NPTEL Course: Programming, Data Structures and Algorithms in Python (*by* Prof. Madhvan Mukund)

Tutorial (Week 7)

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Problems 1: Various traversal methods used for a binary tree

Methods:

➢ *Preorder traversal:* Visit the root, then left most part of tree from root and then visit the right most part of tree from the root.
➢ *Inorder traversal:* Visit leftmost part of tree from root, then visit the root and then visit the rightmost part of tree from the root.*This sorts the data in increasing order.*
➢ *Postorder traversal:* Visit leftmost part of tree from root, then visit the rightmost part of tree from the root, and then then visit the root. *This is useful when we want to efficiently delete the tree.*

Problems 2: Defining various user defined functions under a class (useful to distinguish functions)

➢ If user defines functions for the specific utilities like statistical analysis, algebraic functions etc, its handy to define such functions under specific class which will improve the readability of scripts to other users as well. For, example ndarray (n-dimensional array) in numpy is a class which has many functions that can help users to analyse the multi-dimensional data.