

# Binary Search Trees

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## INSTRUCTIONS

Use the following definition for a `BTNode`, as provided in the lecture slides:

```
class BTNode:
    def __init__(self, item, left=None, right=None):
        self.item = item # Store the item (integer)
        self.left = left # Reference to the left child node
        self.right = right # Reference to the right child node
```

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1. Write a function `insertBSTNode()` that adds an item to a Binary Search Tree.

```
def insertBSTNode(node, value):
```

BST nodes should be dynamically created by instantiating the `BTNode` class.

Hint: The core logic of this function has been covered in the lecture slides. Ensure that your implementation correctly handles inserting a node into an empty BST.

2. Write a function `printBSTInOrder()` that prints the items stored in a Binary Search Tree in sorted order using an in-order traversal pattern.

```
def printBSTInOrder(node):
```

3. Write a function `isBST()` that determines whether a given Binary Tree is also a Binary Search Tree. The function should return `True` if the tree is a BST and `False` otherwise.

```
def isBST(node):
```

4. Write a function `removeBSTNode()` that removes a given item from a Binary Search Tree. The function should return `0` if the item was successfully removed and `-1` otherwise.

```
def removeBSTNode(node, value):
```