

Data Processing

College 1 - 2018-11-01



Tim



Nigel



Sander



Kim

Leerdoelen

- je kunt zelf kleine **tools voor dataverwerking maken**
- je kunt een **modulair programma ontwerpen** binnen de grenzen die een programmeeromgeving je geeft
- je **begrijpt hoe je overzichtelijke programma's kunt maken** die goed te begrijpen zijn voor andere programmeurs
- je **weet welke tools voor versiebeheer, testing en code reviews er zijn** om de ontwikkeling van applicaties soepel te laten verlopen
- je **kent de moderne theorie over visualisaties** en kunt deze **toepassen** om visualisaties te bekritiseren en ontwikkelen

Fast Facts

Totaal

7 weken,

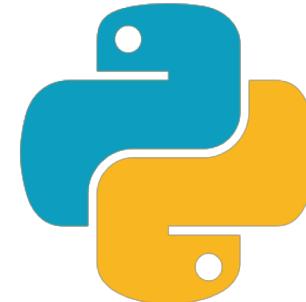
6 programmeeropdrachten,

2 critiques

Per week

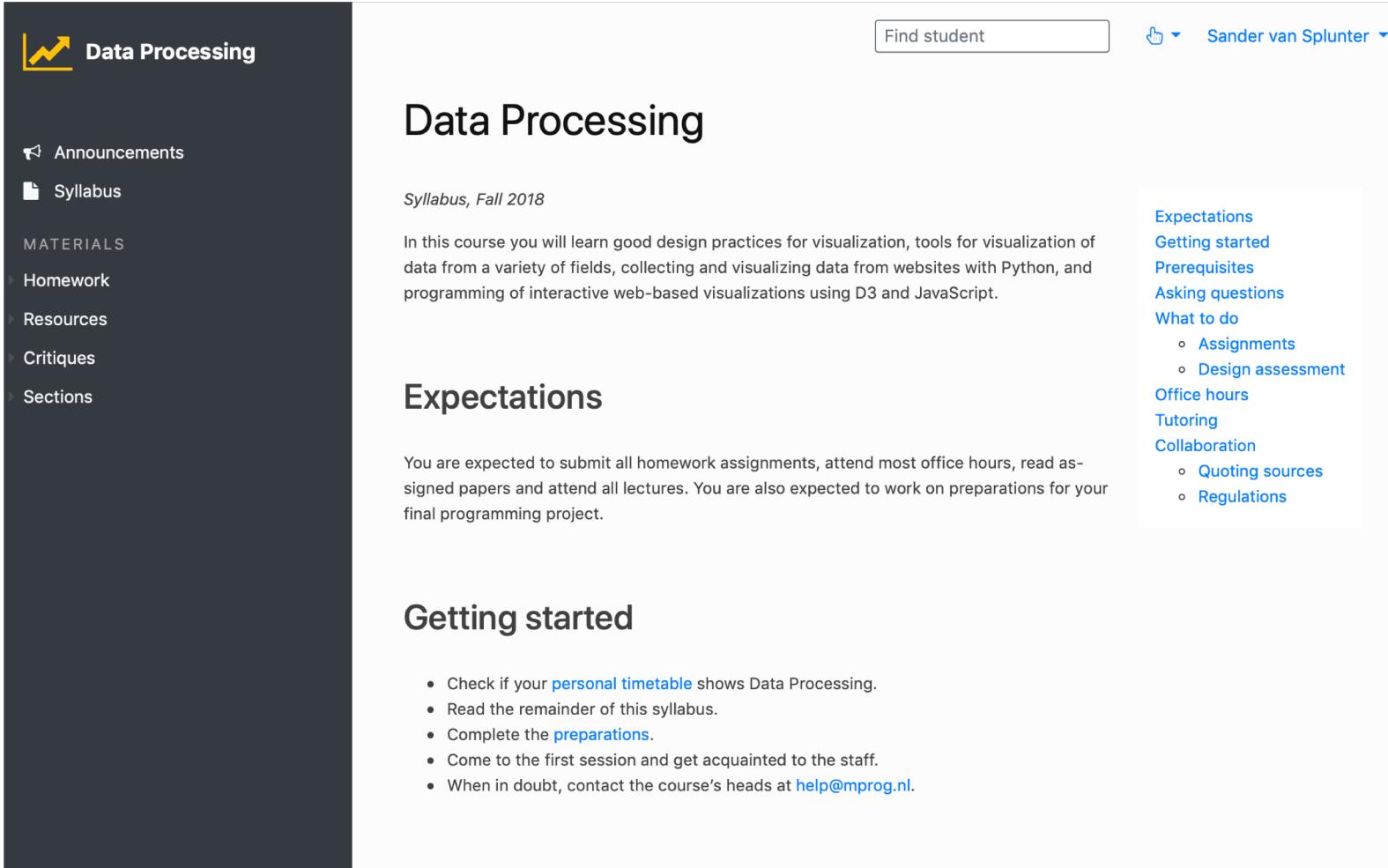
2 uur “werkcollege”

8 uur laptopcollege



no	Assignment	Programming Languages	deadline
1	Scraping IMDB		Wed 7-Nov
2	Exploratory Data Analysis		Wed 14-Nov
3	JavaScript line		Wed 21-Nov
4	D3 bar chart	 	Tue 27-Nov
5	D3 scatterplot	 	Mon 3-Dec
6	Linked views-interim	  	Mon 10-Dec
7	Linked views	  	Mon 17-Dec

Information at <https://data.mprog.nl/>

A screenshot of a course website for "Data Processing". The left sidebar has a dark background with a yellow arrow icon and the text "Data Processing". It includes links for "Announcements", "Syllabus", and sections under "MATERIALS" like "Homework", "Resources", "Critiques", and "Sections". The main content area has a light background. At the top right are a "Find student" search bar and a user dropdown for "Sander van Splunter".

Data Processing

Syllabus, Fall 2018

In this course you will learn good design practices for visualization, tools for visualization of data from a variety of fields, collecting and visualizing data from websites with Python, and programming of interactive web-based visualizations using D3 and JavaScript.

Expectations

You are expected to submit all homework assignments, attend most office hours, read assigned papers and attend all lectures. You are also expected to work on preparations for your final programming project.

Getting started

- Check if your [personal timetable](#) shows Data Processing.
- Read the remainder of this syllabus.
- Complete the [preparations](#).
- Come to the first session and get acquainted to the staff.
- When in doubt, contact the course's heads at help@mprog.nl.

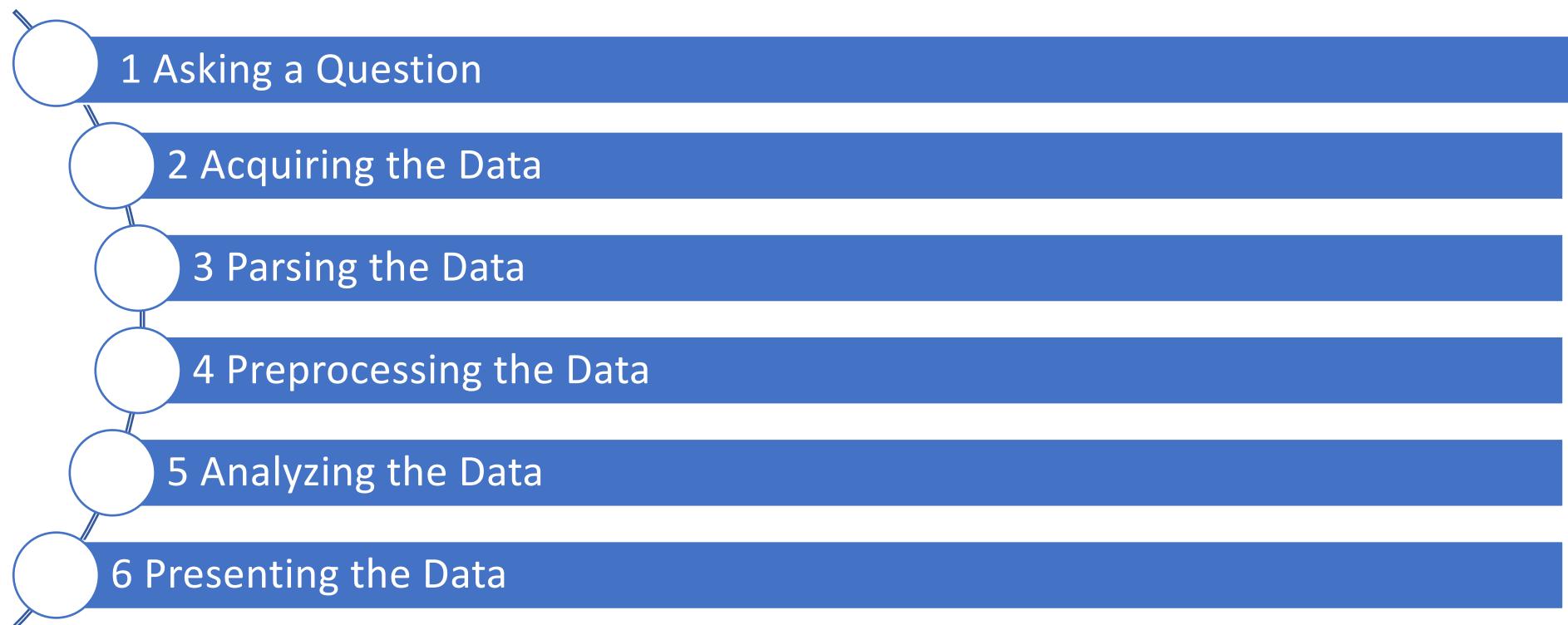
Expectations
[Getting started](#)
[Prerequisites](#)
[Asking questions](#)
[What to do](#)

- [Assignments](#)
- [Design assessment](#)

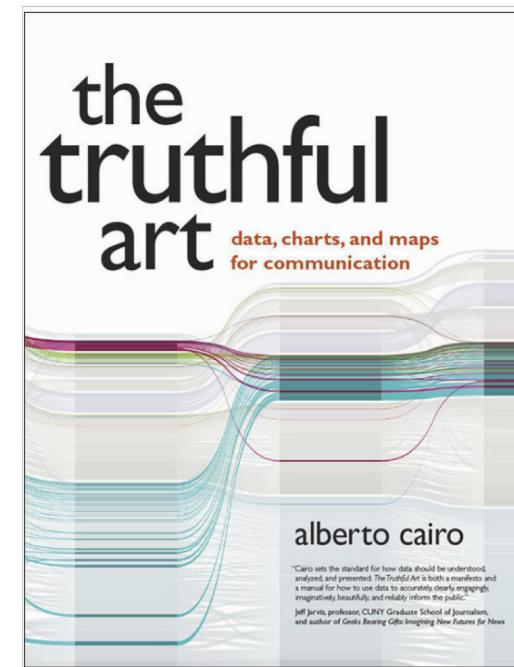
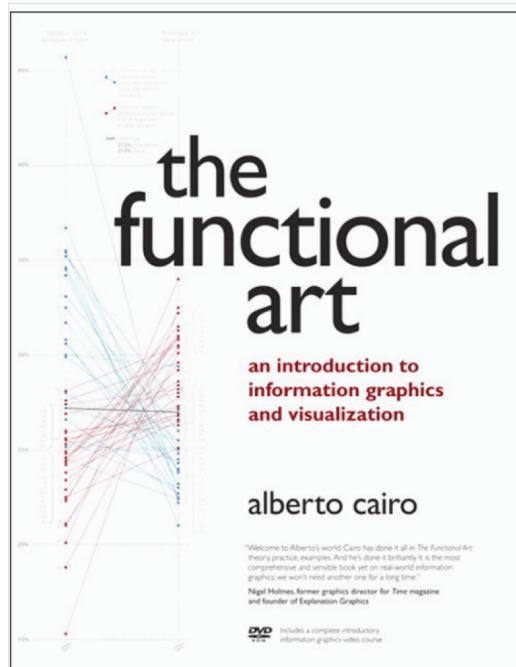
[Office hours](#)
[Tutoring](#)
[Collaboration](#)

- [Quoting sources](#)
- [Regulations](#)

Data Processing Pipeline



Theorie op basis van werk Alberto Cairo



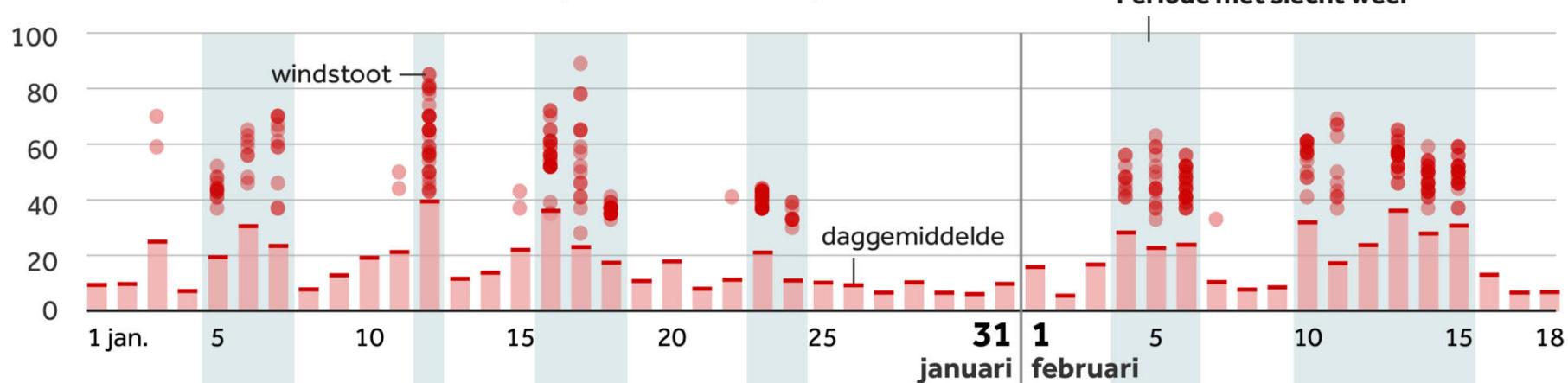
Infographics should be....

Infographics should be....

- Functional as a hammer
- Multilayered as an union
- Beautiful as equations

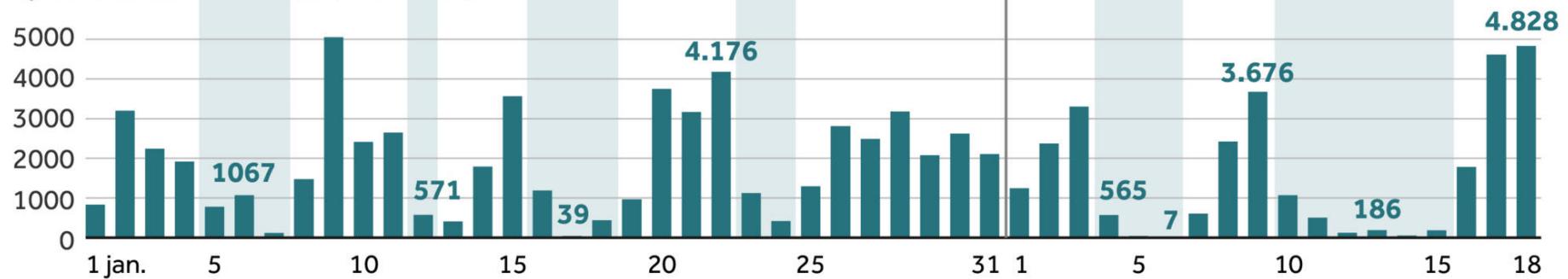
Windsnelheden in Griekenland

Gem. windsnelheden en windstoten in km/u (weerstation Lesbos)



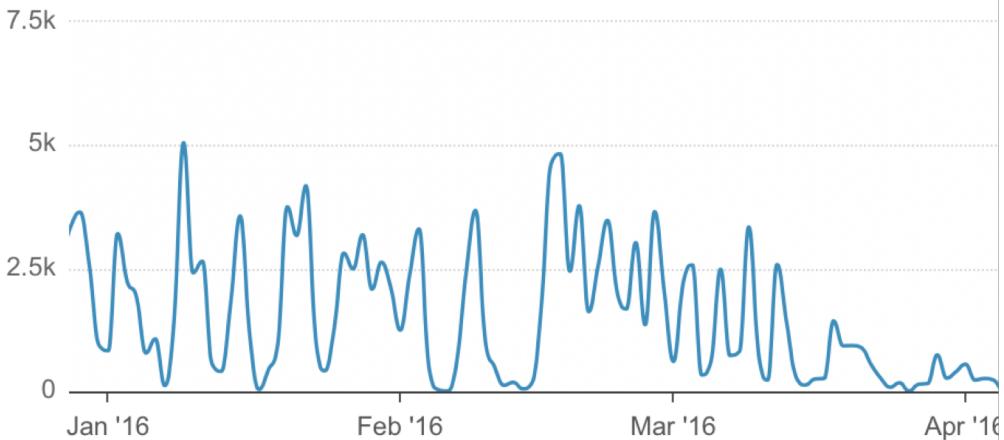
Aankomst vluchtelingen per dag

op de Griekse eilanden (bron: UNHCR)



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Sea arrivals by day

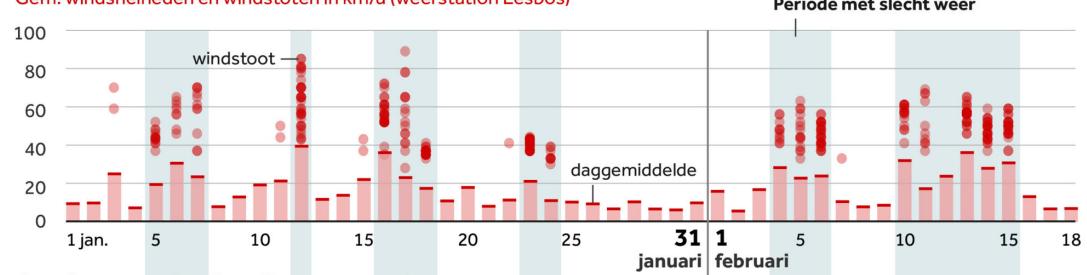


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Station	Weer	Temp (°C)	Chill (°C)	RV (%)	Wind	Wind (m/s)	Zicht (m)	Druk (hPa)
Lauwersoog		9.6	5.9	75	ZZO	9		
Nieuw Beerta		8.8	6.5	79	ZO	4		
Terschelling		9.0	5.4	83	ZO	8	30900	1008.5
Vlieland	geheel bewolkt	9.5	5.5	81	ZZO	10	48500	1008.0
Leeuwarden	zwaar bewolkt	9.2	6.2	74	ZO	6	49400	1009.4
Stavoren	geheel bewolkt	9.6	6.7	77	ZO	6	49800	
Houtribdijk					ZZO	8		

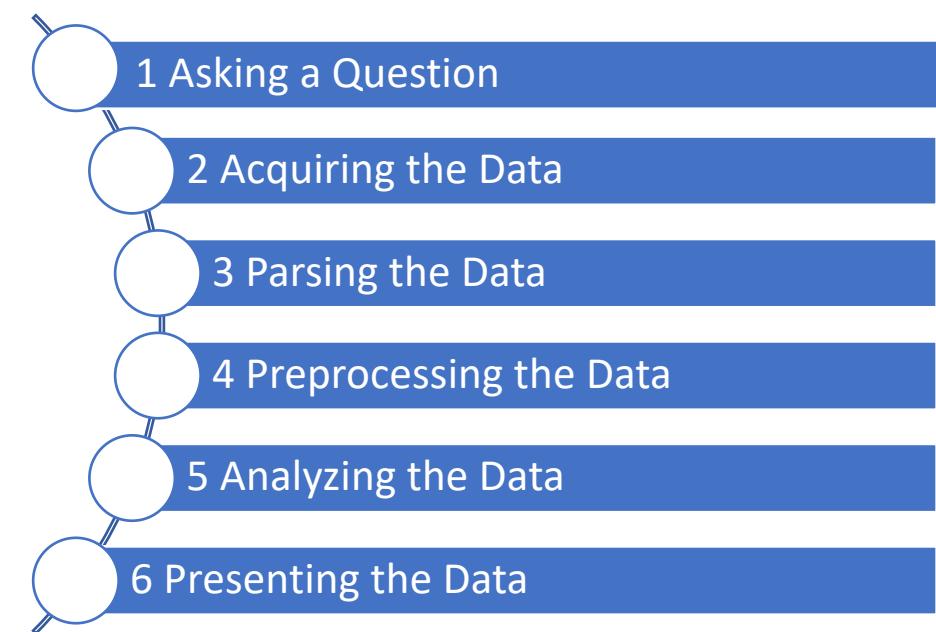
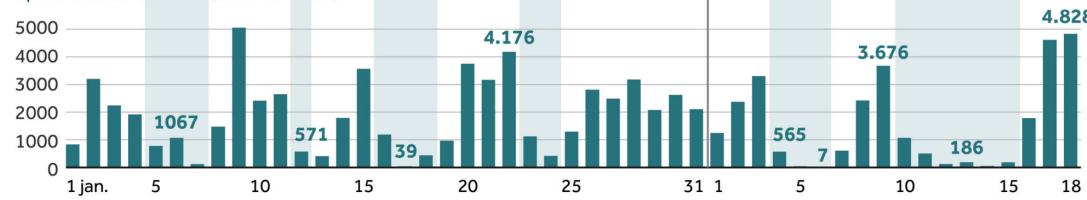
Windsnelheden in Griekenland

Gem. windsnelheden en windstoten in km/u (weerstation Lesbos)



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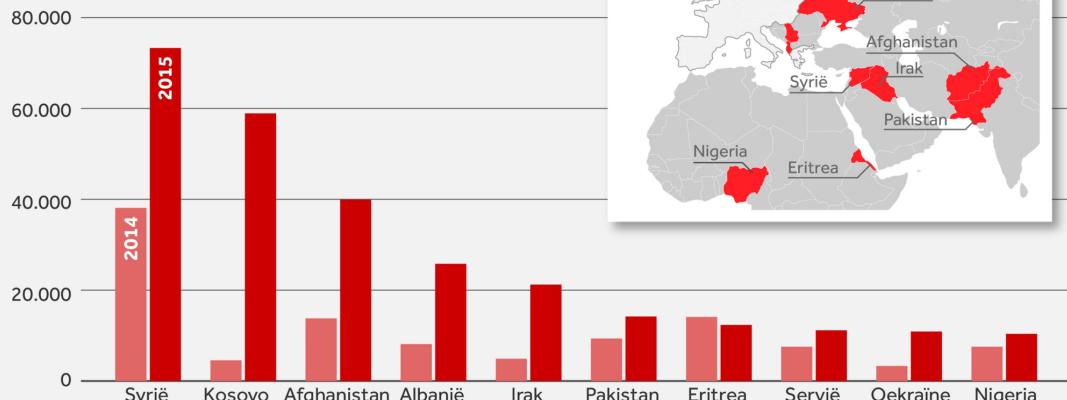
op de Griekse eilanden (bron: UNHCR)



Waar komen de asielzoekers vandaan?

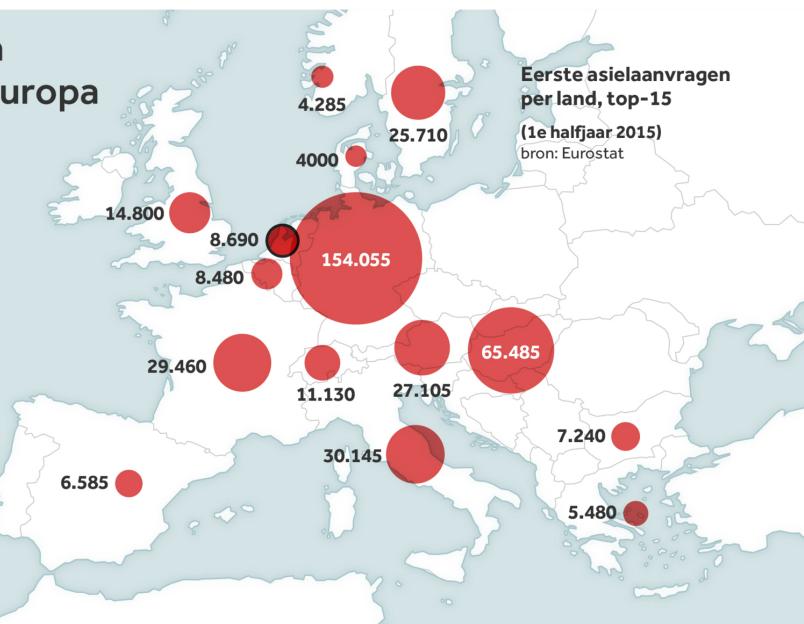
Eerste asielaanvragen in Europa naar grootste groepen van herkomst (1e halfjaar 2014 en 1e halfjaar 2015)

bron: Eurostat



De verdeling van asielzoekers in Europa

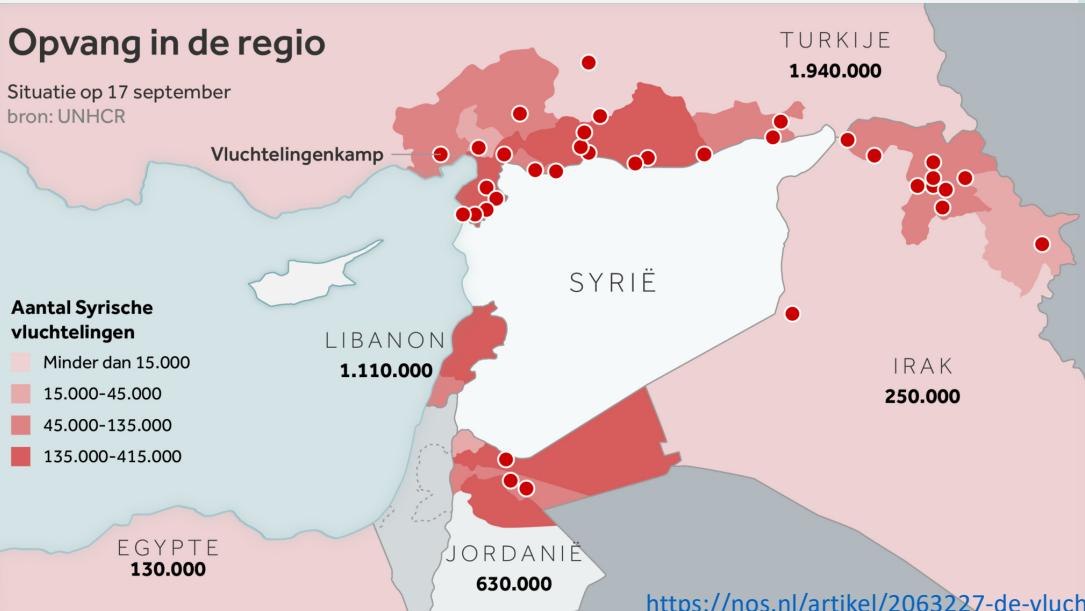
37	Duitsland	37% van de asiel-aanvragen werd gedaan in Duitsland
16	Hongarije	
7	Oostenrijk	
7	Italië	
7	Frankrijk	
6	Zweden	
4	VK	
3	Zwi.	
2	NL	
12	Overige landen	



Opvang in de regio

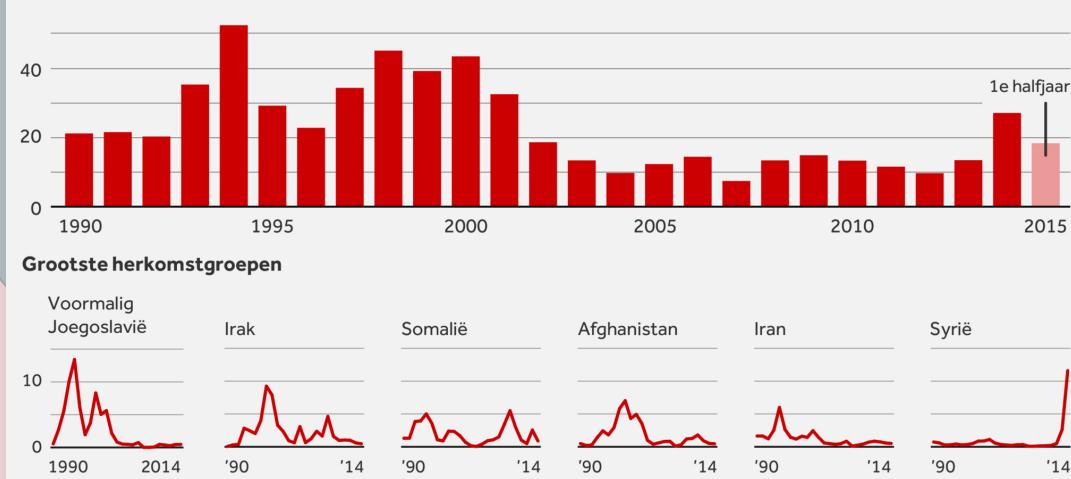
Situatie op 17 september

bron: UNHCR



De asielinstroom in Nederland

Eerste aanvragen en gezinsherening (x 1.000)



<https://nos.nl/artikel/2063227-de-vluchtelingscrisis-in-vijf-grafieken.html>



From existence up until 2003
humanity created 5 exabytes of data.



From existence up until 2003
humanity created 5 exabytes of data.

In 2010 humanity produced this
amount *every two days*.

Erich Schmidt, former CEO Google 2010

Extracting business value from the 4 V's of big data

