CS 301 Data Structures and Algorithms

Homework 6

Question 1:

[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
87	78	53	45	65	09	31	17	23

A heap is stored in an array.

1) Draw the heap in tree shape based on the given array. Suppose this heap represents a queue.
2) Then dequeue elements one by one from this queue until the queue is empty. Draw the status after every dequeue operation (totally 9 figures, you just need to give the status after dequeue operation and reheapdown operation)

Question 2:

AVL Tree

Initial status is empty. Insert 50, 25, 10, 5, 7, 3, 30, 20, 8, 15 into this AVL tree in order. Draw every rotation of the tree. (You can ignore the statuses until a rotation is needed. Then you need to mark what kind of rotation is needed and draw both tree status before and after the rotation.)

Requirements:

1. [5%] The Following identification information must be included at the beginning of your pdf file.
   //Name: XXXXXXX
   //NetID: XXXXXXX
   //Email: XXXX@csueastbay.edu
2. [5%] The figure is clean and clear.
3. [45%] Question 1
4. [45%] Question 2