COMP 3270: Book Notes

Ch. 6

**6.5 Priority queues**

● the most popular application of a heap = an efficient priority queue

● 2 forms of priority queues:

1. max-priority queues

♦ these are based on max-heaps

2. min-priority queues

● priority queue: a data structure for maintaining a set *S* of elements, each with an associated value called a key

● a max-priority queue supports the following operations:

− INSERT(*S*, x)

♦ inserts the element *x* into the set *S*, which is equivalent to the operation *S* = *S* ∪ {x}

− MAXIMUM(*S*)

♦ returns the element of *S* with the largest key

− EXTRACT−MAX(*S*)

♦ removes and returns the element of *S* with the largest key

− INCREASE−KEY(*S*, x, k)

♦ increases the value of element *x*’s key to the new value *k*, which is assumed to be at least as large as *x*’s current key value

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