Data Structure and Algorithm

Quiz #5

Tuesday, March 26, 2013

Student Name :

Student ID :

Problem 1. Following is a function that delete the top element from a heap:

```
1   void delete(int heap[], int *heap_num){
2     heap[0] = heap[ _____ ];
3     *heap_num = *heap_num - 1 ;
4     current = 0;
5     while( (2*current+1<(*heap_num) && heap[current]<heap[2*current+1]) ||
6             (2*current+2<(*heap_num) && heap[current]<heap[2*current+2]) ){
7         int tmp;
8         if(2*current+1<(*heap_num) && heap[current]<heap[2*current+1]){
9             tmp = heap[2*current+1];
10            heap[2*current + 1] = heap[current];
11            heap[2*cuurent + 1] = tmp;
12            current = 2*current + 1;
13        }else if(2*current+2<(*heap_num) && heap[current]<heap[2*current+2]){
14            tmp = heap[2*current+1];
15            heap[2*current + 1] = heap[current];
16            heap[2*cuurent + 1] = tmp;
17            current = 2*current + 2;
18        }
19     }
20  }
```

heap is an array representing a max heap structure, *heap_num* records the amount of elements in the heap. *heap[0]* represents the root of the heap. Please fill the blocks and the *TODO* parts in the function.