

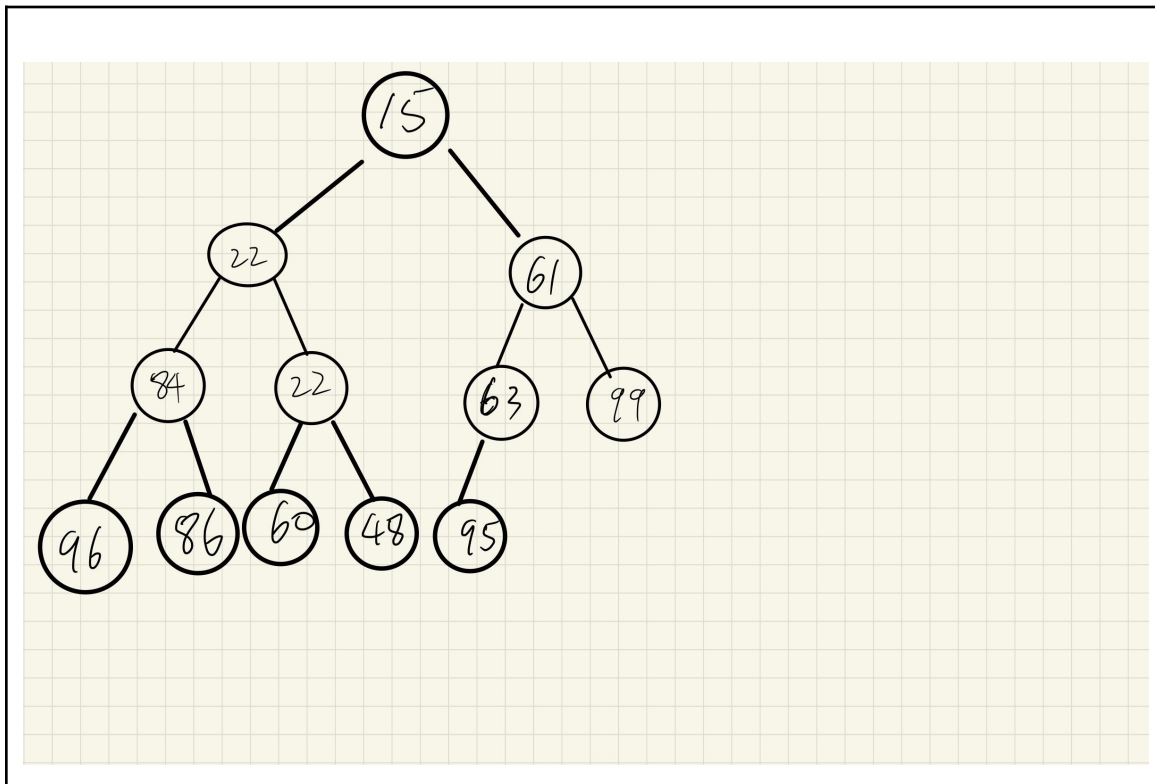
PA 7 Part 1: Heap Worksheet

DSC 30 Winter 2021 - Marina Langlois

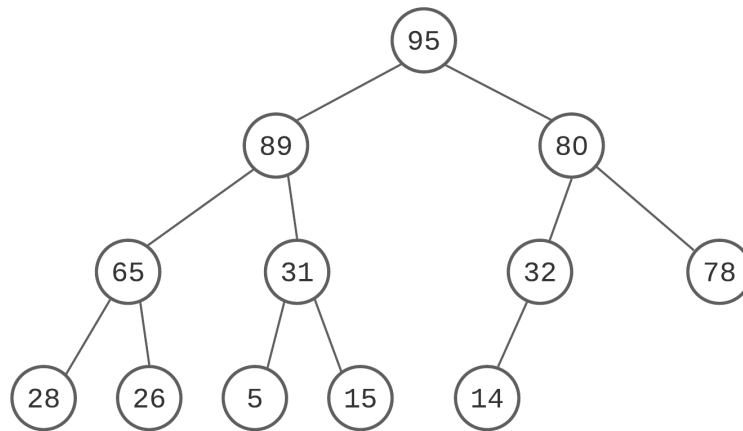
Name	Xing Hong
PID	A15867895

1. Insert the following elements in the given order to an empty binary (d = 2) min-heap. Draw the tree representation of the heap after all insertions.

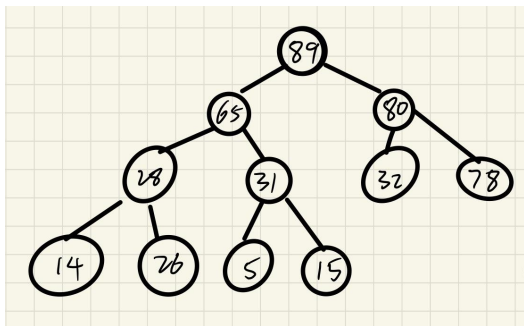
Elements to insert: [60, 96, 61, 15, 22, 63, 99, 84, 86, 22, 48, 95]



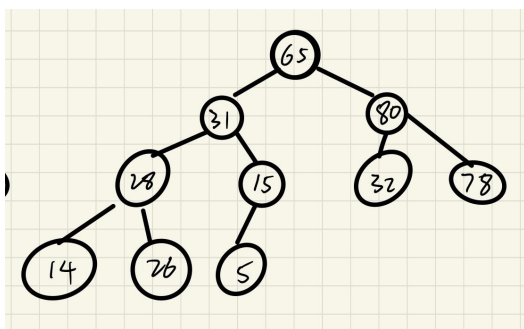
2. Remove the top element 5 times from the given heap and draw the tree representations of the heap after **each** removal.



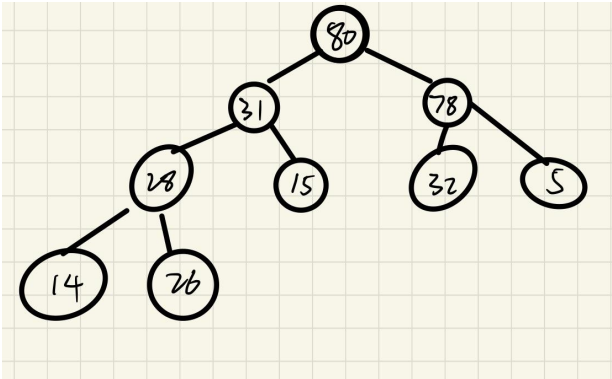
After 1st removal



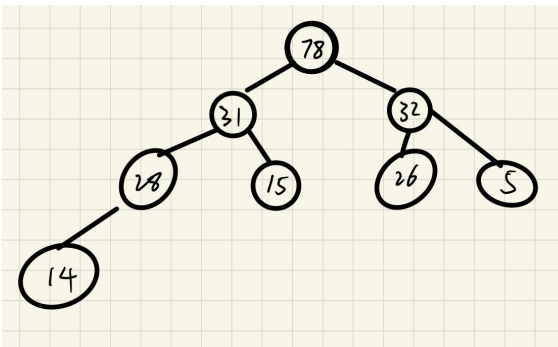
After 2nd removal



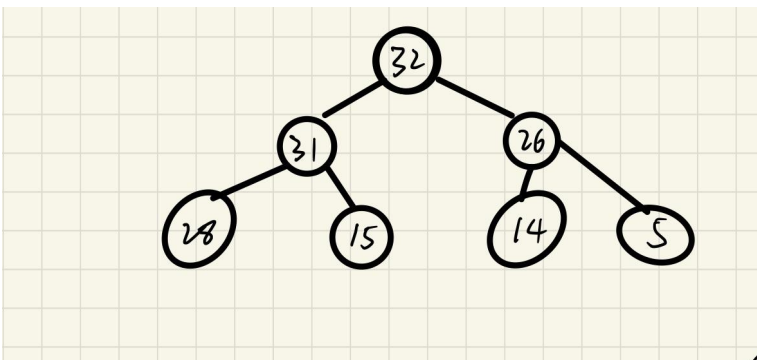
After 3rd removal



After 4th removal



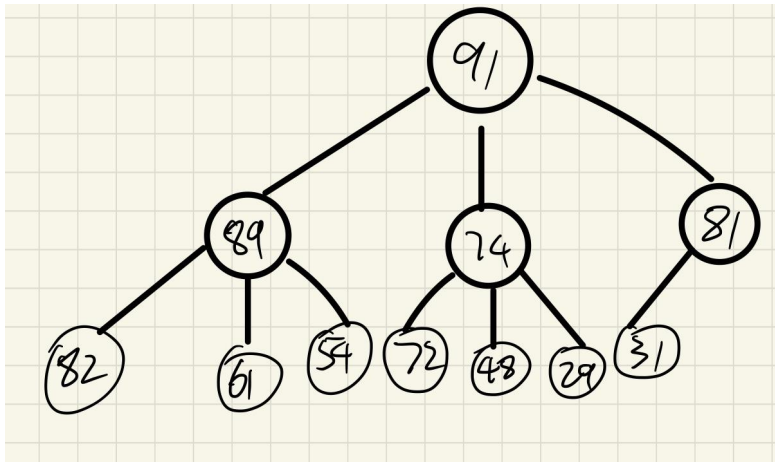
After 5th removal



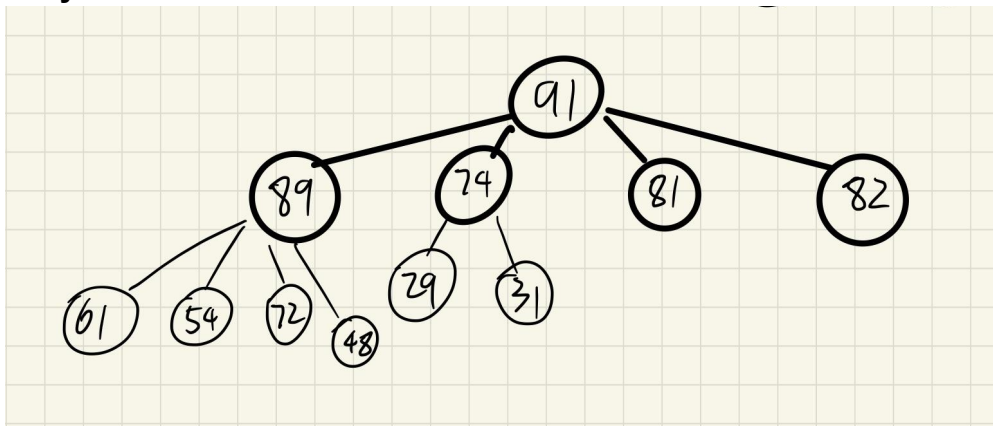
3. Draw the tree representations of the d-ary max-heaps from the following array representation. Choose $d = \{3, 4\}$.

Array representation: [91, 89, 74, 81, 82, 61, 54, 72, 48, 29, 31]

3-ary



4-ary



4. Write down the array representations of the given **3-ary min-heap** after each specified operation.

[illegible]