CS220 - Lesson 19 – Tree Worksheet Solution

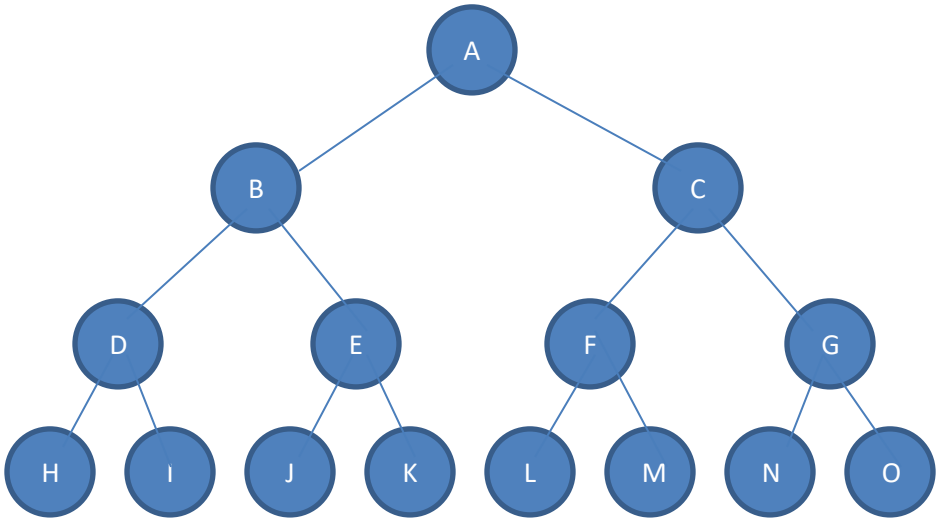
Tree *traversal* – process each node in a tree exactly once in a particular order.

- Given *n* nodes, there are *n*! (i.e., *n* factorial) possible orderings.
- For binary trees, we typically only care about 3 of the possible orders:

Pre-order traversal	In-order traversal	Post-order traversal

`void preOrder(node) {`
`  process(node)`
`  preOrder(node->leftChild)`
`  preorder(node->rightChild)`
`}`
	`void inOrder(node) {`
	`  inOrder(node->leftChild)`
	`  process(node)`
	`  inOrder(node->rightChild)`
	`}`
		`void postOrder(node) {`
		`  postOrder(node->leftChild)`
		`  postOrder(node->rightChild)`
		`  process(node)`
		`}`

Given this binary tree, what order will each of the traversals process the nodes?



Pre-order: A B D H I E J K C F L M G N O

In-order: H D I B J E K A L F M C N G O

Post-order: H I D J K E B L M F N O G C A

Figure out how you can "check your work" for the traversals.