

Tutorial 8: July 13

1. Build a quadtree using the following points: (1, 4), (2, 5), (3, 2), (4, 7), (7, 3), (6, 1), (5, 6), (3, 7).
2. Build a kd-tree using the following points: (1, 4), (2, 5), (3, 2), (4, 7), (7, 3), (6, 1), (5, 6), (3, 7). Note that these are the same points as the previous problem.
3. Consider the following points being stored in a 2D range tree: (2, 12), (17, 77), (23, 92), (40, 47), (55, 91), (67, 27), (89, 79), (99, 53), (10, 23), (35, 7), (61, 40), (95, 56), (22, 42), (88, 15), (42, 2).
 - a) Draw the x -BST for this range tree.
 - b) Draw the corresponding y -BSTs for the points (88, 15), (61, 40) and (67, 27).
 - c) Perform a range-search with the query rectangle $[35, 88] \times [5, 30]$, indicating the boundary and allocation nodes.