CSc 521 Programming Assignment 2 Kutztown University

DUE: TBD
POINTS: 40
PURPOSE: To implement a web-based application using JDBC and servlets
DESCRIPTION: Implement a project that can access several tables of data, store them as needed, and permit access to the data.

In this project, the scope of data to be processed will be expanded, and data will be read dynamically over the internet. The user will have the option of accessing data from any of a number of tables.

You will construct a web page containing a form that permits the user to select information available from your chosen website via the (at least) six queries you designated with your data set choice, or those that evolved as you worked with the data. It prints requested information, according to the table or tables selected, error checking on the client side each time a request is made.

Present the user with a form that permits them to choose a specific classification of information from among the options available.

Once chosen, present a form (inside a DIV?) appropriate to obtain information required to perform the user's choice. For example, to obtain sun data for one day over five years, you need a month, day, and year and will display a sunrise and sunset acquired from the five tables that would need to be accessed from the USNO site.

We are looking for your work to make data available in formats not available on the websites. You are to store various data, in different forms, with several fields (at least) for a row of a table. For example, most inquiries to the USNO website return a table of values over a year's time, and the user would obtain the table(s), store it or them in the database if it isn't (they aren't) already there, and then acquire and display the specific data requested.

To access your data, you might construct a URL with parameters appended. This is discussed in an archived post in the forum about the **Builder** pattern (do a search). Consult the GoF doc here: http://www.blackwasp.co.uk/gofpatterns.aspx

The preparation of the output will be done by writing a servlet to which the form data will be submitted. The servlet will take the form data, check if the required tables are present in the database, and if not, fetch them. Then, it will obtain the data from the database and write the result back to the user's browser. This should be done using basic Ajax principles we will cover asap.

Notes:

- Your path/classpath for accessing the database on acad and compiling servlets must be updated. See http://faculty.kutztown.edu/spiegel/csc521/TomcatServletDeployment/. The TomcatPrep.pdf file has the info.
- Your program will be able to store no more than 5 tables.
- Name your tables in a unique fashion to be sure everyone's tables will have unique names.
- You MUST keep track of which data is stored and remove the table(s) when other tables need the space. Is there some way to determine when a page is closed, and tell the servlets to clean the database? We'll have to explore this.
- Error-check the form data to the greatest extent possible using client-side scripts in the browser before submission to the server.

- Input is to be confirmed error free or otherwise forced to be legitimate. Use scripts to create the input devices. For example, if a month and day are in a drop-down menu, don't populate the day until the month is chosen, and then put the correct number of days in that menu.
- Deployment:
  - Tomcat sniffs your webapps directory and handles servlets there. Web archives go there
  - **DO NOT WORK IN THE webapps DIRECTORY!!!!**
    - It belongs to Tomcat
  - Place the html in your www directory on acad and make sure that you set permissions correctly (775 for directories, 644 for files)!
- Provide a plain text readme with links for the project (the servlet must be deployed in your webapps so I can test it) and Javadoc (or other documentation tool-created site. Include several sample query strings to demonstrate how your site was accessed. Detail your design decisions for the project.
  - The readme MUST include:
    - a narrative on the manner in which you handled the database. In particular, how did you decide which table to purge when a new table was to be added when five tables were already stored?
    - Directions for using your project.
- Test your application with both Edge and Firefox/Chrome, or other Mozilla based browser.

<u>Deliverables:</u>

- Acad: Your html, servlets and any other (script?) files. Zip files okay. Directories can NOT be submitted via turnin.
- Readme: In the Phase 2 dropbox on D2L. You can also submit via turnin.
  - **4 point penalty for not providing links.**