SEng422/522: Project Statement

Summer 2006 [Demonstration and Report due Friday, July 21st in lab]

The project consists essentially of implementing in Java or C++ some of the CORBA objects identified for the Weather Mapping System, deploying them, and then testing them using a Java or C++ Client. The implementation will be based on the software architecture designed during the lab sessions.

1. Based on the IDL codes generated in Lab 5, implement in C++ and/or Java. You may implement weather instruments as simple random number generators. Use the following range for the weather readings:
   - Temperature: [-80oC, +70oC] (oC: Degree Celsius)
   - Pressure: [800,1100mbar] (mbar: millibars)
   - Wind Speed: [0, 250mph] (e.g. mph: miles per hour).
2. Deploy copies of your packages on two different machines. Each server runs on a separate machine, and represents a remote weather station.
3. Implement the data collection client; the data collection client is in principle deployed on a central and separate computer. The data collection client is a CORBA client that will request and store (in a file or database) weather data from the two remote weather stations. The data collection client may access a remote station by first obtaining a reference to a Station instance from a corresponding server. For testing purpose, the data collection client must provide a user interface through which viewers can access collected weather data. For example, the user can select maximum, minimum, or average of selected weather parameters (e.g. temperature, pressure etc.) for a given location (e.g., weather station). Deploy the data collection client on a third machine.
4. Deploy and test your application. In order to simulate the different weather stations, you'll deploy copies of your components on two different machines (each running on different machine). You'll also deploy your client on a separate computer (e.g., a third one).

Notes: You must provide with your report (a hard copy) of the source code of the components and the client programs. You don't need to provide the source code generated automatically (e.g., skeleton, stubs etc.) by the IDL compiler.

Marking Guidelines

1. Report (30%)

1) Overview of your application (2 or more pages): purpose of the application, how it works (architecture, design), difficulties encountered during development and solutions adopted (10%).
2) Sensor component source code (5%).
3) Station component source code (5%).
4) Data collection client source code (10%).

2. **Demo (70%) [15 Minutes]**
    1) System Works properly, including the connections between the servers and the CORBA client (40%).
    2) Interface Design: present the minimum functionalities of client side (5%).
    3) Instruments implementation (follow the guidelines given) (5%).
    4) Proper data storage at the client (e.g. file or database) (5%).
    5) Five-minute presentation (15%).