

國立清華大學 電機工程學系 一〇二學年度第二學期

EE-2410 資料結構 Data Structure

Homework #1

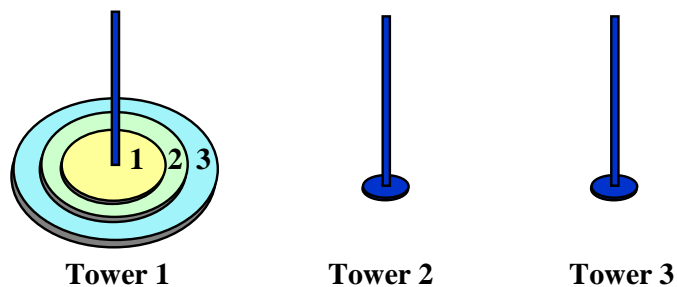
Due on March 17, 2014

請上助教網站上傳包含【原始碼及執行結果】的綜合 PDF file

助教網頁: <http://www.ee.nthu.edu.tw/ee241000>

1. [Towers of Hanoi] There are three towers and n disks of different diameters placed on the first tower. The disks are in order of decreasing diameter as one scans up the tower. Monks were supposed to move the disks from tower 1 to tower 3 while obeying the following rules:
(Rule 1) only one disk can be moved at any time
(Rule 2) no disk can be placed on top of a disk with a smaller diameter.
(a) Write a recursive program for such a problem.
(b) Print out the sequence of moves when n equals 5.
(c) Report the CPU time for $n = 10$.

Example: $n = 3$



繳交資料: Combine all your following documents into a single PDF file for submission to the TA web page. On top of the combined PDF file should be a **cover page** with your 系所，中英文姓名，學號等資訊.

- (a) All your **source codes** (C or C++ file).
- (b) Show the **execution trace** of your program.