Binary Search Trees

INSTRUCTIONS

You should use the following definition for a BTNode as previously given in the lecture slides:

```
typedef struct _btnode{
        int item;
        struct _btnode *left;
        struct _btnode *right;
} BTNode;
```

---

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

```
void insertBSTNode(BTNode **node, int value);
```

BST nodes should be created dynamically using a malloc() call.

Hint: The core of this function has been provided in the lecture slides. Make sure that your code is able to correctly add a node into an empty BST.

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

```
void printBSTInOrder(BTNode *node);
```

3. Write a function isBST() that determines whether a given Binary Tree is also a Binary Search Tree. The function should return 1 if the BT is a BST, and 0 otherwise.

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