CSE 5306 Lab 3 - A Weather Client Using XML Spring 2017

Objectives:

1. Exposure to XML & SOAP
2. Using Sockets on the WWW

Due: April 29, 11:59:59 p.m.

Project Specification:

These will be individual projects. For this lab you will use any platform you chose.

You will create a client application that will connect to the National Weather Service web site using HTTP and XML and/or SOAP and display current weather conditions. Your client process will connect to the server over a socket connection and request weather information for a certain location. The National Weather Service specifies the location using latitude and longitude instead of zip code. The user should be able to enter coordinates into the client program and get a current update for that location. This service is only updated hourly, so you should not request updates at short intervals. You should have a manual refresh button that will reconnect and retrieve the information again

Include at least four of the following variables in your display: Maximum Temperature, Minimum Temperature, Dew point Temperature, 12 Hour Probability of Precipitation, Cloud Cover Amount, Wind Speed, Wind Direction, Weather Icons, Wave Height.

References:

1. http://w1.weather.gov/xml/current_obs/ Web page describing the service and giving lots of other links. By following the links at this site you should be able to get a quick and easy introduction to Web Services and how they are exposed via SOAP and accessed via XML. You should also find tool kits for several different environments.

Writeup:

Your write-up should include instructions on how to compile and run your program. Ideally it should be complete enough that the TA can test your program without your being there. Your writeup should include any known bugs and limitations in your programs. If you made any assumptions you should document what you decided and why. This writeup should be in text format and should be submitted along with your code.

Submission Guidelines:

Submit your code via Blackboard. You should zip your source files and other necessary items like project definitions, classes, special controls, DLLs, etc. and your writeup into a name_number.zip. Be sure that you include everything necessary to unzip this file on another machine and compile and run it. This might include forms, modules, classes, config. files, etc.

Make sure your name and your student ID are listed in your writeup, and in comments in your source code. You may resubmit the project at any time. Late submissions will be accepted at a penalty of 10 points per day. This penalty will apply regardless of whether you have other excuses. In other words, it is better to submit this project early or on time. If the TA can not run your program based on the information in your writeup then he will email you to schedule a demo.

If your program is not working by the deadline, send it anyway and review it with the TA for partial credit. Do not take a zero or excessive late penalties just because it isn't working yet. We will make an effort to grade you on the work you have done.

Grading:

Points	element
10	Client connects to weather server via sockets
35	Client uses SOAP and/or XML to retrieve the
20	Client displays correct weather information (at least 4 variables)
10	Session disconnects after fetching data
10	Client reconnects on command for a refresh
10	TA discretion for clean labs
05	Comments in code

To receive full credit for comments in the code you should have **brief** headers at the start of every module/ subroutine/ function explaining the inputs, outputs and function of the module. To a large extent VB modules are standardized and self explanatory so that more elaborate headers are not necessary. You should have a comment on every data item explaining what it is about. (Almost) every line of code should have a comment explaining what is going on. A comment such as /* Add 1 to counter */ will not be sufficient. The comment should explain what is being counted.

Deductions for failing to follow directions:

-2 Including absolute/ binary/ executable module in submission
-2 Submitting writeup in other than plain ASCII text format
-2 Submitted file has a name other than name_number.zip.
-5 Not submitting a make file or a run.sh file or the equivalent for the IDE if the language requires it.
-10 Submitting a complete installation of the java virtual machine.

Important Note:

You may discuss the problem definition and tools with other students. You may discuss the lab requirements. You may discuss or share project designs. All coding work must be your own. You may use any book, WWW reference or other people's programs (but not those of other students in the class) as a reference as long as you cite that reference in the comments. If you use parts of other programs or code from web sites or books YOU MUST CITE THOSE REFERENCES. If we detect that portions of your program match portions of any other student's program it will be presumed that you have collaborated unless you both cite some other source for the code. You must not violate UTA, state of Texas or US laws or professional ethics. Any violations, however small, will not be tolerated.