

1. List the members of your group below. Underline your name.

2. Depict the action of *insertion sort* on the following array. Assuming a typical nested-loop implementation, depict the state of the array after each iteration of the outer loop.

49, 38, 9, 27, 39, 54, 8, 1, 3, 76

3. Depict the result of inserting the following keys, in the order presented, into an initially empty **B-tree** with parameters $M = 4$ and $L = 3$, based on the definitions and methods in the textbook.¹ (The tree is thus a B^+ -tree.)

70, 50, 60, 65, 40, 75, 62, 63, 41, 42, 51, 52, 53, 54

Depict some intermediate states of the tree, *including at least the states after each node-splitting operation.*

Similarly, depict the result of deleting the following keys, in this order, *depicting at least the intermediate states after each node-merging operation.*

40, 41, 52, 63

¹Mark Allen Weiss, *Data Structures and Problem Solving Using Java*, 4th edition (Addison-Wesley, 2010), §19.8.

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