

CMCS 341

Homework #2

Assigned Wed. Sept 19

Due (hard copy in class) Wed Sept 26 / Thur Sept 27

1. (10 points) Given two lists of integers L and P sorted in ascending order. The method **PrintLots(L, P)** will print the elements of list L in the positions specified by the integers of list P . For example, if $P = \{ 1, 3, 6 \}$ and $L = \{ 12, 23, 43, 45, 46, 51, 66, 77 \}$ then **PrintLots(L, P)** will print 23, 45, and 66. Write the code for **PrintLots** using only the public methods of the Java List and Iterator interfaces.
2. (8 points) Suppose you are provided with a set of N random numbers which are to be inserted into a sorted List (smallest to largest). What would be the worst-case for building the entire list and what is its asymptotic time performance? You should provide answers for both array implementation and linked-list implementation.
3. (7 points) Using only the operations of the stack (**push**, **pop**, **top**, and **isEmpty**), write in pseudo code a function that determines if a string is a palindrome (i.e., it reads the same forward and backward, e.g., "level"). You are allowed to use multiple stacks, but nothing else.