

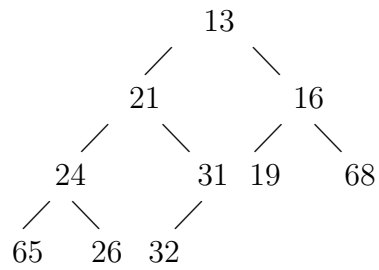
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November 21, 2002

Data Structure II

SOLVE EXACTLY THREE OUT OF THE FOLLOWING FIVE
PROBLEMS:

1. 1) Show the result of the following heap after insert 14.



- 2) Show the result of the heap obtained in (1) after deleting the root.

2. Suppose $T(N)$ is the running time for the mergesort of the data of size N . We know

$$T(1) = 1$$
$$T(N) = 2T(N/2) + N$$

Find a closed formula for $T(N)$

3. Sort 3, 4, 5, 9, 2, 6, 5, 3, 5 using quick sort with medium of three partitioning and a cut off of 3.

4. Give an algorithm to find a maximum spanning tree, suppose the undirected graph is represented by an adjacency list.

