

# PROLOGUE

## FOR ALL ASSIGNMENTS

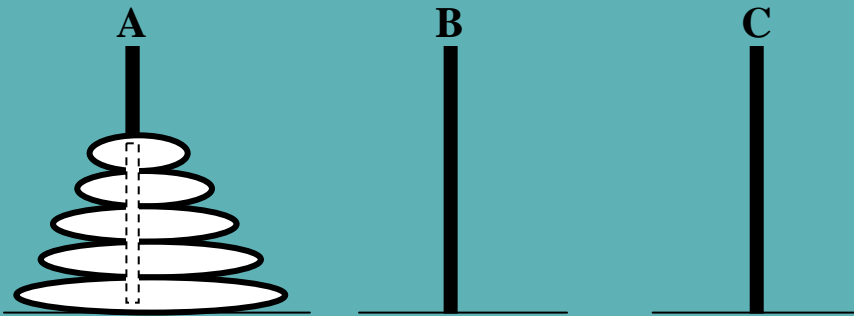
- Attach a *prologue* for all assignments.
- Use sample *prologue* sheet in the course material, customize it for every assignment.
- *Prologue* makes it easy to separate assignments for grading purpose.

# EXERCISE 10

## AFTER CHAPTER – 24

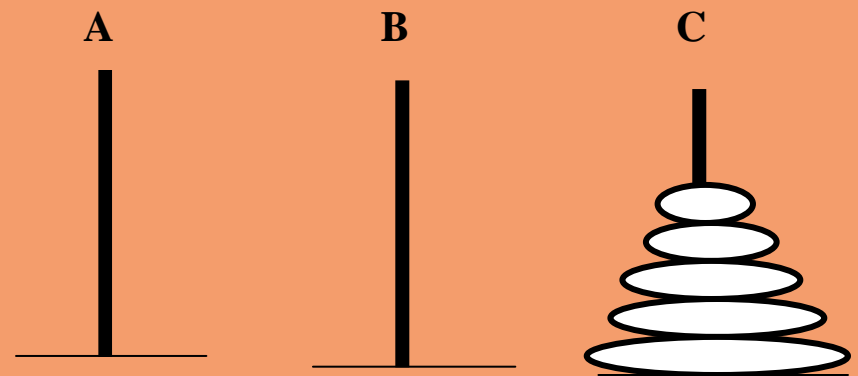
### PROBLEM

The problem of towers of Hanoi has five disks of differing graded diameters are placed on peg A so that a larger disk is always below a smaller disk. The objective is to move the five disks to peg C, using peg B as auxiliary. Only the top disk on any peg may be moved to any other peg, and a larger disk may never rest on a smaller one.



Initial set up of the Towers of Hanoi

Write a recursive routine to be called from a main program where the user is prompted to give the number of disks to be transferred from peg A to peg C using peg B as an auxiliary peg. Pass the number of disks to the recursive routine from the main routine. Identify each final move of any disk to peg C. Also print each move of every disk from any peg to any peg. Run the program with 4, 5, and 6 disks.



Final set up of the Towers of Hanoi

# **EXERCISE 10**

**This solution needs two recursive calls in the main program. One recursive call to place n-1 disks recursively from the from pole to the auxiliary pole and place disk n from the from pole to the to pole. Second recursive call is to place n-1 disks recursively from the auxiliary pole to to pole using from pole as auxiliary pole.**

## **DELIVERABLES**

**Write the prolog and fill up all information for this exercise as given in the sample. Submit the source code, input and the output. The program is expected to be well commented. Place your program as soft copy on assigned shared drive for students of this course.**

## **DUE DATES**

**Assignments are due on the following week after completing the chapter discussion.**