CS 6212
Farhady February 24th, 2019

Assignment 2

Due Date: March 4th, 2019

For any problems that require you to provide an algorithm, only provide the pseudo code.

Problem 1

The following pseudo code is intended to remove all occurrences of element x from a list that is implemented as a linked list. Explain whether it works or not. If not, suggest a way to fix it.

```
deleteAll(x)
  a = head
  while(a->next != null){
    if(a->next->value == x){
      a->next = a->next->next
    }
    a = a->next
  }
```

Problem 2

Implement a queue using two stacks. Assuming you are provided with normal stack operations: push, pop, peek.

Problem 3

Describe how you could use a single array to implement three stacks.

Problem 4

Build step by step a min heap for 6, 8, 3, 9, 2, 10, 5, 7, 16, 1 by inserting those elements into an initially empty heap. Show how the heap looks like after you have inserted the first 9 elements, then show the insertion of the last element (1) step by step in tree form.

Problem 5

Given a sorted array (increasing order) with unique integer elements, provide an algorithm to create a binary search tree with minimal height.