Project #3 – Interactive Visualization using Tableau

Course: EN 605.662 (Data Visualization)

Professor: J. Caban

Announced: First Day of Module #5

Due: First Day of Module #7

I. Purpose:

A number of software tools have been designed to help users visually explore data and to quickly create visualizations or dashboards. Popular off-the-shelf tools include Tableau, Qlikview, Spotfire, Microsoft Power BI, MicroStrategy, Birst, and Logi among many others. The purpose of this assignment is to use existing software tools to formulate and answer a series of analytical questions about a specific dataset of your choice. After writing a number of analytical questions or hypotheses, you must create a Tableau dashboard designed to present some of the answers of your hypotheses.

II. Task:

1. Pick a dataset of a domain that you are interested in. The data should have more than 10 independent variables and over 1,000 rows. If you used such a dataset for project #1, you are welcomed to reuse the same dataset for this project. However, you are not obligated to use the same dataset as in Project #2.
2. Describe your data in writing by thoroughly explaining the dataset and its properties. In a table, please list each of the data elements, briefly describe the meaning of them, show the corresponding descriptive statistics (e.g. min, max, average, etc..) and their category (e.g. nominal, ordinal, quantitative, etc…).
3. List five analytical questions that users examining the data might have.
4. By using Tableau (students can download an educational license that will be valid for 1 year) develop a minimum of three visualizations (i.e. Tableau worksheets) for different attributes of the data that can be used to answer some of your analytical questions.
5. Student must use a minimum of two different visualization techniques (i.e. bar chart, stacked bar, pie chart, line chart, table, etc…).
6. Combine the different visualizations (i.e. the 3+ Tableau worksheets described above) into a single Tableau dashboard.
7. Connect the different visualizations using at least two global filters. This is, when a user updates the filters all the 3+ visualizations within the Tableau dashboard will update.
8. Create an extract of the dashboard with embedded data (i.e. export your dashboard as a .twbx file).
9. Students must (a) submit dashboard as part of their project, (b) publish dashboard into Tableau Public, and (c) post a screenshot and description of their dashboard into the Project #3 discussion forum in Blackboard.

III. Useful Links

- http://www.tableau.com/academic/students
- http://www.tableau.com/learn/training

IV. What to submit

1. Paper (2+ pages). I'd suggest something like:
    - Title & Student's Name
    - Introduction – explain the importance of the topic and data
    - Dataset – references and describe the data (i.e. table with field names, descriptions, and descriptive statistics)
    - Analytical Questions – list of at least 5 analytical questions
    - Design – design process, screenshot(s) of the different visualizations, and explanation of overall dashboard
    - Discussion – explain how the dashboard answers some of the analytical questions
2. Tableau (.twb) file with corresponding datasets
3. Tableau (.twbx) file containing the embedded data, the different visualizations (i.e. worksheets), and the final dashboard.
4. Screenshot(s): Please submit at least one separate image of dashboard

Submit all the documents through Blackboard. Please use the following file format: your_lastname_project03.zip

V. Other required tasks:

1. Post dashboard to Tableau Public
2. Post a screenshot of the dashboard to the Blackboard Project #3 discussion forum. In your post please include (a) the link to Tableau Public so other students can test your dashboard and (b) a short description of your dashboard (this can be a copy/paste of a few sentences from your paper).
3. Between Week #7 (due date for project #3) and Week #8, please go to Blackboard and comment under at least 5 dashboards submitted by other students

VI. Grading

Students will be evaluated based on the quality of the work, logic, clarity, and effort put into the design. Specifically,

- What dataset was used? There are no right or wrong datasets, but put effort in finding something of interest to you.
- How well the data was explored and described?
- Quality of the five analytical questions that users examining the data might be wondering.
- The overall design of the different Tableau worksheets and overall dashboard.
- Does the dashboard use at least two global filters?
- Are all the charts well designed? Do they have titles, labels in axis, etc..?
- Included .twb, .twbx, and dataset?
- Submitted screenshots of the dashboard?
- Quality of the paper and overall explanation and justification.
- Posted dashboard to Tableau public
- Posted screenshot and link of dashboard to forum
- Commented in at least five other posts