# **Tutorial 8**

# **Binary Tree**

This task requires you to **study** and **write methods** that needed in the program for constructing a binary tree and their operations.

Source code: <https://github.com/zairulmazwan/ADS_Tutorial8.git>

1. In pair, discuss the following methods,

* add and addRecursive
* createBinaryTree
* containsNode and containsNodeRecursive
* delete and deleteRecursive

1. Draw the binary tree for the dataset (from the program in Github).
2. Write the following methods (refer the algorithms from the lecture slides),

* traversePreOrder
* traversePostOrder
* traverseLevelOrder

1. What are the answers for the datasets?

* Pre-order

57 20 15 21 68 65 60 67 80 70 85

* Level Order

57 20 68 15 21 65 80 60 67 70 85

* Post Order

15 21 20 60 67 65 70 85 80 68 57

# **Binary Heap**

This task requires you to **study** and **write methods** that needed in the program:

Source code: <https://github.com/zairulmazwan/ADSTutorial8_BinaryHeap.git>

1. In pair, discuss the following methods,

* insert
* maxHeapify
* deleteNode

1. In pair, draw the binary heap tree for the given dataset.
2. Write the following methods

* getMax
* descending (refer the algorithm from the lecture slides)