

IDS517 2018 Fall Project.

Software such as Minitab, SPSS, SAS, R provide both interactive (GUI) and command based (line by line) interfaces with either complete or partial duality (meaning some software support both interfaces completely and others give only some options in the interactive or command based interfaces). For this project you will provide a limited dual interface capable of accessing online data stored in a RDBMS, provide certain numeric and graphic data analysis, and provide data export and import / export of command files. Sample scripts will be provided to test your work. Keep in mind this application is expected to have multiple concurrent users.

Development and deployment requirements include MVC architecture, Apache MyFaces jsf 2.2, Apache Tomahawk, Apache Commons Math, and jFreeChart graphics library, and the MySQL RDBMS, and Apache Tomcat 8.5 container. The MySQL RDBMS world database is available for sample datasets (it has country, city, and country language tables), however additional schemas and database tables may be provided. The application needs to retrieve data from the database schema tables, in other words have a read only access.

The application needs to provide a login / logout capability to connect to any database that the user has access to. Once connected, the user must be able to upload a script (as a text command file) and export the (modified) script using an interactive facility, which you will provide. There needs to be a dual facility to execute commands from an uploaded command file (line by line) or from interactive menu choices (GUI). When executing commands using interactive choices, a command file should be generated that the user can later export with subsequent ability to import. Also when using an imported command file the user should have the option to add interactive commands to that file for subsequent export. These files are temporary and not stored in a database table.

Following is the functionality list to be implemented using script files as well as interactive menu choices. The first part is the command, additional parts are parameters (used in running that command), and comments are after the double slashes (//):

- **tableList** // display available tables
- **import** *commandFile* // import file
- **export** *commandFile* // export file - can be GUI only
- **use** *tableName* // select table to use in subsequent commands
- **columnList** // display columns in selected table
- **select** *columns* // select columns to use in subsequent commands
- **descriptiveStats** // display numeric descriptive statistics for *columns*
- **scatterplot** *yVariable xVariable* // display scatterplot *response vs. predictor*
- **corr** *yVariable xVariable* // display coefficient of correlation with p-value
- **hist** *Variable* // display histogram
- **regress** *yVariable xVariable* // regress *response vs. predictor*

- **exit**

// exit application, logout from database