

Priority Queue Assignment

The file `model_priority_queue.py` posted at Blackboard implements a class `ModelPQ` that maintains a linked list in sorted order when `add()` is called and that removes the front item from this list when `remove_min()` is called (this is the class with which you experimented in class). Reimplement this class with the same functionality and time bounds (`add()` taking time $O(n)$, `remove_min()` taking time $O(1)$), but using a Python list as the internal data structure rather than a linked list.

Note: Deleting an element from a list by using the `del` operator has run time $O(n)$. Similarly, deleting an element from a list by replacing the list with the concatenation of two slices from the list (that exclude the element to be deleted) also has run time $O(n)$. However, popping the last element from a list runs in time $O(1)$. Take this into account in order to earn full credit on this assignment.