Algorithms and Data Structures 1 2024 - Assignment 5

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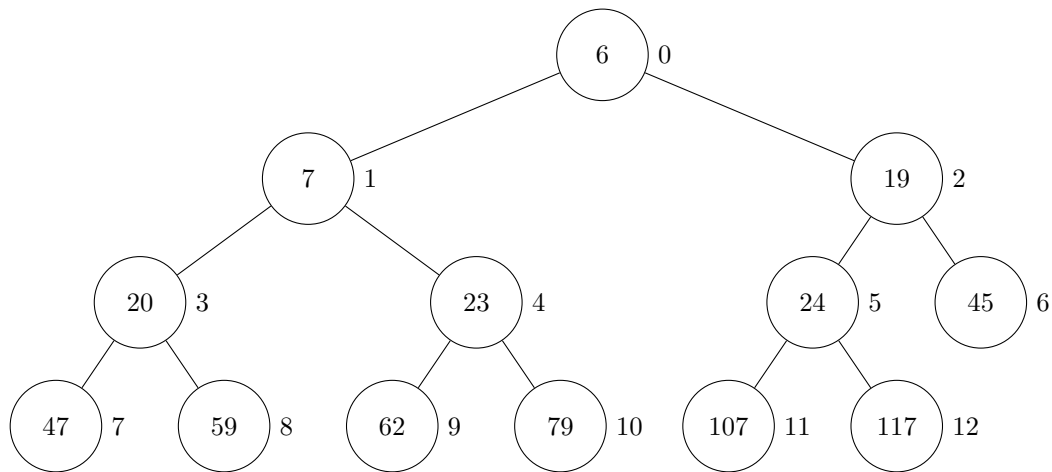
Artificial Intelligence, JKU Linz

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2. MinHeap & MaxHeap (Pen and Paper)

a.

Sequence: $[107, 79, 117, 59, 20, 62, 23, 47, 45, 19, 24, 7, 6]$

index	0	1	2	3	4	5	6	7	8	9	10	11	12
	107												
	79	107											
	79	107	117										
	59	79	117	107									
	20	59	79	107	117								
	20	59	62	79	107	117							
	20	23	59	62	79	107	117						
	20	23	47	59	62	79	107	117					
	20	23	45	47	59	62	79	107	117				
	19	20	23	45	47	59	62	79	107	117			
	19	20	23	24	45	47	59	62	79	107	117		
	7	19	20	23	24	45	47	59	62	79	107	117	
	6	7	19	20	23	24	45	47	59	62	79	107	117

b.

index	0	1	2	3	4	5	6	7	8	9	10	remarks
	54	28	39	8	17	20	21	5	2	15	1	
	1	28	39	8	17	20	21	5	2	15		Remove 54 and replace with 1
	39	28	1	8	17	20	21	5	2	15		Downheap: Swap 1 and 39
	39	28	21	8	17	20	1	5	2	15		Downheap: Swap 1 and 21, End*

End criterion: 39 > 28 and 39 > 21, 28 > 8 and 28 > 17 to name a few.