HW5

70 points
Textbook Questions: 6.2a, 6.3, 6.19, 6.26, 6.27
Due Thursday, November 8th, 11:59pm, submitted on Canvas.

6.2a (15 points)

6.2 a. Show the result of inserting 10, 12, 1, 14, 6, 5, 8, 15, 3, 9, 7, 4, 11, 13, and 2, one at a time, into an initially empty binary heap.

Draw the binary heap after each insert.

6.3 (10 points)

6.3 Show the result of performing three `deleteMin` operations in the heap of the previous exercise.

Draw the binary heap after each, of the three, deleteMIn operations.

6.19 (15 points)

6.19 Merge the two leftist heaps in Figure 6.58.

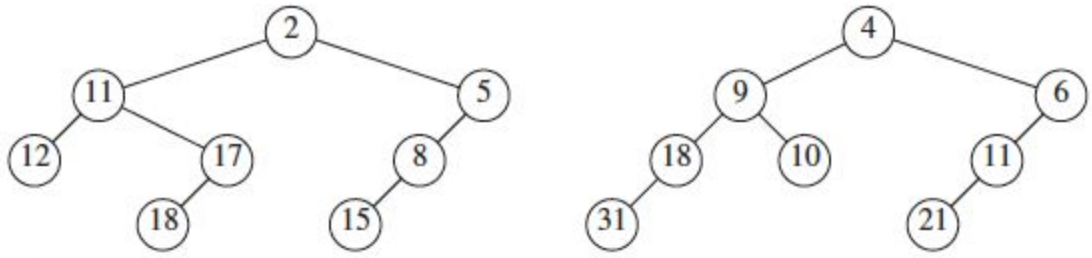

Figure 6.58 Input for Exercises 6.19 and 6.26

Draw the heap after all root and right children are merged, but before any rotations.
Draw the heap after any rotations.

6.26 (15 points)

6.26 Merge the two skew heaps in Figure 6.58.

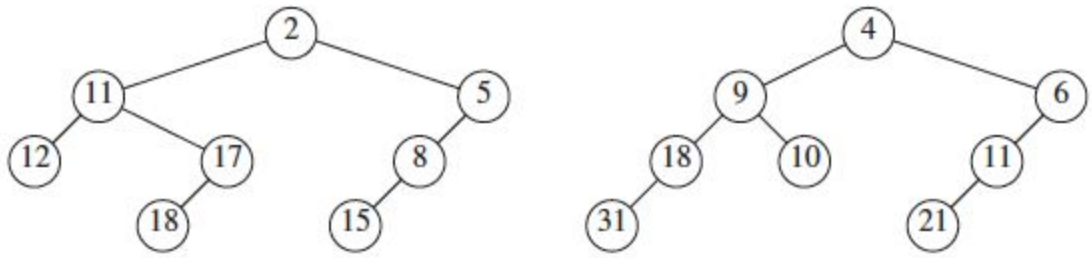

Figure 6.58 Input for Exercises 6.19 and 6.26

Draw the heap after all root and right children are merged, but before any rotations. Draw the heap after each rotation.

Note: The figure for 6.19 and 6.26 is the same. However treat the merge for 6.19 as if both heaps are leftist heaps, and the merge for 6.26 as if both heaps are skew heaps.

6.27 (15 points)

6.27 Show the result of inserting keys 1 to 15 in order into a skew heap.

Draw the skew heap after each insert

Submit to Canvas:
Clearly mark all your drawings. Submit one zip file containing all your files. Please make your zip file well organized for the grader to easily navigate.

Grading Criteria:
6.2 (15 points) - 1 point for each correct drawing, after each insert
6.3 (10 points) - 3.3 points for each correct drawing, after each deleteMin
6.16 (15 points) - points are divided evenly for each correct drawing, for each merge and rotation
6.26 (15 points) - points are divided evenly for each correct drawing, for each merge and rotation
6.27 (15 points) - 1 point for each correct drawing, after each insert