

Maintaining the Heap Property

Assumption: sub-trees rooted at $\text{LEFT}(i)$ & $\text{RIGHT}(i)$ are max-heaps.

MAX-HEAPIFY(A, i) // Input an an array and an index i

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1:  $l = \text{LEFT}(i)$ ;  
2:  $r = \text{RIGHT}(i)$   
3: if  $l \leq A.\text{heap-size}$  and  $A[l] > A[i]$  then  
4:    $largest = l$   
5: else    $largest = i$   
6: if  $r \leq A.\text{heap-size}$  and  $A[r] > A[largest]$  then  
7:    $largest = r$   
8: if  $largest \neq i$  then  
9:    $A[i] \leftrightarrow A[largest]$   
10:  MAX-HEAPIFY( $A, largest$ )
```