Goals: Welcome to CMPS165! The main goal of this course is to learn how to create interactive visualization on the web using D3 (d3.js.org)

In order to use D3 effectively, we will learn a variety of web tools including web inspection tools (brackets), HTML, CSS, SVG, and JAVASCRIPT. We will learn and use the following data formats – csv and json. Focus will be in understanding the fundamentals behind binding data to visuals. Examples will include creating a variety of infographics such as bar charts, scatter plots, radial maps, interactive motion charts (similar to ones created by Hans Rosling using his famous software Gapminder) and geomapping.

Several inspiring examples of data visualizations drawn from social sciences, public policy, and data journalism will be presented. Detailed attention will be provided to data scaling, axes, labeling, color, annotations, and legends to create visualizations that set them apart from mediocre visualizations.

I expect that you will be empowered to create compelling data visualizations on the web, a rare and unique skill. These skills are in high demand. I hope that you will become useful and helpful to society. You could also use these skills to find a coveted job or become rich and famous.

Textbook:
Interactive Data Visualization for the Web by Scott Murray

(a pdf version of the book is available for free online at the following website:
http://chimera.labs.oreilly.com/books/1230000000345/)

Additional Websites:
Brackets.io
w3schools.com
developer.mozilla.org

Catalog Description: Basics of open source programming tools to perform data analysis and create interactive visualizations and maps for the web; data integrity and scraping, statistical computation, simple and novel visualization, geomapping, examples drawn from social sciences, public policy, and data journalism.

Prerequisites: CMPS 12B or equivalent. Most of all, I expect excellent team work (working in a collaborative classroom environment), excellent motivation, and excellent effort. Prior knowledge of HTML, CSS, SVG or Javascript is not required.

Class Presence: Class presence is expected and required with an attendance record of 90% or above, that is, 18 classes or more (out of 20). I will use a teaching style where the classroom will
mostly be converted into a hands-on lab where we will be working together to complete tasks that will build successively upon each other. So, if you are left behind, at any stage, then it may requires substantial resources to catch up. An analogy is an expedition to climb Mount Everest. If you are not up to it, please do not join the expedition. On the other hand, if you are committed, you will enjoy breath-taking beauty of interactive web visualization. Stellar examples of interactive web visualizations created by practitioners will be presented in the class.

**Evaluations**: Each class will require completion of certain micro-tasks. Examples include successfully installing software such as brackets, D3, preparing data files, making simple html, css, javascript codes, and simple interactive visualizations. These tasks will be designed so that you will be able to complete them in the classroom or soon thereafter. If you complete all these tasks, you will receive a P grade (if you registered for P/NP) or a C grade (if you are taking the class for a grade). All students are required to complete all these tasks. If you do not complete these tasks within a few days of assignment, you will not pass the class, that is, both completion of the tasks and keeping up with the pace is critical for success. These tasks, all together, constitute 60 points.

In addition, there will be three programming projects: 2 mini-projects, and 1 final project, worth 7 points, 8 points, and 25 points respectively for a total of 40 points. In addition, there will be opportunities to earn bonus points.

Grades are as follows:
C: >= 60
C+/B-/B: >=65, 70, 75
B+/A-/A: >=85, 90, 95

Posted Date: 11/03/2014