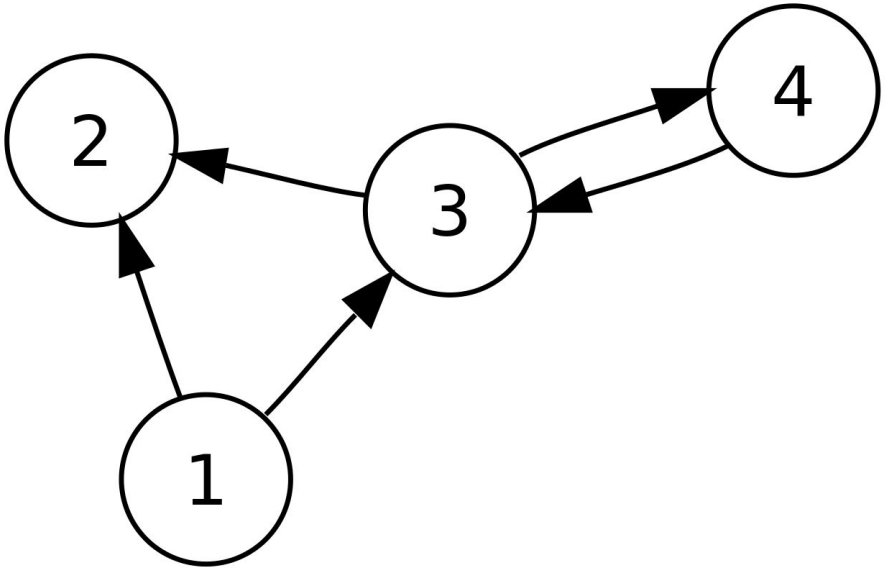
CS180 Discussion

Week 2

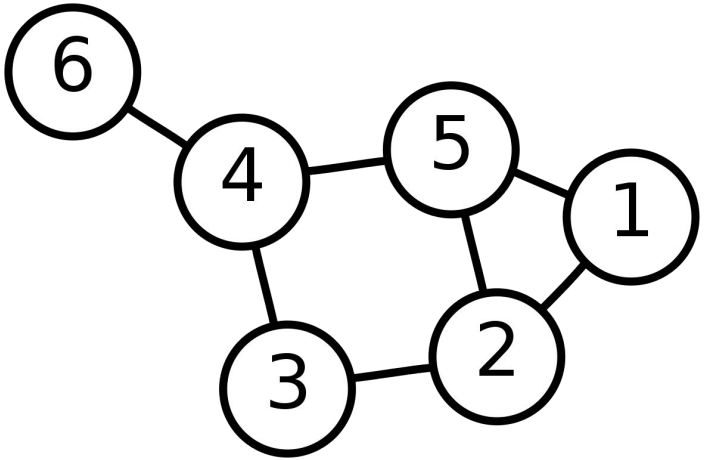
Lecture Recap

- Intro to graphs
  - Directed
  - Undirected
  - Finding graph diameter
  - Clique
  - Independent set
- Graph traversal
  - BFS
  - DFS

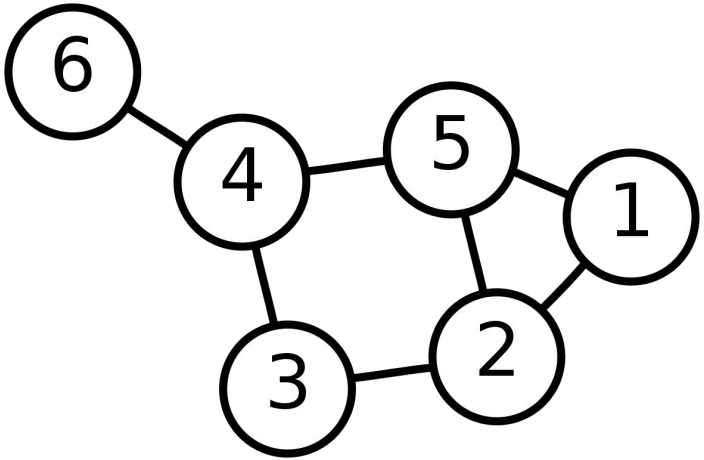
Directed graphs



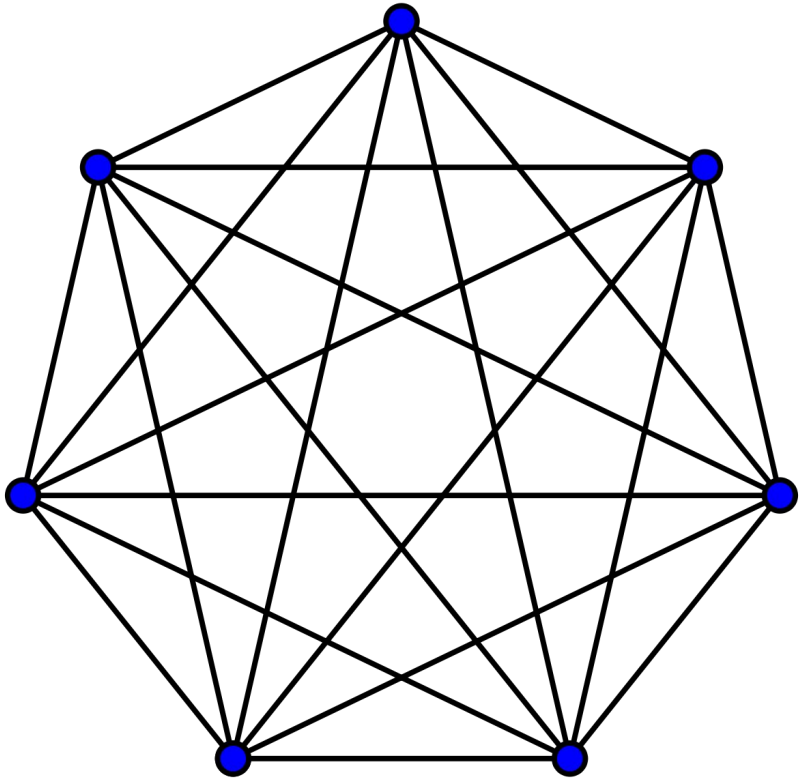
Undirected graphs



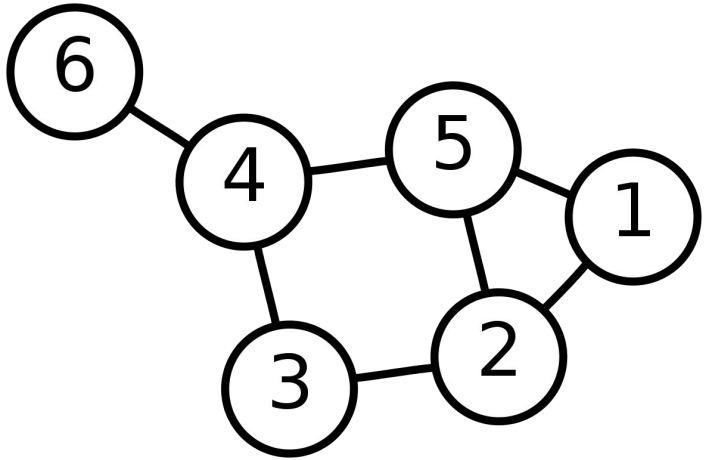
Connected graphs



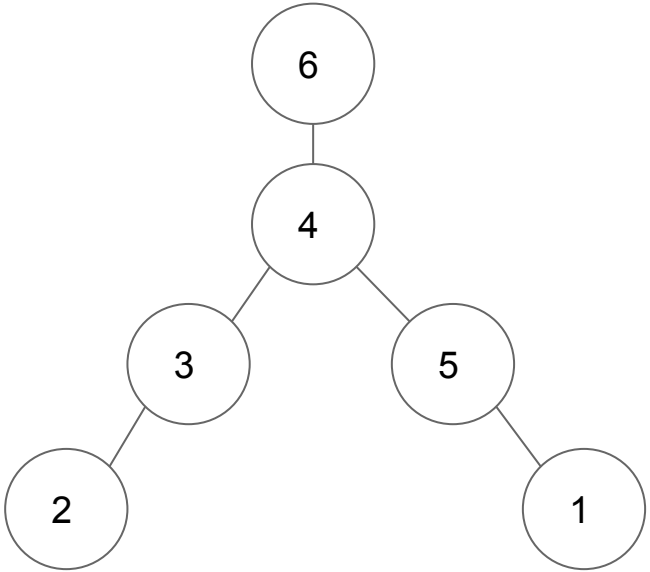
Fully connected graphs

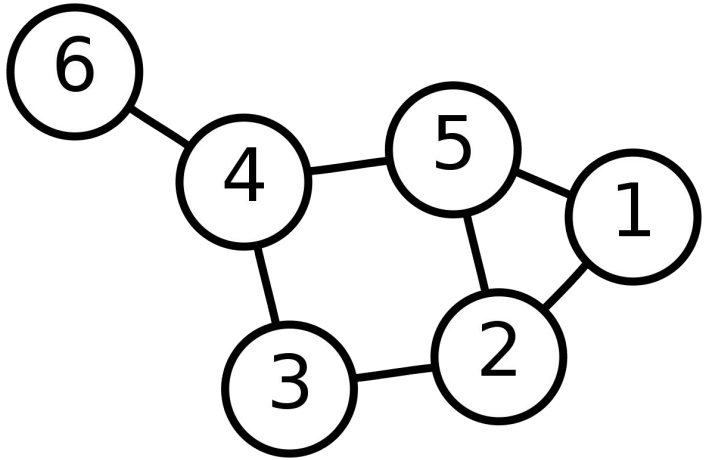


BFS

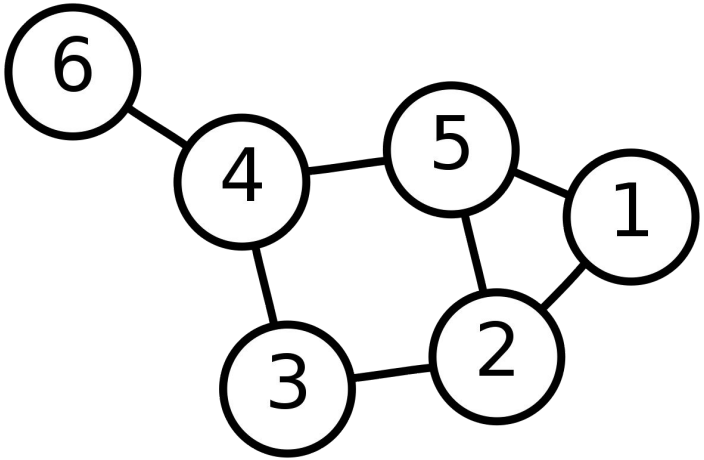


BFS

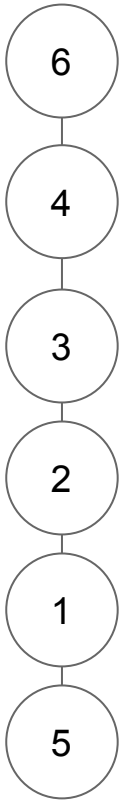


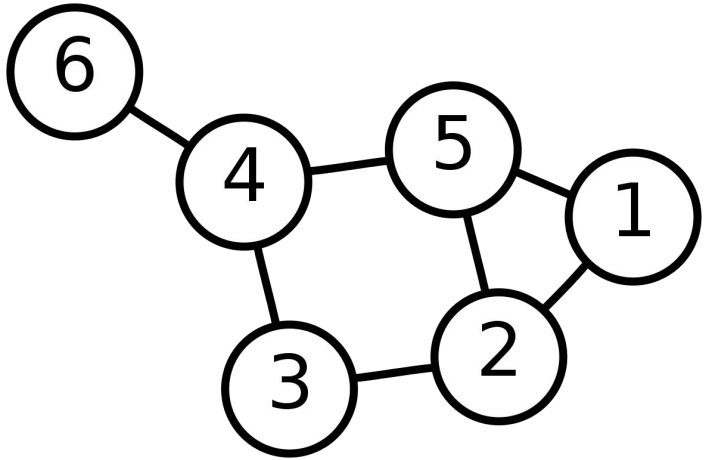


DFS

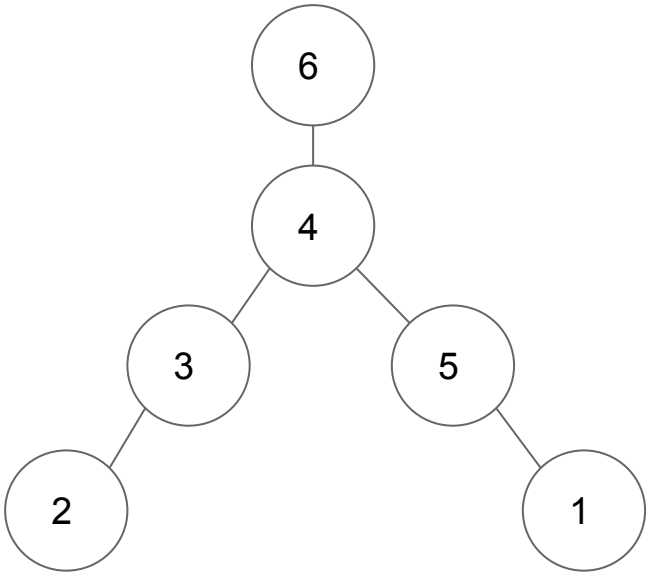


DFS

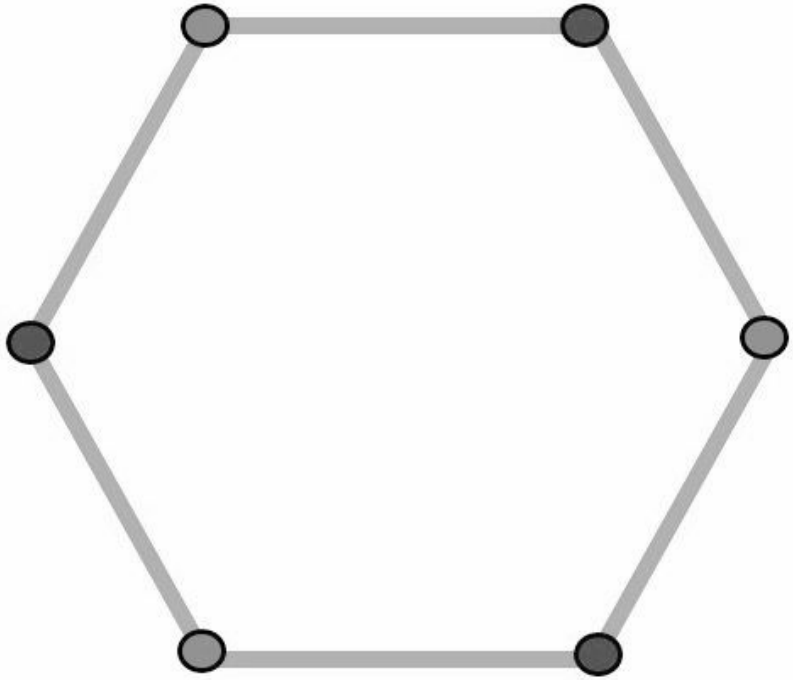




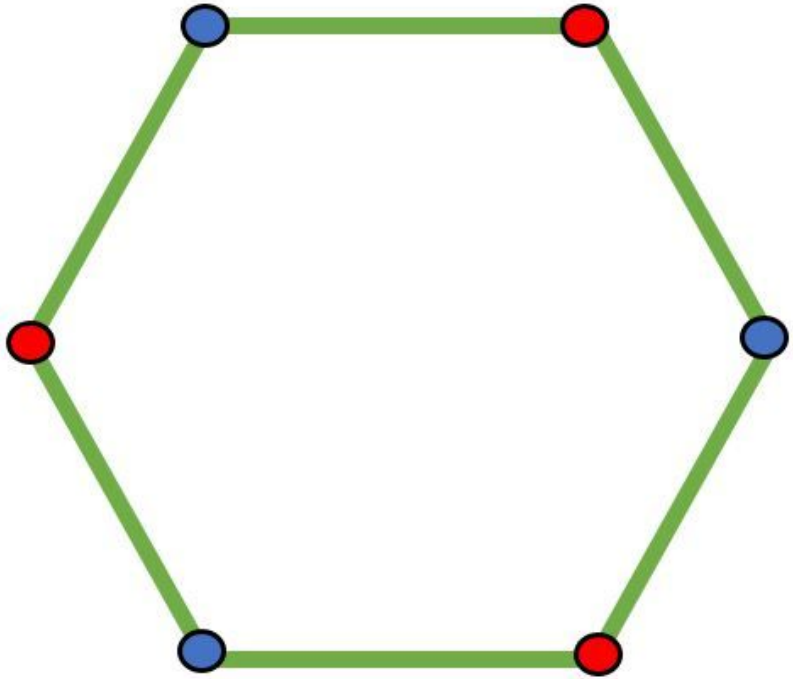
Diameter of graph by leaf pruning



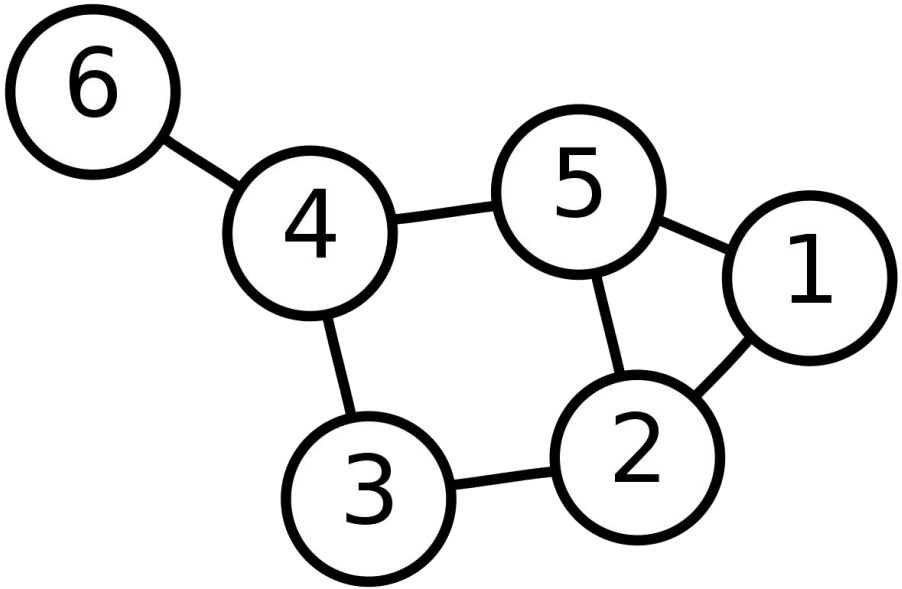
Graph Coloring



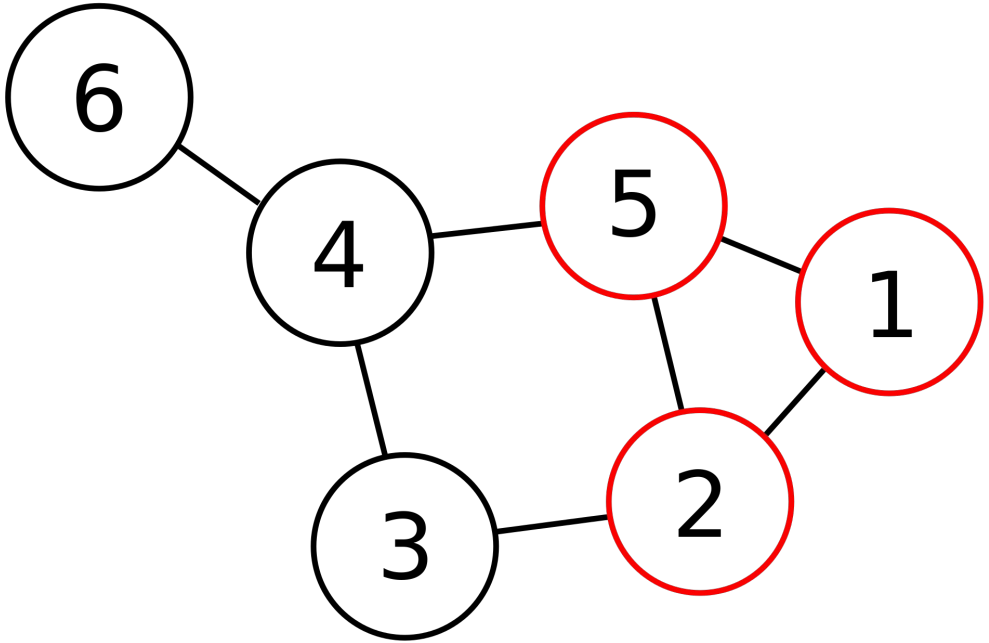
Graph Coloring



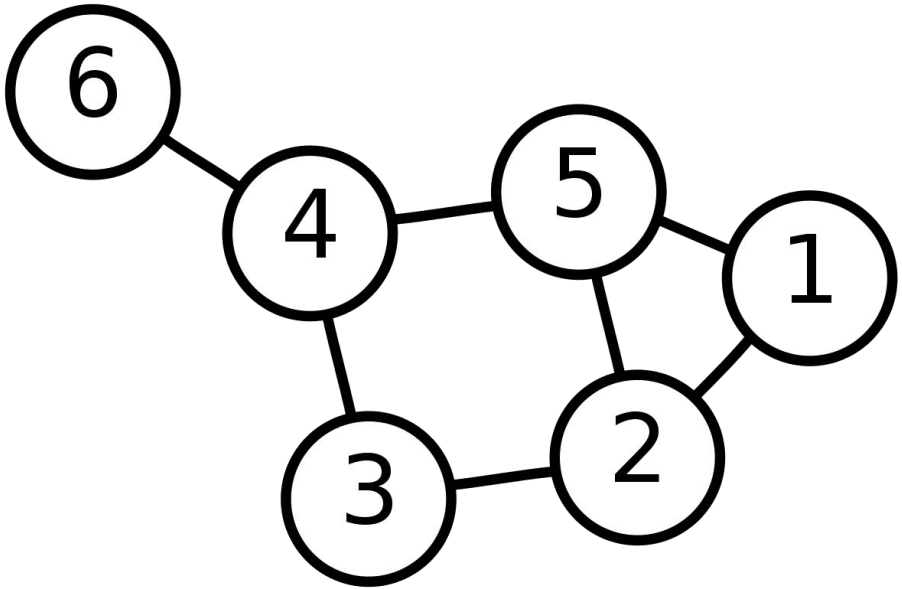
Clique



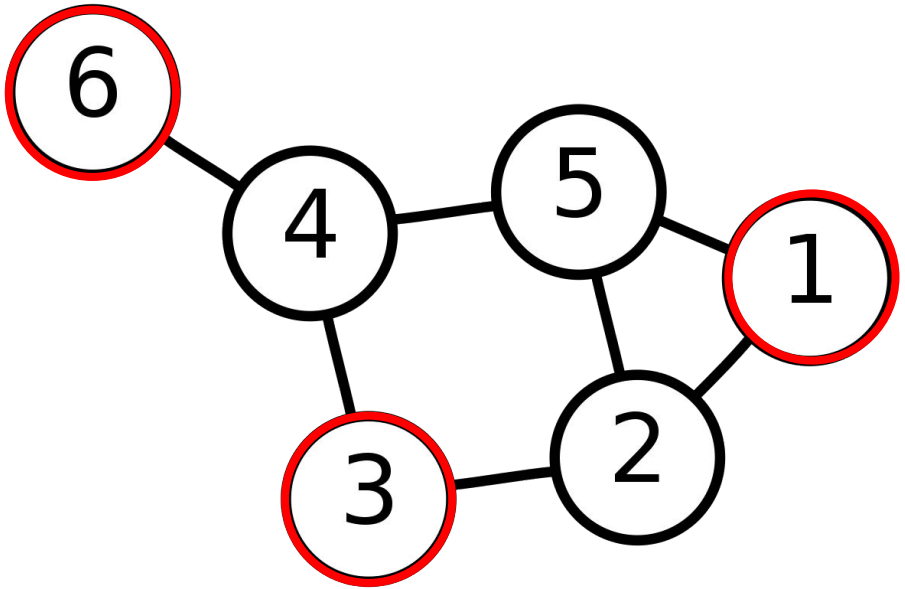
Clique



Independent set

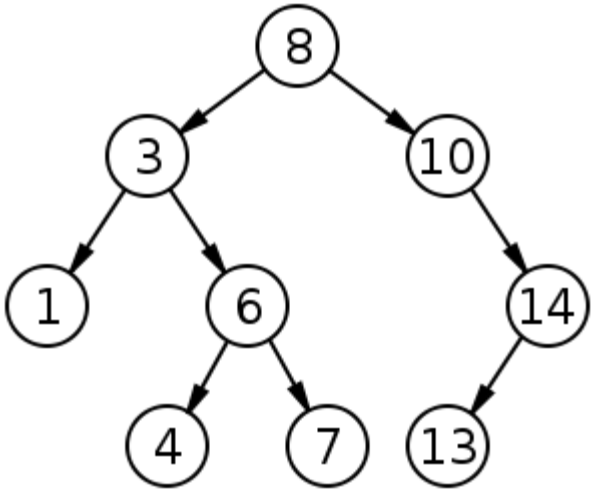


Independent set

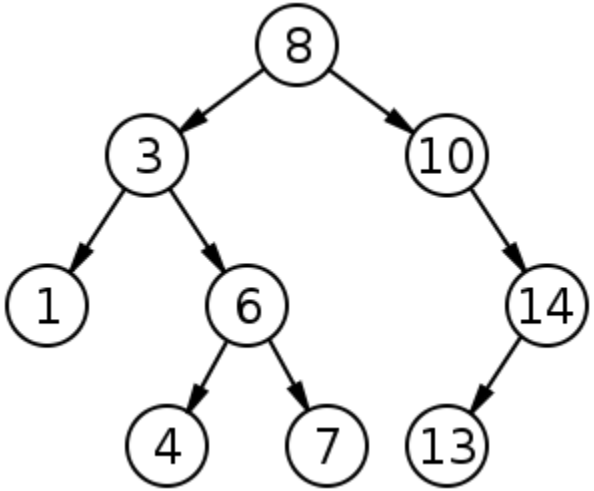


Binary Search Tree

A binary search tree is a rooted binary tree, whose internal nodes each store a key and each have two distinguished sub-trees, commonly denoted left and right. The tree additionally satisfies the binary search property, which states that the key in each node must be greater than or equal to any key stored in the left subtree, and less than or equal to any key stored in the right subtree



Question



Interview Questions!!!

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Validate BST

Implement a function to check if a binary tree is a binary search tree.