Home Work 1.
Algorithms and Data Structures

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HW1.1 CLR 11.1-5. Write operations to insert and delete from both ends of a queue.

HW1.2 CLR 11.2-5. Write pseudo-code to implement the union of to lists. The operation should take time $O(1)$.

HW1.3bis Solve the equation $T(1) = 1$, $T(n) = 2T(n/2) + n^2$ using the tree of procedure calls.

HW1.3 CLR 1.3-7. Given an array A of n numbers and a number x, write a pseudo-code to determine whether the sum of some two numbers in A is equal to x. The running time should be $O(nlogn)$. You can use as a subroutine any procedure done in class. Hint: use sorting and binary-search.

HW1.4 Write code of heapify, build-heap, heap-sort for a min-heap.

HW1.5 Write code for insert and extract-min on a min-heap.

HW1.6 Read pages 337-340 CLR on file compression schemes using priority queues.