Lab 2: Binary Search Tree

09-21-2020

# Monday 09-21-2020 Pt. 1

## Goals

* Read through .zip contents
* Research bit fields
* Read chapter 5 of the book
* Understand the assignment
* Start to plan my implementation

## Notes

* I am building a double threaded binary tree. This means that leaf nodes will have pointers (threads) that point to the inorder successors and predecessors (left, root, right) of the current node.
* Bitfields allow you to assign variables a memory allocation of a specific number of bits
  + Unsigned int a : 6;
  + For a Boolean bitfield, us bool a : 1;
* I am implementing a DT BST-based dictionary in the BST.h and BSTNode.h files

## Results

* I have a basic understanding of what I am doing
* I think I am going to separate my implementations into separate files so it is clear what work is mine.
* I still want to look at the double-threaded binary search tree implementation linked in the lab more in depth to understand the logic flow

# Monday 09-21-2020 Pt. 2

## Goals

* Now that I have an idea of what I’m gonna be doing, I want to start to build it out.
* I want to build the BSTNode class out to accommodate to the double threading
* I might start to build the BST class, but only enough to test my code in main.cpp.
* I need to make sure to use bitfields and understand how they work
* I don’t understand the point of the dummy node, but I need to look into that

## Notes

* I added the leftBit and rightBit class variables to BSTNode.
* I added four methods to the BSTNode class. They are getters/setters and start on line 45, where it says my name
* I’m stumped as to the need for a dummy pointer. I think I should wait to start writing my class until I clarify its purpose and if I want to use one
* It think it will make it clearer if I move the implementations inside the class, as then you can clearly see what I’ve updated/written

## Results

* I updated the BSTNode class to make it compatible with a double-threaded binary tree. Hopefully the rest of the time I spend programming will be involved the BST class.