

Ex 2.4.11: Suppose that your application will have a huge number of insert operations, but only a few remove the maximum operations. Which priority-queue implementation do you think would be most effective: heap, unordered array, or ordered array?

Solution:

Unordered array would be a better priority-queue with less cost for insert as we can insert it without carrying about order. If *Del_max* used a few times, then unordered is ideal since its great for fast insertions because it no longer matters where it is inserted. Ordered array would be ideal if *Del_max()* is done often as it makes removing the max element easy since array already in sorted order.

Ordered arrays have $O(N)$ insert with $O(1)$ *Del_max*.

Unordered arrays have $O(1)$ insert with $O(N)$ *Del_max*.

Binary Heaps have $O(\log N)$ insert with $O(\log N)$ *Del_max* operations due to $\log N$ height of tree.