

# Csci 41: Introduction to Data Structures

## Lab Exercise 7

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Objectives:

- Priority Queue and Heap Sort
  - Use the description of the algorithms to convert them into source code. Please try it without referencing to any material first. Only refer to material when really need it. This lab is to exercise how to convert “ideas/algorithms” into source code.

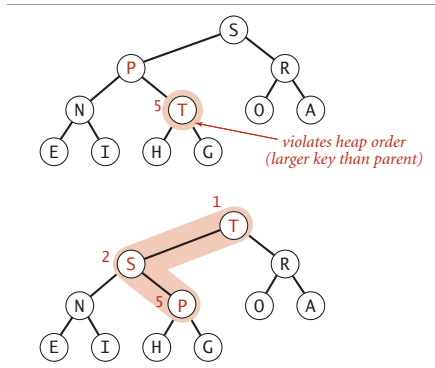
Exercise Summary:

- Implement Priority Queue and Heap sort WITHOUT referencing ANY materials except the animation PDF attached.

When the lab session is over today, compress your **cpp** file(s) (and **header** file(s), if any) into a **single zip file** called YourLastName-Lab7.zip (e.g., Liu-Lab7.zip) and upload it to Blackboard. (**DO NOT** upload the entire project). Note that if you do not submit whatever you have done by the end of lab, you will get 0.5% penalty. You may continue to work on your lab after submission, but you must turn in whatever you have by the end of lab session.

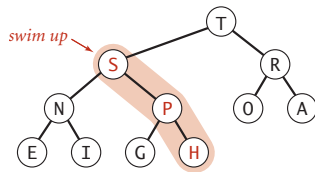
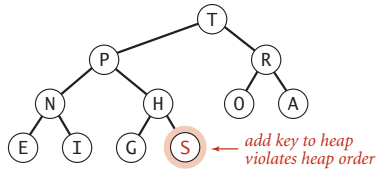
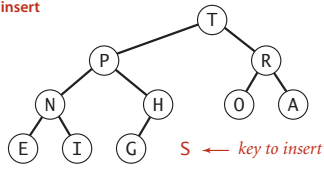
Priority Queue:

a. swim function:

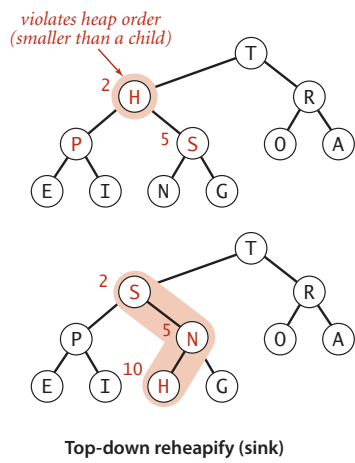


b. insert function:

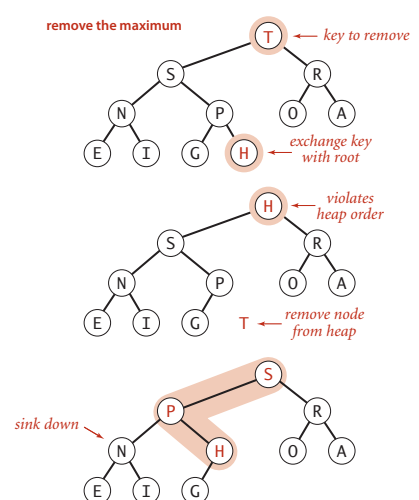
insert



### c. sink function

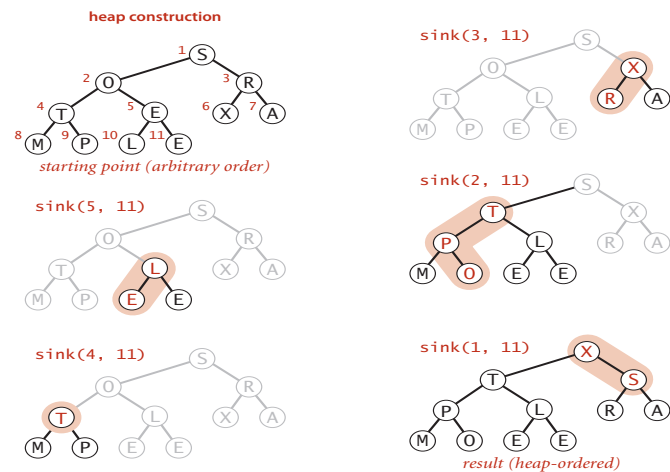


### d. deleteMax function



## Heap Sort

### a. First Step: heapify



### b. Second step: sort down

# sortdown

