

**Lab No: 8 Date: 2081/**

**Title: Write a program to print all the moves required for Tower of Hanoi Problem For user input no of Disk.**

The Hanoi Tower is a problem that E. Lucas brought to the western world in 1883. However, the origins of this game may be traced back to ancient Hindu civilization. It is linked with a Hindu temple tale in which someone allegedly employed the puzzle to improve the mental discipline of young priests. So, in this tutorial, you will explore the Tower of Hanoi problem and, ultimately, you will create a solution for it using the [C programming language.](https://www.simplilearn.com/c-programming-article)

**Understanding Tower of Hanoi Puzzle**

The Tower of Hanoi is a mathematical problem composed of three towers and numerous rings arranged in increasing order of their diameters. The number of towers is constant for this problem, whereas the player can vary the number of rings he wants to use. The image given below depicts the setup of the TOH puzzle. There are three towers in this diagram. And one of the towers is decked up with many discs, having the greatest diameter disc at the bottom and the smallest diameter disc at the top. This tower is known as the source tower. And the objective of this game is to move all rings present at the source tower to the destination tower without altering their sequence.

**IDE: Visual studio Code**

**Language: C**

**Source code:**

#include <stdio.h>

int TOH(int n,char a,char b,char c)

{

    if (n > 0)

    {

        static int count = 1;

        TOH(n - 1, a, c, b);

        printf("%d. Move disk from %c to %c\n", count++, a, c);

        TOH(n - 1, b, a, c);

    }

}

void main()

{

    int num1;

    char a = 'S';

    char b = 'H';

    char c = 'D';

    int count;

    printf("Here S= Source, H= Helper and D= Destination\n");

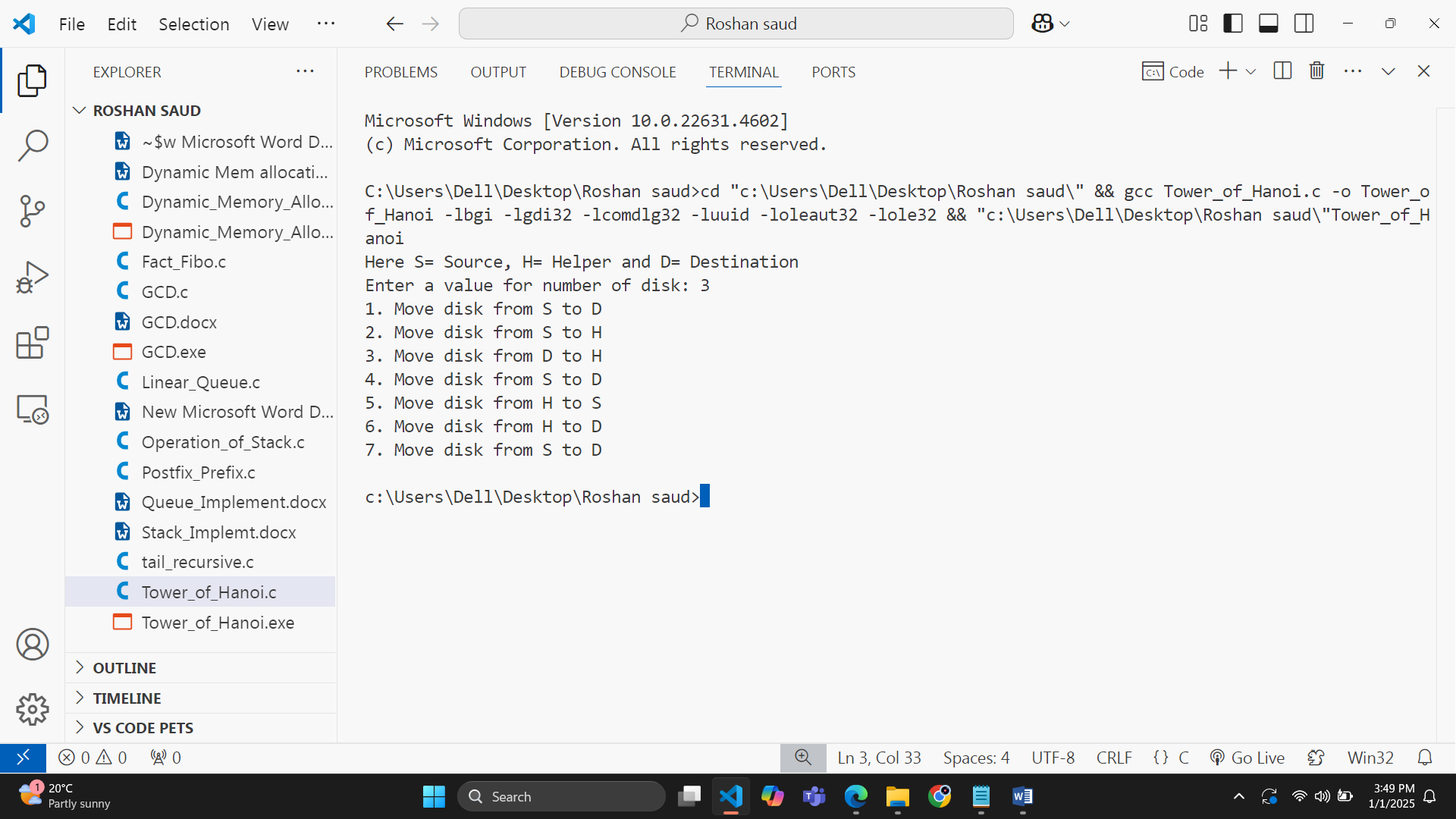
    printf("Enter a value for number of disk: ");

    scanf("%d", &num1);

    TOH(num1, a, b, c);

}

**Output:**

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