



# In-Order Traversal

In this lesson, we will cover In-Order Traversal and implement it in Python

## We'll cover the following



- Introduction
- Implementation in Python
  - Explanation

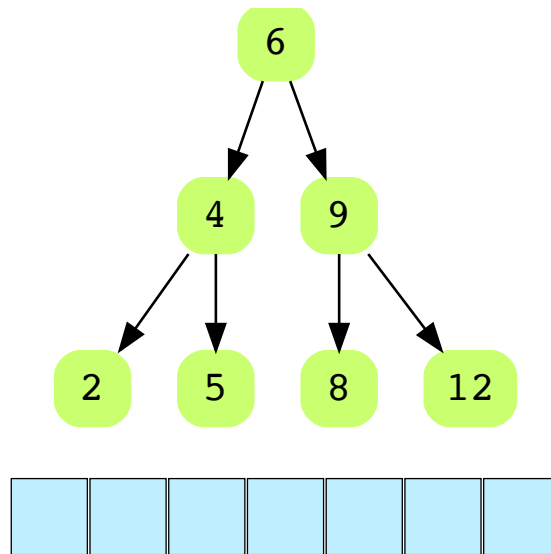
## Introduction #

In In-order traversal, the elements are traversed in “left-root-right” order so they are traversed *in order*. In other words, elements are printed in sorted ascending order with this traversal. We first visit the left child, then the root/parent node, and then the right child. Here is a high-level description of the in-order traversal algorithm,

1. Traverse the left sub-tree of the ‘currentNode’ recursively by calling the `inOrderPrint()` function on it.
2. Visit the current node and print its value
3. Traverse the right sub-tree of the ‘currentNode’ recursively by calling the `inOrderPrint()` function on it.



**In-Order  
traversal  
of  
the tree!**



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## Implementation in Python #

main.py

BinarySearchTree.py

Node.py

```
from Node import Node
from BinarySearchTree import BinarySearchTree

def inOrderPrint(node):
    if node is not None:
        inOrderPrint(node.leftChild)
        print(node.val)
        inOrderPrint(node.rightChild)

BST = BinarySearchTree(6)
BST.insert(4)
BST.insert(9)
BST.insert(5)
BST.insert(2)
BST.insert(8)
```

```
BST.insert(12)

inOrderPrint(BST.root)
```



## Explanation#

First, we create an object of the `BinarySearchTree` class and insert some values into it. We then pass the tree's root to the `inOrderPrint()` function. If the node given is not `None`, this function calls `inOrderPrint()` on the left child first, then on the root, and then finally on the right child.

If you run the code for the BST above, it will print out the following

[2, 4, 5, 6, 8, 9, 12]

This lesson marks the end of our study of binary search trees. We will now move on to other kinds of trees.

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