THEORY – 1

PROGRAM -1

AIM- TOWER OF HANOI

THEORY-

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| The Tower Of Hanoi Algorithm Is The Principle Of Building Pyramids And Structures Using The Same-Sized Blocks. It Demonstrates How To Solve Problems Efficiently Through Repetition.  The Tower Of Hanoi Algorithm Is A Method To Solve A Mathematical Game Involving Three Rods And A Number Of Disks Of Different Sizes. The Algorithm Aims To Move All Of The Disks From The First Rod To The Last, Obeying Specific Rules. It Is A Powerful Demonstration Of Recursion In Programming.  The objective of the algorithm is to move the entire stack to the last rod, obeying these simple rules:   1. Only one disk can be moved at a time. 2. Each move consists of taking the upper disk from one of the stacks and placing it on top of another stack or on an empty rod. 3. No disk may be placed on top of a smaller disk. |

NOTE = The number of moves required to solve a Tower of Hanoi puzzle is 2^n−1, where n is the number of disks.

Example-

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| If you have two disks, you need a minimum of 3 moves to solve the puzzle. The steps would be as follows:   1. Move the smaller disk from Rod 1 to Rod 2 2. Move the larger disk from Rod 1 to Rod 3 3. Move the smaller disk from Rod 2 to Rod 3 |

Example-

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***Input****: 2****Output:****Disk 1 moved from A to B  
Disk 2 moved from A to C  
Disk 1 moved from B to C*

***Input:****3****Output:****Disk 1 moved from A to C  
Disk 2 moved from A to B  
Disk 1 moved from C to B  
Disk 3 moved from A to C  
Disk 1 moved from B to A  
Disk 2 moved from B to C  
Disk 1 moved from A to C*