**CS220 – Lesson 23 – Heap ADT**

Given the above max-heap, redraw the heap after inserting 95 and performing percolateUp.

Using the initial max-heap above (not the one after the insert of the 95), remove the 80 from the heap and percolateDown. When deleting the root element, move the last element in the array to the root position, then percolateDown.

An example ***max-heap*** – for every node, its value is greater than both its children's values. A heap is always a *complete tree*.

For node k:

* its parent's index is (k-1)/2
* its children's indexes are k\*2+1, k\*2+2

The max-heap stored in an array (0-indexed)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Index | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Value |  |  |  |  |  |  |  |  |  |  |  |  |  | - | - | - |