from 2 to 1.
Step 6: Move disk 2 from 2 to 3.
Step 7: Move disk 1 from 1 to 3.

runner% hanoi

4
Step 1: Move disk 1 from 1 to 2.
Step 2: Move disk 2 from 1 to 3.
Step 3: Move disk 1 from 2 to 3.
Step 4: Move disk 3 from 1 to 2.
Step 5: Move disk 1 from 3 to 1.
Step 6: Move disk 2 from 3 to 2.
Step 7: Move disk 1 from 1 to 2.
Step 8: Move disk 4 from 1 to 3.
Step 9: Move disk 1 from 2 to 3.
Step 10: Move disk 2 from 2 to 1.
Step 11: Move disk 1 from 3 to 1.
Step 12: Move disk 3 from 2 to 3.
Step 13: Move disk 1 from 1 to 2.
Step 14: Move disk 2 from 1 to 3.
Step 15: Move disk 1 from 2 to 3.

runner% hanoi

5
Step 1: Move disk 1 from 1 to 3.
Step 2: Move disk 2 from 1 to 2.
Step 3: Move disk 1 from 3 to 3.
Step 4: Move disk 3 from 1 to 3.
Step 5: Move disk 1 from 2 to 1.
Step 6: Move disk 2 from 2 to 3.
Step 7: Move disk 1 from 3 to 3.
Step 8: Move disk 4 from 1 to 3.
Step 9: Move disk 1 from 3 to 2.
Step 10: Move disk 2 from 2 to 1.
Step 11: Move disk 1 from 3 to 1.
Step 12: Move disk 3 from 3 to 3.
Step 13: Move disk 1 from 1 to 3.
Step 14: Move disk 2 from 1 to 2.
Step 15: Move disk 1 from 3 to 2.
Step 16: Move disk 5 from 1 to 3.
Step 17: Move disk 1 from 2 to 1.
Step 18: Move disk 2 from 2 to 3.
Step 19: Move disk 1 from 1 to 3.
Step 20: Move disk 3 from 3 to 3.
Step 21: Move disk 1 from 3 to 1.
Step 22: Move disk 2 from 2 to 3.
Step 23: Move disk 1 from 3 to 2.
Step 24: Move disk 4 from 3 to 3.
Step 25: Move disk 1 from 1 to 3.
Step 26: Move disk 2 from 1 to 3.
Step 27: Move disk 1 from 3 to 2.
Step 28: Move disk 3 from 1 to 3.
Step 29: Move disk 1 from 2 to 3.
Step 30: Move disk 2 from 2 to 3.
Step 31: Move disk 1 from 1 to 3.

runner%