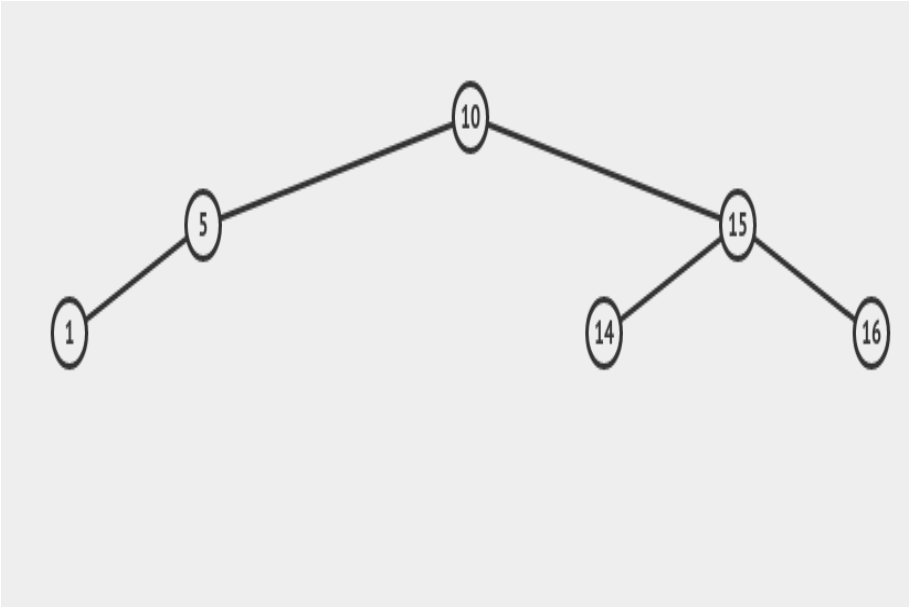
Data Structures
HW3

Sina Rostami
9822143

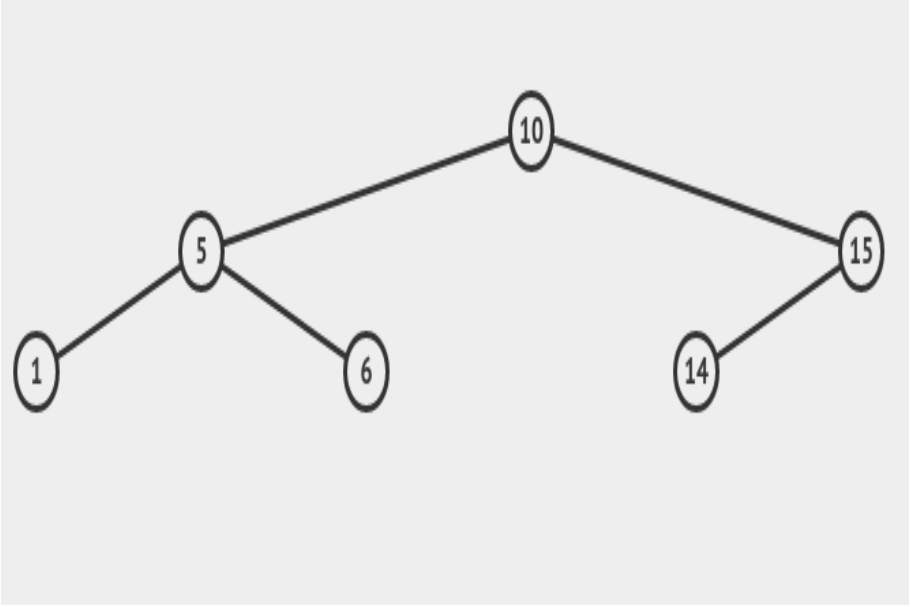
Fall 2020

Problem 1 :

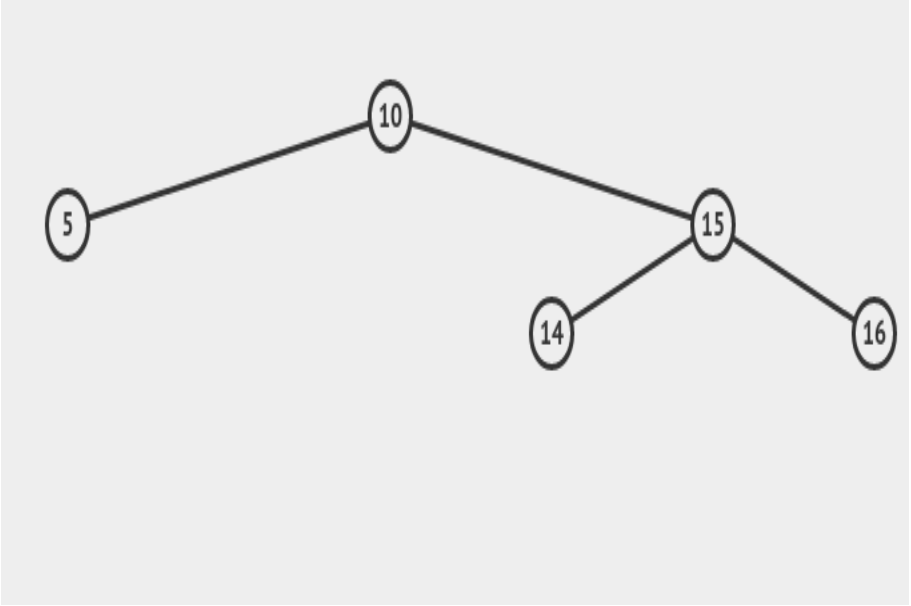
1. A binary tree which is not complete and not full



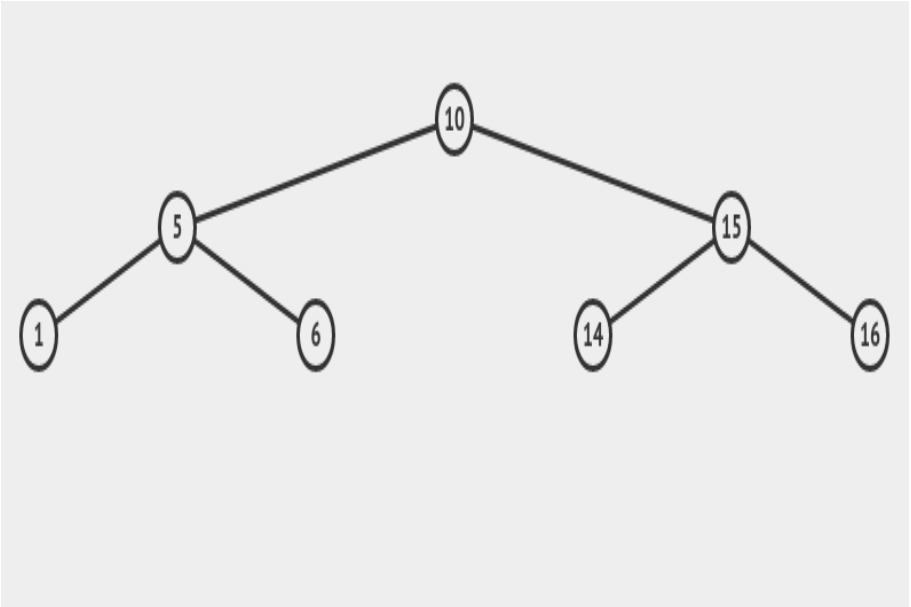
2. A binary tree which is complete but not full



3. A binary tree which is full but not complete

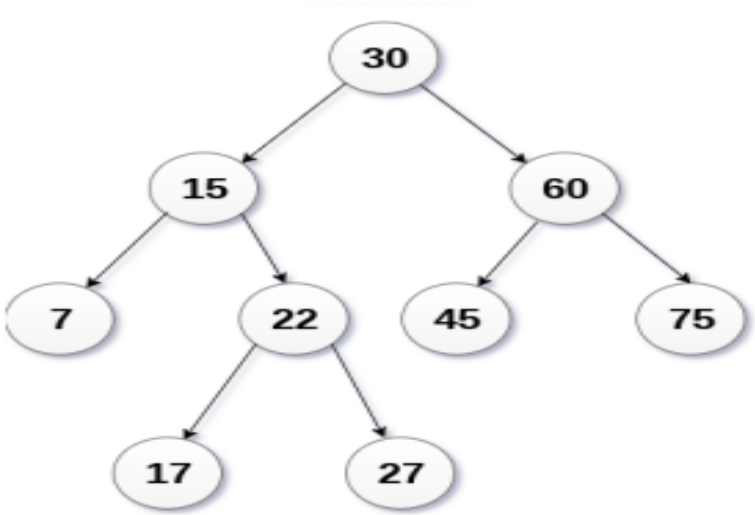


4.A perfect binary tree which is full and complete



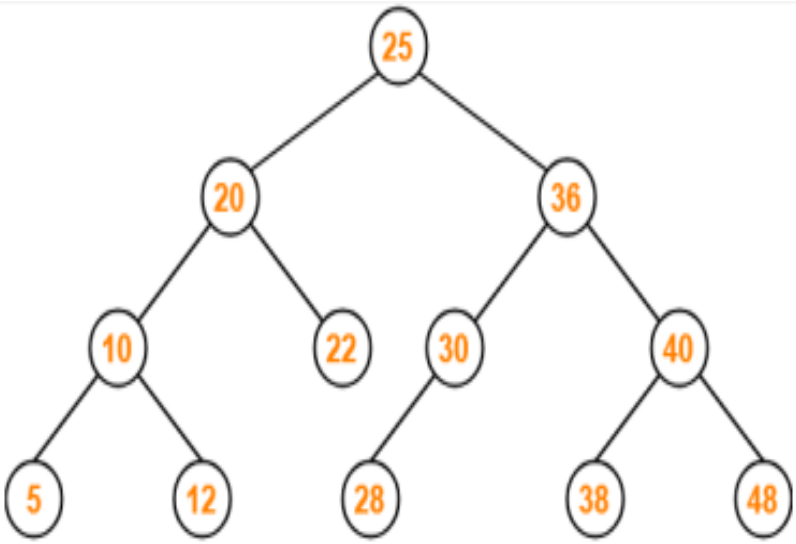
Problem 2 :

1.



BFS : [30, 15, 60, 7, 22, 45, 75, 17, 27]
DFS : [30, 15, 7, 22, 17, 27, 60, 45, 75]
Pre-order : [30, 15, 7, 22, 17, 27, 60, 45, 75]
In-order : [7, 15, 17, 22, 27, 30, 45, 60, 75]
Post-order : [7, 17, 27, 22, 15, 45, 75, 60, 30]

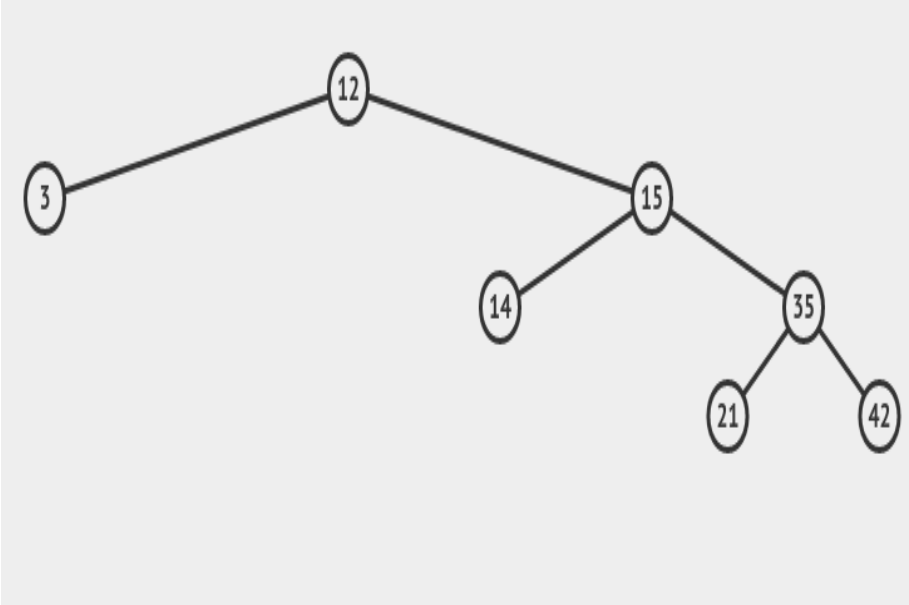
2.



BFS : [25, 20, 36, 10, 22, 30, 40, 5, 12, 28, 38, 48]
DFS : [25, 20, 10, 5, 12, 22, 36, 30, 28, 40, 38, 48]
Pre-order : [25, 20, 10, 5, 12, 22, 36, 30, 28, 40, 38, 48]
In-order : [5, 10, 12, 20, 22, 25, 28, 30, 36, 38, 40, 48]
Post-order : [5, 12, 10, 22, 20, 28, 30, 38, 48, 40, 36, 25]

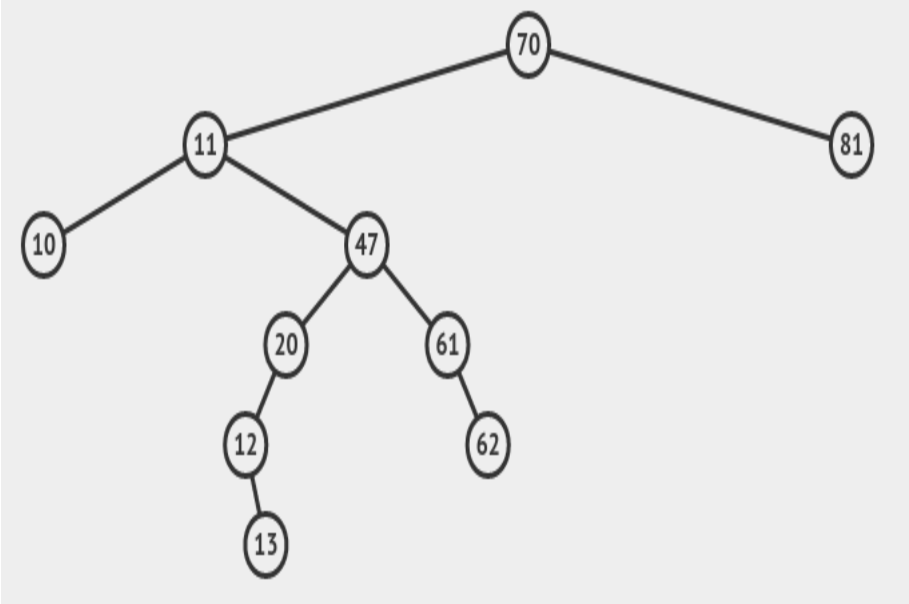
Problem 2 :

1.



Pre-order : [12, 3, 15, 14, 35, 21, 42]
In-order : [3, 12, 14, 15, 21, 35, 42]
Post-order : [3, 14, 21, 42, 35, 15, 12]

2.



Pre-order : [70, 11, 10, 47, 20, 12, 13, 61, 62, 81]
In-order : [10, 11, 12, 13, 20, 47, 61, 62, 70, 81]
Post-order : [10, 13, 12, 20, 62, 61, 47, 11, 81, 70]