CSS2B Final Data Structures Project

Description: You will be creating a program which utilizes one of the data structures we covered in this class. The data structure should use the templated Node<Item> class. This won't be hard since most of the classes we programmed used Node<Item>. This will be a group project. There will be 3-4 people per group.

In addition to the Node<Item> class, your project must have at least 2 classes you create, and then a **`main( )`** driver file.

Furthermore, your group should submit a 1 – 2 paragraph proposal describing what you intend to do and how the work will be distributed among the group. Also, discuss how many classes you foresee having to implement and the reasoning behind them. You are allowed to change this later, but I want to see your group getting started early in the process of creating your project by trying to map out your objectives.

Items to submit and their scoring breakdown:

1. **Proposal and Group Members** – *10 points* **DUE** April 27th
    a. If you don't have a group, let me know by April 24th so I can assign you to a group.
    b. The proposal will be the first item you submit.
2. **Code** – *50 points*
    a. For the code, I will be looking for compilation without errors, correct output results, good programming structure, proper commenting (comment ALL functions), and that you implemented code using best practices (coding for potential errors, use of proper styling, etc).
3. **Report** – *20 points*
    a. Cover page with group member names and project name (and group name, if you have one).
    b. Project description: describe what your project is and what it will do
    c. UML Class Diagrams: A class diagram for each class.
    d. Brief description of each class and what it will do and how it works in the bigger picture of your project. Also show runtimes in Big O notation for large functions.
    e. Summary from each group member, describing what they did and what they learned.
    f. Discussion about what you would change and/or improve if you could restart the project
    g. References: Any resources you may have looked at or used should be listed here.

    Make sure you have each of these points covered in your reflections report. It may be a good idea to write this as you go, so you aren't trying to complete it all at once.

Final Project

4. **Presentation** – *20 points*
    a. A short presentation done in Powerpoint/Google Slides/Prezi/Sway/etc, where the team members discuss the project during our finals exam time.
    b. You should be ready to cover these points during the presentation.
        i. Group and project name (and group name, if you have one).
        ii. Project description, using relevant UML diagrams. Show us why you did what you did.
        iii. Highlight the specific data structure you did.
        iv. Show a demo of your code. Your team should have a laptop available to show your code and presentation.
        v. Let us know what future work would be nice to implement for your project. This could be something you had planned to do if you had more time, or something that you'd like to add to it, now that you've completed what you intended to do.

Due Date: Everything (except proposal, since it's due early) due finals week, at the beginning of our allotted finals time.

Some resources, if you'd like to include graphics:

SDL Library: https://www.libsdl.org/

SFML Library: https://www.sfml-dev.org/

Ncurses Library: http://tldp.org/HOWTO/NCURSES-Programming-HOWTO/intro.html