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In TreeNode.h I have class TreeNode with private data variables: data, Lchild, Rchild. There is also default constructor and constructor of node, setter and getter(I didn't use setter and getter just because class BST is friend of class TreeNode)

On BST.h I have public and private functions. Public: `BST();`

```
        void insert(int item);
        void deleteItem(int item);
        void graph(ostream& out);
        bool search( int item);
        void preorder(ostream & out );
        void postorder(ostream & out);
        void inorder(ostream & out);

private:
void inorderAux(ostream& out,TreeNode* subtreePtr) ;
        void preorderAux(ostream& out,TreeNode* subtreePtr);
        void postorderAux(ostream& out,TreeNode* subtreePtr);
        void graphAux(ostream& out, int indent, TreeNode* subtreeRoot);
```
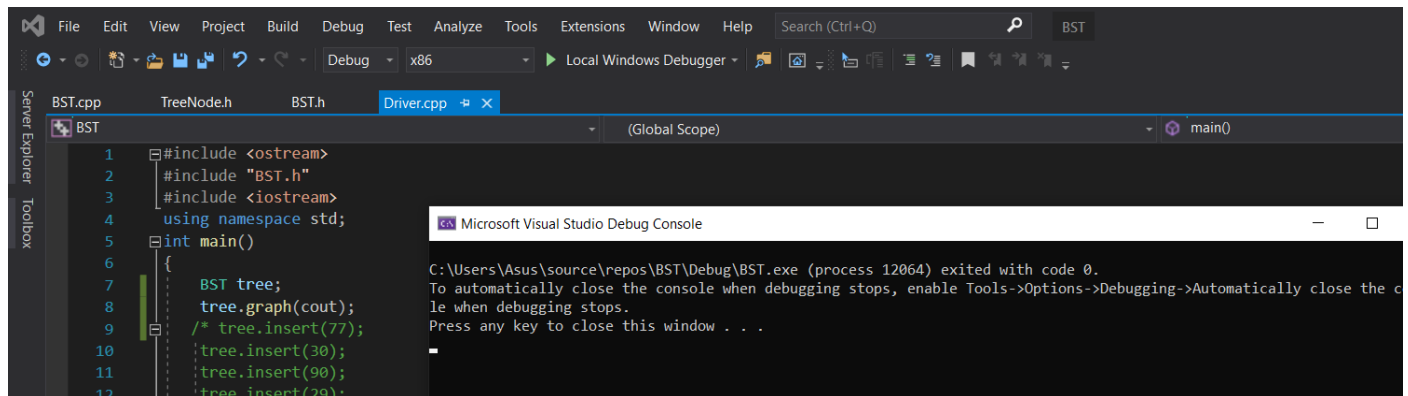
also there is one private variable: `TreeNode* root;`

on BST.cpp I have description of every function which was on BST.h

driver.cpp

1)in first case create BST with no value graph it and see that there is no output.

2) I tried to delete node from empty BST

```
     ST                                          ▾      (Global Scope)
 1    ⊟#include <ostream>
 2     #include "BST.h"
 3     #include <iostream>           ▣ Microsoft Visual Studio Debug Console
 4      using namespace std;         item isn't found
 5    ⊟int main()
 6     {                             C:\Users\Asus\source\repos\BST\Debug\BST.exe (proce
 7        BST tree;                  To automatically close the console when debugging s
 8        tree.graph(cout);          le when debugging stops.
 9        tree.deleteItem(5);        Press any key to close this window . . .
10    ⊟    /* tree.insert(77);
```

3)I tried to insert some numbers and display it like a BST graph:


```
 1    ⊟#include <ostream>
 2     #include "BST.h"
 3     #include <iostream>
 4      using namespace std;
 5    ⊟int main()
 6     {                             ▣ Microsoft Visual Studio Debug Console
 7        BST tree;                  item isn't found
 8        tree.graph(cout);                       156
 9        tree.deleteItem(5);              90
10        tree.insert(77);                    89
11        tree.insert(30);                            88
12        tree.insert(90);          77
13        tree.insert(29);                 30
14        tree.insert(89);                    29
15        tree.insert(156);                       12
16        tree.insert(88);                            3
17        tree.insert(12);
18        tree.insert(3);           C:\Users\Asus\source\repos\BST\Debug\BST.exe (p
19        tree.graph(cout);         To automatically close the console when debuggi
                                    le when debugging stops.
```

4)then I tried to search non-existing number and then existing number:


```
      tree.insert(89);
      tree.insert(156);
      tree.insert(88);
      tree.insert(12);
      tree.insert(3);                              ▣ Microsoft Visual Studio Debug Console
   // tree.graph(cout);                            The number is not in the BST
      cout << "The number " << (tree.search(158) ? "is" : "is not") << " in the BST\n";   The number is in the BST
      cout << "The number " << (tree.search(12) ? "is" : "is not") << " in the BST\n";
   /*tree.inorder(cout);                           C:\Users\Asus\source\repos\BST\Debug\BST.e
```

5)the I inorder preorder and postorder the BST:

```
        cout <<    The number    The number is in the BST
22      tree.inorder(cout);     3  12  29  30  77  88  89  90  156
23      cout << "" << endl;     77  30  29  12  3  90  89  88  156
24      tree.preorder(cout);    3  12  29  30  88  89  156  90  77
25      cout << "" << endl;     C:\Users\Asus\source\repos\BST\Debug\BS
26      tree.postorder(cout);   To automatically close the console when
27      cout << "" << endl;     le when debugging stops.
```

6)delete non-exiting node, then delete node with 1 child, delete node with 2 child and delete node with 0 child.

```
15      tree.insert(156);       item isn't found
16      tree.insert(88);                        156
17      tree.insert(12);                90
18      tree.insert(3);                     89
19      tree.graph(cout);                       88
20      cout << "The number " <<    77
21      cout << "The number " <<        30
22      tree.inorder(cout);                 29
23      cout << "" << endl;                     3
24      tree.preorder(cout);            156
25      cout << "" << endl;         90
26      tree.postorder(cout);               89
27      cout << "" << endl;     77          88
28      tree.deleteItem(1);             30
29      tree.deleteItem(12);                3
30      tree.graph(cout);               156
31      tree.deleteItem(29);        90
32      tree.graph(cout);                   89
33      tree.deleteItem(88);    77
34      tree.graph(cout);               30
35      //tree.graph(cout);*/               3
                                C:\Users\Asus\source\repos\BST\Debug\BST.exe (process
                                To automatically close the console when debugging stop
```