

## Tree Traversals

4-3-2002

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## Opening Discussion

- What did we talk about last class?
- Do you have any questions about assignments? I am changing assignment #5 so it only includes the first two objectives. The other two will be assignment #6 and you get off from making a SubStr3 class. I will be posting a new full description.

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## Traversals

- The nominal topic for today is traversals so we will discuss that very briefly. After that we will just code.
- Your book discusses traversals for iterators. This is quite different from the recursive traversals we have mentioned because they can't be recursive. Instead you have to implement a data structure to help remember the places you have been or need to go.

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### **Stack or Queue?**

- If you use a stack to remember where you have been you get a traversal like the ones we have discussed. Whether it is preorder, inorder, or postorder depends only on exactly when you return that object from the iterator. These are called depth-first traversals.
- If you use a queue you get a slightly different behavior. You get a breadth-first traversal. Here you go across each level.

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### **Minute Essay**

- Give a brief description of why using a stack vs. a queue produces such a drastically different traversal.
- I think I'm going to swap the next two lecture topics with the two after them so we cover binary trees earlier.

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