# D3 Assignment

Information Visualization 2014–2015

## 1 Introduction

In this assignment you will visualize data from the Centraal Bureau voor de Statistiek (CBS). They have contacted you to visualize some historical demographic data. The CBS is particularly interested in gaining perspective on the male-female ratio and the marital status of the citizens. Enclosed with this document is the data that you will need to perform the visualization.

**Requirements:** The assignment is complete when it has met the following requirements:

1. It is written completely in D3.
2. It loads and uses the citizen composition data from the provided CSV.
3. Each year is represented by a grouped bar (in assignment 1) and a stacked bar in assignment 2.
4. Year labels appear below the bars.
5. The size of each bar is computed dynamically using D3 scale.
6. Dynamically computed y-axis on the left-hand size.
7. Dynamically computed x-axis based on CSV data.

The assignment is handed in through Blackboard. The deadline for this assignment is **June 9, 2015** at **12:59** (CET). When your assignment is composed out of multiple files, make and upload a ZIP file.

**Important!** There is not much time to work on this assignment, so make sure that you start on time! Please do not be afraid to ask questions by mailing the teaching assistants Kyriacos (K.C.Shiarlis@uva.nl) or Michiel (michiel.huizing@student.uva.nl).

# 2 Approach

In the assignments you will be making bar charts. To help you getting started some tips in form of a step-by-step guide are given below.

## 2.1 Setting up

The first step is quite easy - you will need some basic files to start working with D3. This includes an HTML file, a CSS file, and of course the D3 library. You will find enough resources on the internet on how to do this.

## 2.2 Basics

Read a tutorial which explains the basics of making bar charts. One of the examples is on Mike Bostock's blog (the creator of the D3 library), [Bostock] who has a nice article which explains the basics of making a bar chart.

## 2.3 Scales and axes

For the axis we will use the scale and axis functions that are part of the D3 library. Use the chapters 17 onwards in [DashD3] and chapters 15 onwards in [MurrayD3] to add dynamic scaling, dynamic y-axis and year labels below the bars.

## 2.4 Loading CSV files

Take a look on how to load the CSV files, which provide the data you will need for the visualization. The code you will need to load files into D3 roughly looks like:

```
d3.csv("meteo.csv", function(data) {
     //ALL code using the data here
});
```

You will find the complete description on how to import CSV in [MurrayBook], chapter 5 (Data), section Binding Data.

If you use Firefox, loading CSV data should not pose any problems. However, when using Google Chrome (or Chromium) data located on your local HD will not load automatically. One option is to load the data from an external source (such as your own webserver) or you can use the following commands:

```
chrome.exe --disable-web-security (For Windows)

open -a Google\ Chrome --args --disable-web-security (For Mac)
```

If the above-mentioned code does not work, try to use Firefox as it will work in there!

# 3 First Assignment

For the first assignment you will make a grouped bar chart of male-female ratio provided in the CSV file `gender_ratio.csv`. The file contains the total number of citizens per year, the number of men in the given year and the number of women in the given year.

**Important** Please note that the file starts in 1901, but we will only need the ratios from the year 1950 onwards. Also, the citizen numbers in the file are divided by 1000. The end result should represent the original numbers (i.e., multiplied by 1000).

Figure 1 shows an example of how your end result may look like.

# 4 Second Assignment

In the last assignment you will be making a stacked bar chart showing the marital status of the citizens in the Netherlands from 1950 onwards. The data you will need for this visualization is provided in `marital_status.csv`. The file contains a total population per year as well as the number of citizens with a particular marital status.

Figure 2 shows an example of how your end result may look like.

# 5 Resources

1. Dashing D3 [DashD3]: https://www.dashingd3js.com
2. Scott Murrays D3 tutorial [MurrayD3]: http://alignedleft.com/tutorials/d3/
3. Scott Murrays Interactive Data Visualization for the Web [Murray-Book], a great book explaining the concepts of D3 in detail, available online: http://chimera.labs.oreilly.com/books/1230000000345/index.html
4. D3 examples with code [D3Ex]: https://github.com/mbostock/d3/wiki/Gallery
5. D3 official documentation wiki [D3Doc]: https://github.com/mbostock/d3/wiki
6. Mike Bostocks blog (author of D3): http://bost.ocks.org/mike/
7. Mike Bostock's about bar charts[Bostock]: http://bost.ocks.org/mike/bar/

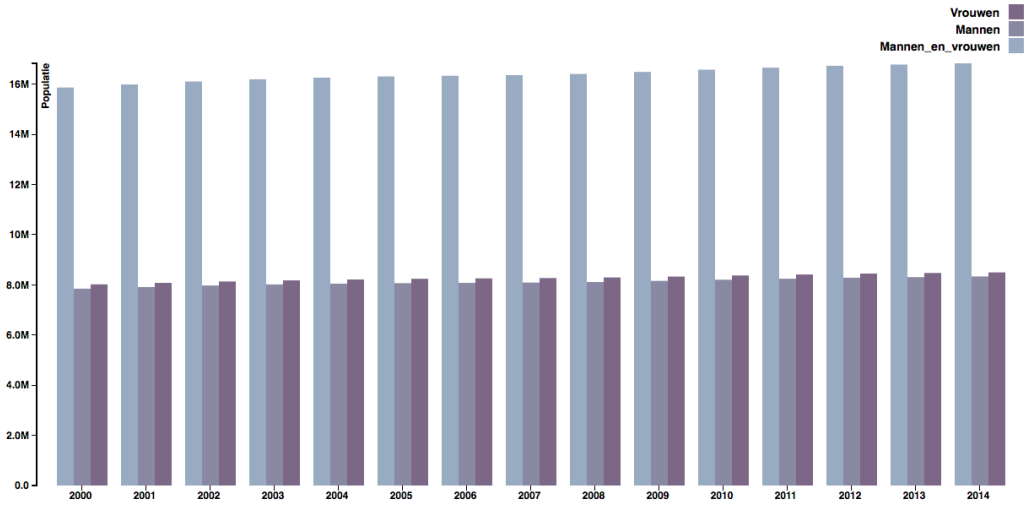


Figure 1: A grouped bar chart example; for demonstration purposes only the period 2000–2014 is depicted.

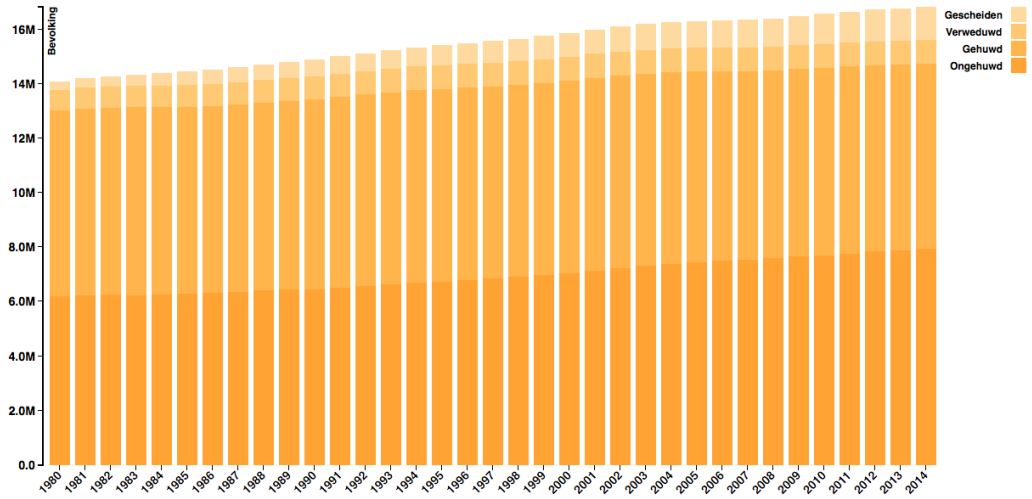


Figure 2: A stacked bar chart example; for demonstration purposes only the period 1980–2014 is depicted.