

**EECS 428 / ECE 578
DATA VISUALIZATION
Spring 2016**

ASSIGNMENT 3

***Due Date: Sunday, May 1st, 2016, 23:59
(14 Points)***

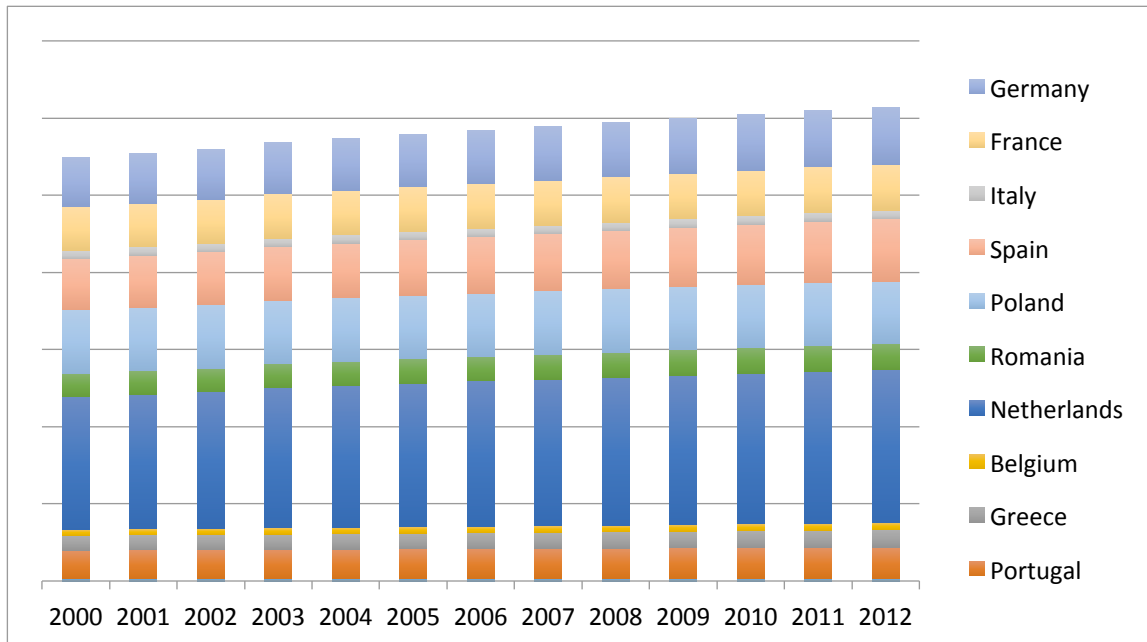
Assignment Submission: Turn in your assignment by the due date through LMS. Prepare and upload **one zip file**. Name the zip file as <your first name>_<your last name>_assignment3. See the question for what you should return.

You can discuss JavaScript, D3 and questions with each other. However, implementation must be your own; you must neither copy from nor provide assistance to anybody else (including online resources). If you need guidance for any question, talk to the instructor or TA.

In this assignment, you will use the same data of 192 countries that you used in the previous assignment (*countries.json*). As you remember, the file contains information about the population, GDP, life expectancy, and many other aspects for various countries from 1995 to 2012. You will plot population trend of the countries from 2000 to 2012, similar to Part A of Assignment 2. However, you will not only visualize population information for all counties, but you will also enable interactivity to have a closer look at the data with different charts.

The main graph will be a stacked bar chart that shows the population of ***all countries in a selected continent*** from 2000 to 2012 as can be seen in following sample figure. Height of each stacked bar should be proportional to the population of the corresponding country. Make sure to use different colors for the counties. A dropdown menu (select box) that lists all continents specified in the file should enable the continent selection. Whenever a different continent is selected from the dropdown menu, the stacked bar chart should be updated with the population data of all countries in this new continent. Make sure to use animation to smoothly update the chart during changes.

Europe

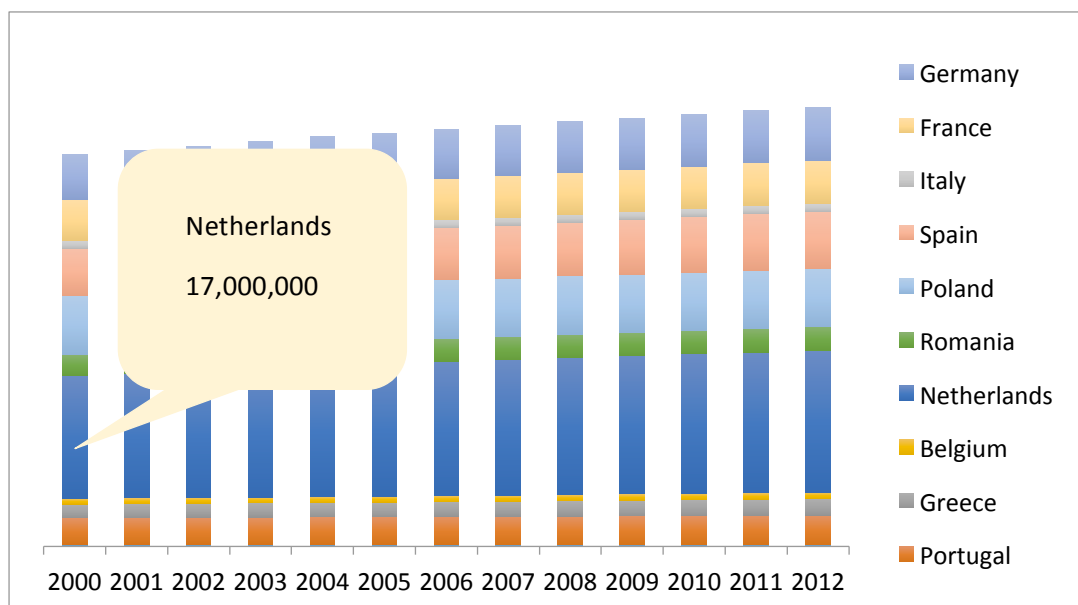


Stacked Bar Chart Events:

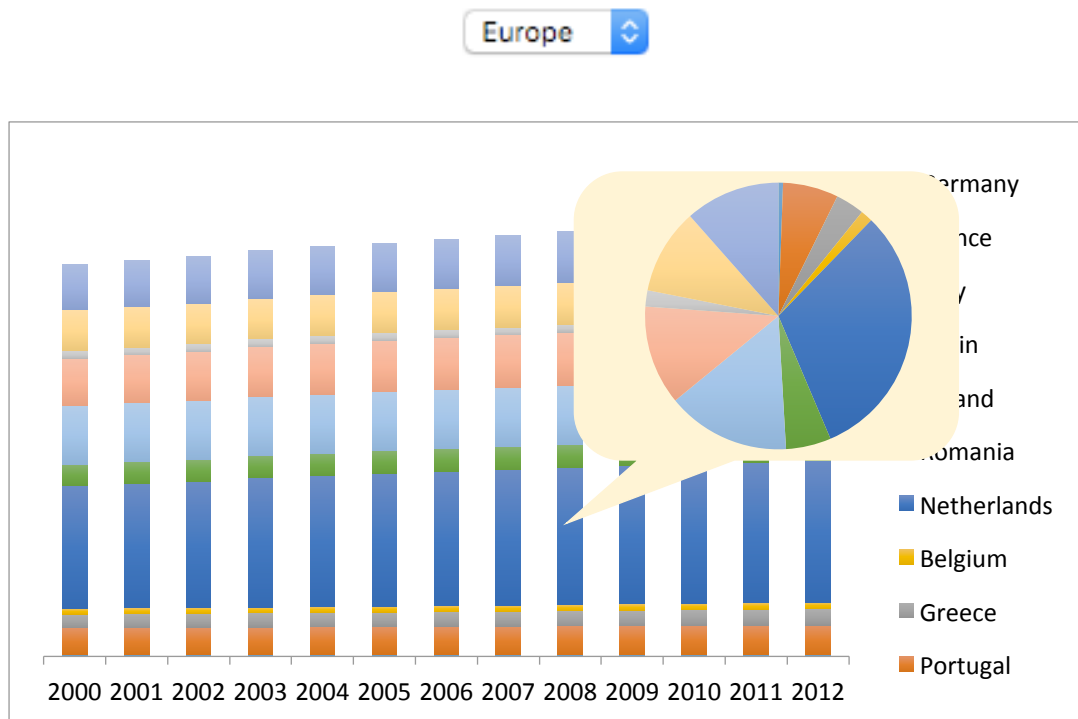
On the main stacked bar chart, enable the following events to highlight various aspects interactively.

Mouse Over: When a mouse moves over a stacked data point (population of a particular country in a particular year) in the stacked bar chart, a tooltip should appear with the name and population data of this country in this particular year. You can create and style the tooltip anyway you prefer.

Europe



Click: When a mouse click event occurs on any stacked data point of a particular year (population of any country in a particular year) in the stacked bar chart, a pie chart should appear with the same population data of all countries in this particular year. Essentially, it shows the same population info in the stack bar chart for this year but in pie chart format. You can create and style the tooltip anyway you prefer.



Double Click: When a mouse double-click event occurs on a stacked data point (population of a particular country in a particular year) in the stacked bar chart, an area chart should appear with the name and population data of the corresponding country from 2000 to 2012 as can be seen in the figure below. Make sure that area chart has proper axes and the axes scale with proper values as the country changes. You can create and style the tooltip anyway you prefer.

In all events, the tooltip location should be close to the event location, ideally, the middle point of the bar where the event is triggered.

Please return in a directory:

- All your HTML, JavaScript and CSS files (you can have sub-directories if you prefer). Your main HTML file should be named as ***index.html***. When we open *index.html* in our web browser (*Chrome* will be used for grading), the visuals should show up in the main page.

Europe

