CS5200 Homework Assignment #4

Due Dec. 7, 2001

This homework assignment is broken up into a number of steps. Each step should only take a couple of days to complete. Please take to stay on schedule in implementing each step so you can have time to ask questions in class. You do not need to turn your project in after ever step. Rather, you will only need to submit your project after you have completed all of the steps.

Please note that some new code and project files may be given to you throughout the homework assignment. Please save the files you edit. Backup you work.

Step 1

1. Download hw4a.zip and unzip into a empty directory.

2. Study the existing code by stepping through the existing test cases. Pay particular attention to how the save and load routines work.

3. Write test cases for the SocketAddress class. Five empty test functions have already been created for you. You just need to write the test cases.

4. Implement and time a LogicalClock class. You will need to create a LogicalClock.cpp and LogicalClock.h files and add them to the project. The LogicalClock class will need to following methods:

    a constructor
    something to increment the clock
    something that compares and merges another logical clock
    a save method to package up a clock's value into a character buffer
    a load method that restore a clock's value from a character buffer

    You may also find it useful to implement following optional methods and operators:

    a copy constructor
    the ++ operator
    all the comparison operators
    the = operator

    Pattern you test cases after the test cases for all of the other classes. The call to LogicalClock::run_tests is already in TestPackageDlg.cpp.

Be sure that your test cases are thorough.

Step 2

1. Backup your work. Download hw4b.zip and unzip into the same directory as before.

2. Study the message class

3. Implement the send and receive methods for the message class.

4. Add some additional test cases for the message class that tests the send and receive methods. See Message::test5()