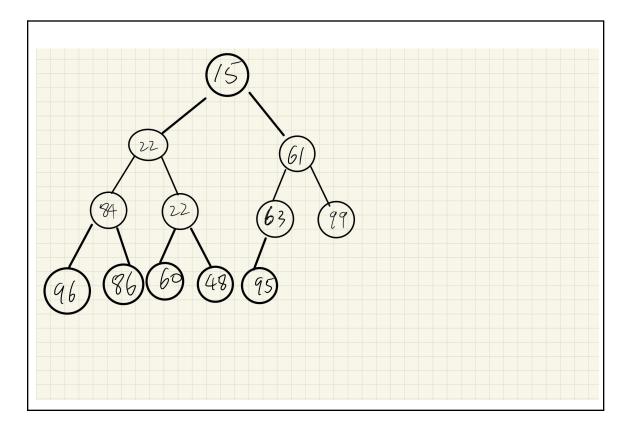
PA 7 Part 1: Heap Worksheet

DSC 30 Winter 2021 - Marina Langlois

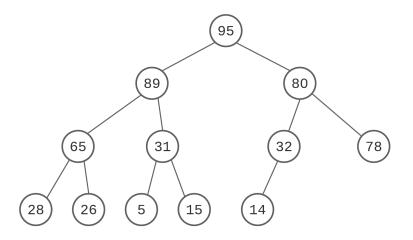
Name	Xing Hong
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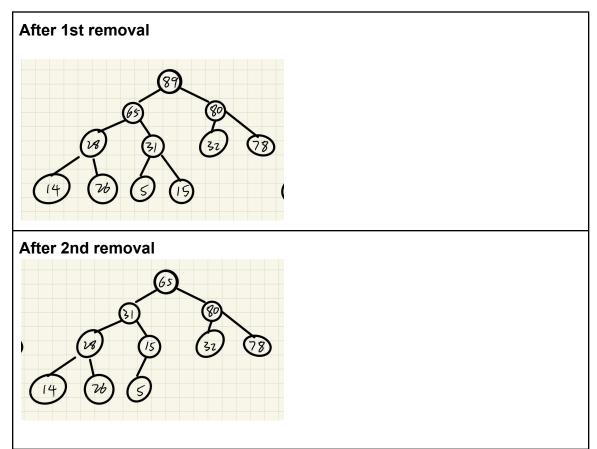
1. Insert the following elements in the given order to an empty binary (d = 2) min-heap. Draw the tree representation of the heap after all insertions.

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



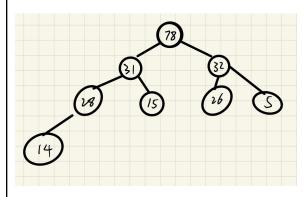
2. Remove the top element 5 times from the given heap and draw the tree representations of the heap after **each** removal.



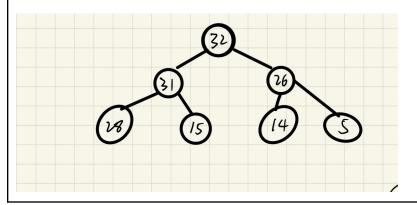


After 3rd removal (3) (80) (3) (14) (76)

After 4th removal

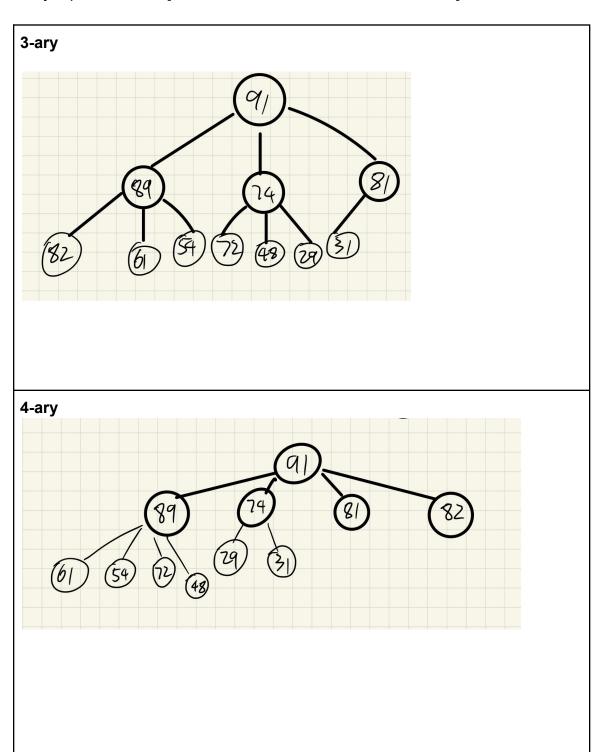


After 5th removal



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]



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

Original												
11	23	19	42	31	48	58	55	30	26	45		
After removing the minimum once												
19	23	26	42	31	48	58	55	30	45			
After removing the minimum twice												
26	31	30	42	45	48	58	55					
After inserting 32 and 18												
26	31	18	42	45	48	58	55	32	30			
After inserting 15 and 12												
12	31	18	15	45	48	58	55	32	30	42	26	
After I	After removing the minimum 10 times											
55	58											