

The NPL of each node in a heap is supposed to be calculated from top down.

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If we merge two heaps represented by complete binary trees, the time complexity is  $\Theta(N)$  provided that the size of each heap is  $N$ .

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A leftist heap with the null path length of the root being  $r$  must have at least  $2^{r+1} - 1$  nodes.

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In order to prove the amortized time bound for a skew heap, the potential function can be defined to be the number of right nodes of the resulting tree.

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The relationship of skew heaps to leftist heaps is analogous to the relation between splay trees and AVL trees.

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With the same operations, the resulting skew heap is always more balanced than the leftist heap.

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A skew heap is a heap data structure implemented as a binary tree. Skew heaps are advantageous because of their ability to merge more quickly than balanced binary heaps. The worst case time complexities for Merge, Insert, and DeleteMin are all  $O(N)$ , while the amortized time complexities for Merge, Insert, and DeleteMin are all  $O(\log N)$ .

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