//COP3530 ~ Project2 ~ 13/April/2015 ~ Ricardo Stefano Reyna
//--------------------------------
//COP3530sp15_Proj2 Programmer's Guide and Report -------
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//-------
// Purpose of Program
//-------
COP3503sp15_Proj2 (henceforth known as "bTree"), is a self balancing tree that takes in a size and organizes data similar to a binary tree.
//-------
// Command Line Options
//-------
No special options have been implemented.
//-------
// Organization of Code
//-------
The Organization of the code is as follows:
The header file contains the function signatures, and two classes one of them handles the node individually and inside the node class there is a struct key. The source code contains all the function and the handling of the program.
//-------
// Functions, Methods, Procedures
//-------
There are multiple function for inserting, finding, deleting, and printing. For the insert there is an insert function and a splitting function. The find function it's just by itself, where it's similar to a binary tree. The delete function is the most complex since it uses several functions where it grabs previous and next children. Or unites nodes with the next child. And other sort of algorithms.
//-------
// Efficiency
//-------
The bTree has an average time of log(n) this is the case for most self balancing trees.
//-------
// Known Bugs
//-------
Sometimes it'll have a seg fault when the tree is big and the delete is trying to be done.

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//-------
//Testing
//-------

$ ./bTree
3
0
Go
Gators
0
Hello
Gators
2
Hello
Gators
2
Go
Gators
2
Hi
Key Not Found
1
Go
2
Go
Key Not Found
5

$ ./bTree
3
0
Hello
World
0
Egg
Cheese
0
Mouse
Keyboard
3
Egg
Hello
Mouse
5

$ ./bTree
4
0
student
s
0
nemo
n
0
TA
t
0
mario
m
0
luigi
l
0
zelda
z
3
TA
luigi
mario
```

nemo
student
zelda
2
TA
t
1
student
3
TA
luigi
mario
nemo
zelda
2
nemo
n
2
TA
t