Implementation of Binary Search Tree(BST) using Linked List

```cpp
#include <iostream>
#include "./include/LinkedListBST.h"
#include "./include/LinkedListBST.cpp"

int main()
{
  LinkedListBST *bst = new LinkedListBST();

  cout << endl << "*** Check Empty ***" << endl;
  cout << "Is the tree empty? " << bst->isEmpty() << endl;

  cout << endl << "*** Add to BST ***" << endl;
  cout << "Adding 10" << endl;
  bst->addBST(10, 10);
  cout << "Adding 5" << endl;
  bst->addBST(5, 5);
  cout << "Adding 15" << endl;
  bst->addBST(15, 15);
  cout << "Adding 3" << endl;
  bst->addBST(3, 3);
  cout << "Current tree: " << endl;
  bst->printBST();
  cout << endl << "Adding 7" << endl;
  bst->addBST(7, 7);
  cout << "Adding 12" << endl;
  bst->addBST(12, 12);
  cout << "Adding 17" << endl;
  bst->addBST(17, 17);
  cout << "Adding 1" << endl;
  bst->addBST(1, 1);
  bst->printBST();
  cout << endl;

  cout << endl<< "*** Remove from BST ***" << endl;
  cout << "Current tree: " << endl;
  bst->printBST();
  cout << endl << "Removing 7" << endl;
  bst->removeBST(7);
  cout << "Removing 15" << endl;
  bst->removeBST(15);
  cout << "Removing 7 again" << endl;
  bst->removeBST(7); // should print The key 7 is not in the tree.
  cout << "Removing 5" << endl;
  bst->removeBST(5);
  cout << "Current tree: " << endl;
  bst->printBST();
  cout << endl;

  cout << endl;

  return 0;
}
```

Figure 1: Binary Search Tree using Linked List

Output for the the test program:

```
beyond@Infiverse:~/Desktop/Assignments/CE2020_Lab4_63_64$ ./a.out
*** Check Empty ***
Is the tree empty? 1

*** Add to BST ***
Adding 10
Adding 5
Adding 15
Adding 3
Current tree:
3 5 10 15
Adding 7
Adding 12
Adding 17
Adding 1
1 3 5 7 10 12 15 17

*** Remove from BST ***
Current tree:
1 3 5 7 10 12 15 17
Removing 7
Removing 15
Removing 7 again
The key 7 is not in the tree.
Removing 5
Current tree:
1 3 10 17

*** Searching in BST ***
Search BST:
Does 10 exist in BST? 1
Does 5 exist in BST? 0
Current tree:
1 3 10 17
```

Figure 2: Output for the test program from Figure 1