CSC212

Tutorial 7

Recursion

Problem 1:

Write the static recursive method ***reverseQueue*** that changes the order of the elements in Queue ***q*** and puts them in reverse order. Don’t use auxiliary data structures.

The function’s signature: *public static <T> void reverseQueue(Queue<T> q)*

Problem 2:

Write the recursive static method ***copyStack***, that takes two Stacks ***s1*** and ***s2*** and copies all the elements in ***s1*** into ***s2*** in the same order. Don’t use auxiliary data structures. ***s1*** should not change at the end of the method.

The function’s signature: *public static <T> void copyStack(Stack<T> s1, Stack<T> s2)*

Problem 3:

Write the recursive method ***search,*** member of the class ***Linkedlist,*** that searches for an element ***e*** and returns true if found or false otherwise. Don’t use auxiliary data structures and don’t call any of the ***LinkedList*** methods.

The function’s signature: *public Boolean search(T e)*

Problem 4:

Write the static recursive method ***searchList*** that searches for an element ***e*** in a List ***l*** and returns true if found or false otherwise. Don’t use auxiliary data structures.

The function’s signature: *public static <T> boolean searchList(List<T> l, T e)*