

Übung Open Data: Anpassen von bestehenden Apps & Bibliotheken die D3.js verwenden: C3.js und weitere Tools

Termin 5, 24. März 2016

Dr. Matthias Stürmer und Prof. Dr. Thomas Myrach

Forschungsstelle Digitale Nachhaltigkeit
Institut für Wirtschaftsinformatik
Universität Bern

Terminübersicht Übungen

- > 25.02.2016: Informationen zu den Übungen, App-Demos & Einführung in Tools
- > 03.03.2016: Einführung Web-Programmierung
- > 10.03.2016: Open Data Speed Dating
- > 17.03.2016: Einführung D3.js & Daten einbinden in D3.js
- > **24.03.2016: Anpassen von bestehenden Apps & Bibliotheken, die D3.js verwenden**
- > 31.03.2016: Osterferien
- > 07.04.2016: Daten visualisieren & Layouts
- > 14.04.2016: Skalen und Achsen & Responsive Design
- > 21.04.2016: User Experience, Usability Patterns
- > 28.04.2016: Zwischenpräsentation & Datenaktualisierung und Transitionen
- > 05.05.2016: Auffahrt
- > 12.05.2016: Interactivity & Geomapping
- > 19.05.2016: 3D Web-Programmierung mit Three.js & Programming Coaching
- > 26.05.2016: Abschlusspräsentationen
- > 02.06.2016: frei

24. März 2016

Vorlesung

1. Geistiges Eigentum und die Open-Bewegung
2. Gastreferat von *Dr. PD Simon Schlauri, Anwalt bei Ronzani Schlauri Anwälte*: Rechtliche Aspekte von Open Data



Übung

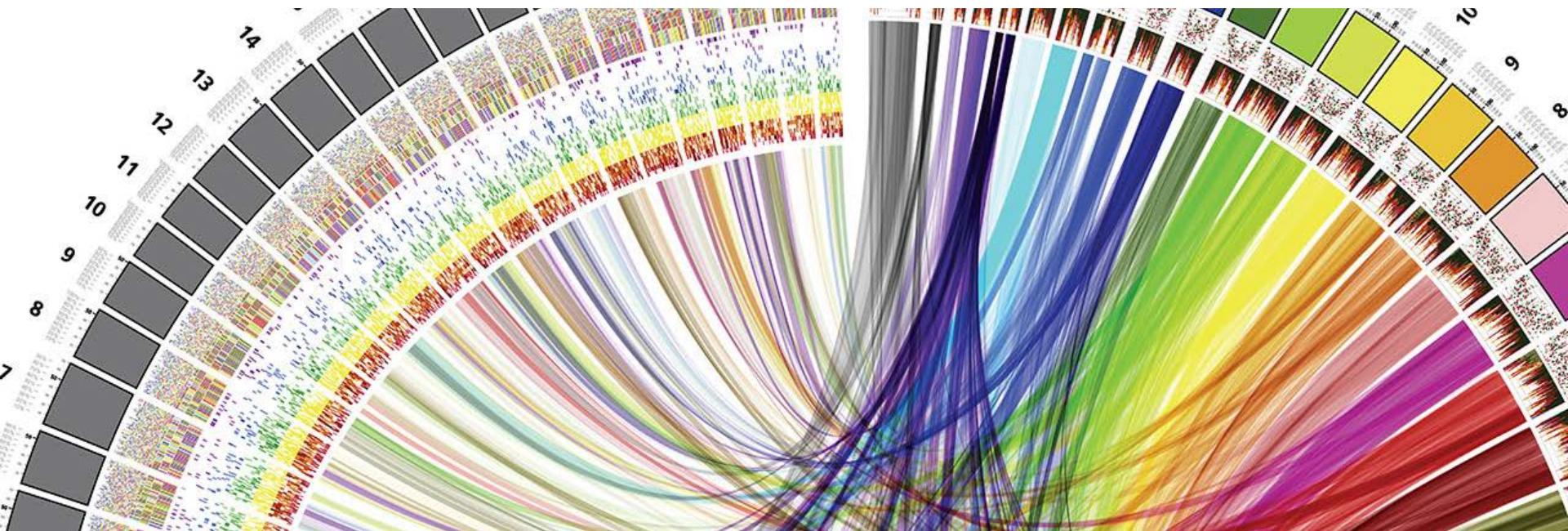
1. Anpassen von bestehenden Apps
2. Bibliotheken, die D3.js verwenden: C3.js und weitere Tools

Vertiefte Einführung in die Programmierung

1. Weiterführende Informationen und Übungen in Javascript

Agenda

1. Anpassen von bestehenden D3.js Snippets
2. C3.js Einführung
3. Weitere D3.js basierte Bibliotheken



Anpassen bestehender D3.js Snippets

Vorgehen:

1. Welche Daten werden visualisiert? -> Bevölkerungswachstum
2. Welche Visualisierungsart macht Sinn? -> z.B. D3.js Show Real
3. Wie muss ich die Daten anpassen? -> Transponieren
4. Was muss ich am Code Snippet anpassen -> Pfade
5. Was läuft schief? -> Debugging

Daten holen

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Statistik Schweiz

Aktuell Themen Regional International Infothek Dienstleistungen Institutionen ChronoStat

01 - Bevölkerung
Übersicht
Panorama
Die wichtigsten Zahlen
Das Thema von A bis Z
Neues im Thema
Agenda
Bevölkerungsstand und -struktur
Bevölkerungsbewegung
Migration und Integration
Zukünftige Bevölkerungsentwicklung
Daten, Indikatoren - Schweiz Szenarien
Daten, Indikatoren - Kantone Szenarien
Daten, Indikatoren - Haushaltsszenarien
Analysen
Familien, Haushalte
Sprachen, Religionen
Zum Nachschlagen
Medienmitteilungen
Newsletter
Publikationen
Demos
Demografisches Porträt
Ausländerinnen und Ausländer in der Schweiz
Statistisches Lexikon
Karten, Atlanten
Online-Datenrecherche
Statistische Grundlagen
Erhebungen, Quellen
Nomenklaturen, Inventare
Definitionen

Bundesamt für Statistik > Themen > 01 - Bevölkerung > Zukünftige Bevölkerungsentwicklung > Daten, Indikatoren - Kantonale Szenarien > Übersicht

Suche Seite drucken | Share

Zukünftige Bevölkerungsentwicklung – Daten, Indikatoren - Kantonale Szenarien
Übersicht

Szenarien zur Bevölkerungsentwicklung der Kantone der Schweiz 2010-2035

Das Bundesamt für Statistik (BFS) hat zum dritten Mal Szenarien zur Bevölkerungsentwicklung der Kantone berechnet, die sich auf die aktuellsten Szenarien für die gesamte Schweiz abstützen. Die Bedeutung dieser Szenarien besteht darin, dass es sich dabei um eine Regionalisierung der nationalen Szenarien (bzw. deren Methoden und Hypothesen) handelt und nicht einfach um eine Verknüpfung verschiedener kantonalen Szenarien oder eine Verteilung der Bestände der nationalen Szenarien auf die verschiedenen Kantone. So wurden die kantonalen Szenarien zur Bevölkerungsentwicklung gleichzeitig für jeden einzelnen Kanton berechnet und dann Schritt für Schritt auf die Ergebnisse der Vorausschätzungen zur Bevölkerungsentwicklung der gesamten Schweiz abgestimmt. Damit ist gewährleistet, dass die Summe der kantonalen Ergebnisse für jedes Jahr des Beobachtungszeitraums exakt mit der gesamtschweizerischen Bevölkerungsbilanz übereinstimmt.

Drei Szenarien wurden berechnet. Das mittlere Szenario (AR-00-2010) ist das Referenzszenario und führt die im Laufe der letzten Jahrzehnte beobachteten Entwicklungen fort. Das hohe Szenario (BR-00-2010) kombiniert die Hypothesen, welche das Bevölkerungswachstum begünstigen. Das tiefe Szenario (CR-00-2010) geht von Hypothesen aus, die dem Bevölkerungswachstum weniger förderlich sind.

Die detaillierten Ergebnisse der kantonalen Bevölkerungsszenarien stehen Ihnen in der Datenbank STAT-TAB zur Verfügung.

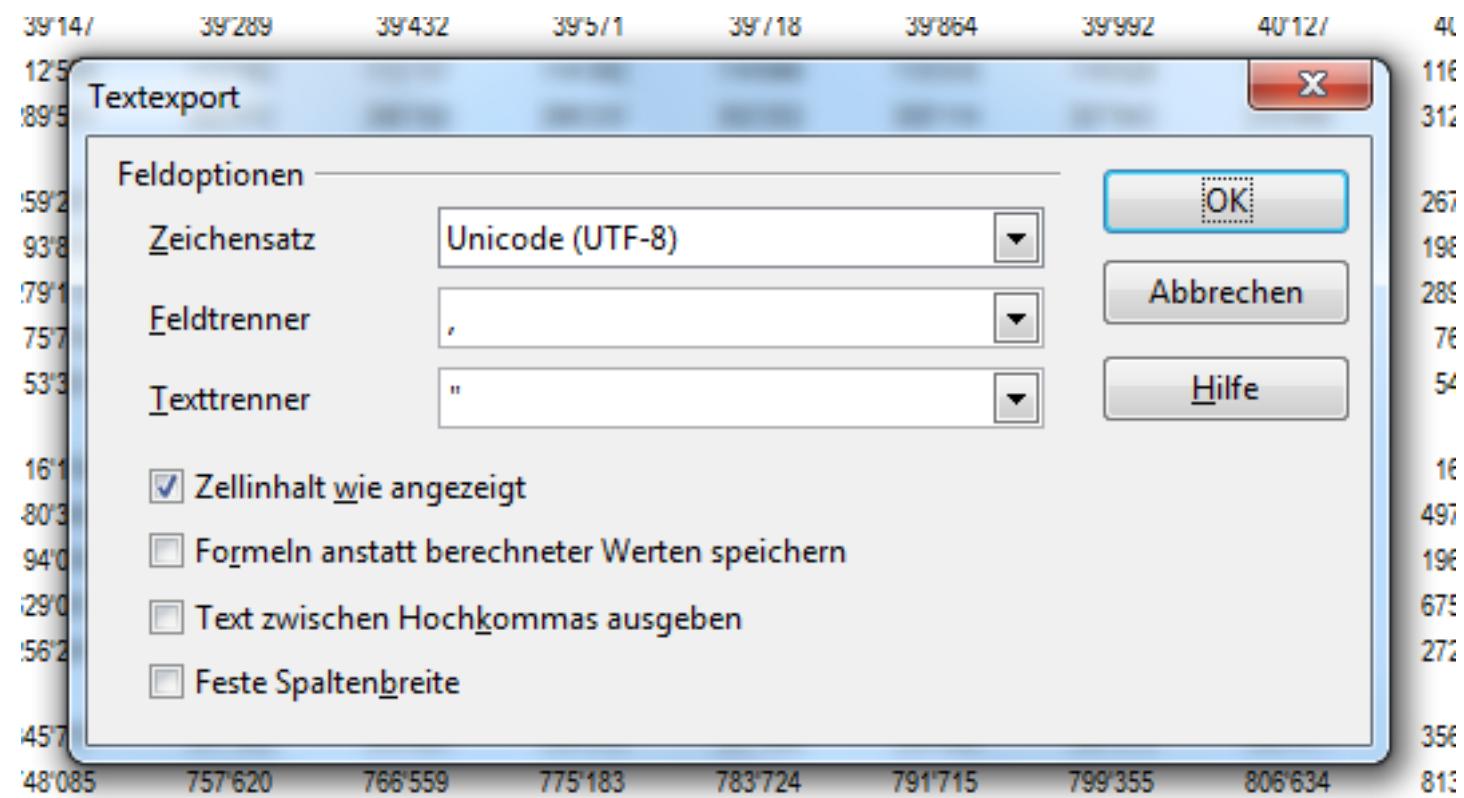
| Dokument / Objekt | Titel | Perioden |
|-------------------|---|-----------|
| 67 KB | Szenarien zur Bevölkerungsentwicklung der Kantone der Schweiz 2010-2035 - Ständige Wohnbevölkerung nach Kantonen gemäss 3 Szenarien (je-301.03.02.01) | 2010-2035 |
| 67 KB | Szenarien zur Bevölkerungsentwicklung der Kantone der Schweiz 2010-2035 - Bevölkerung nach Alterklassen und Kantonen gemäss dem mittleren Szenario AR-00-2010 | 2010-2035 |

Link: http://www.bfs.admin.ch/bfs/portal/de/index/themen/01/03/blank/key_kant/01.html

ODS Datei mit LibreOffice geöffnet

Export der Daten als UTF-8 CSV-Datei

«Sichern als...»



Daten als CSV in Brackets öffnen

bevoelkerungswachstum.csv - Brackets

File Edit View Navigate Debug Help

Working Files

- html_demo.html
- demo.html
- index.html
- cantons.json
- my_app_Complete.js
- my_app.js
- bevoelkerungswachstum.csv

D3 Programmierung

- css
 - style.css
- js
 - vendor
 - d3.min.js
 - jquery-1.11.0.min.js
 - underscore-min.js
 - my_app.js
 - my_app_Complete.js
- bevoelkerungswachstum.csv
- cantons.json
- demo.html
- flare.json
- html_demo.html
- index.html
- svg_demo.html

```

1 je-d-01.04.02.00.01,"Ständige Wohnbevölkerung nach Kantonen gemäss dem ""mittleren"" Szenario AR-00-2010, 2010-2035
",,,,,,,,,,,,
2 ,,,,,,,,,,,,
3 ,2010,2011,2012,2013,2014,2015,2016,2017,2018,2019,2020,2021,2022,2023,2024,2025,2026,2027,2028,2029,2030,2031,2032,20
4 Schweiz,7'856'600 ,7'922'090 ,7'988'333 ,8'047'559 ,8'102'292 ,8'155'127 ,8'207'402 ,8'260'073 ,8'309'704 ,8'
,8'444'913 ,8'485'802 ,8'524'627 ,8'561'368 ,8'595'882 ,8'628'351 ,8'658'886 ,8'687'312 ,8'713'831 ,8'738'477
,8'782'695 ,8'802'409 ,8'820'688 ,8'837'706
5 Zürich,1'368'669 ,1'382'998 ,1'392'745 ,1'402'327 ,1'413'343 ,1'424'093 ,1'434'815 ,1'445'692 ,1'455'988 ,1'4
,1'484'599 ,1'493'302 ,1'501'572 ,1'509'404 ,1'516'809 ,1'523'809 ,1'530'507 ,1'536'801 ,1'542'776 ,1'548'413
,1'558'908 ,1'563'769 ,1'568'397 ,1'572'841
6 Bern,977'690 ,980'541 ,983'815 ,986'664 ,989'301 ,992'083 ,995'044 ,998'164 ,1'001'074 ,1'003'781 ,1'006'245
,1'010'528 ,1'012'358 ,1'013'991 ,1'015'403 ,1'016'603 ,1'017'633 ,1'018'416 ,1'019'014 ,1'019'388 ,1'019'561
,1'019'397 ,1'019'061 ,1'018'614
7 Luzern,377'028 ,380'487 ,383'765 ,387'451 ,390'843 ,394'152 ,397'393 ,400'613 ,403'699 ,406'700 ,409'566 ,4
,417'473 ,419'849 ,422'106 ,424'236 ,426'253 ,428'125 ,429'871 ,431'465 ,432'945 ,434'290 ,435'545 ,436'699
8 Uri,35'473 ,35'553 ,35'670 ,35'730 ,35'754 ,35'783 ,35'1808 ,35'861 ,35'902 ,35'950 ,36'011 ,36'067 ,36'135
,36'265 ,36'288 ,36'310 ,36'329 ,36'336 ,36'316 ,36'299 ,36'263 ,36'232 ,36'192 ,36'138
9 Schwyz,145'749 ,146'185 ,147'008 ,147'165 ,148'350 ,148'968 ,149'691 ,150'367 ,151'089 ,151'729 ,152'386 ,1
,154'228 ,154'815 ,155'369 ,155'928 ,156'434 ,156'932 ,157'388 ,157'833 ,158'239 ,158'617 ,158'961 ,159'285
10 Obwalden,35'426 ,35'801 ,36'172 ,36'592 ,36'900 ,37'188 ,37'484 ,37'808 ,38'077 ,38'350 ,38'642 ,38'931 ,3
,39'670 ,39'882 ,40'085 ,40'282 ,40'456 ,40'600 ,40'732 ,40'864 ,40'979 ,41'074 ,41'158 ,41'230
11 Nidwalden,40'912 ,41'035 ,41'231 ,41'422 ,41'646 ,41'868 ,42'106 ,42'345 ,42'594 ,42'838 ,43'059 ,43'263 ,
,43'828 ,44'011 ,44'167 ,44'303 ,44'442 ,44'541 ,44'642 ,44'737 ,44'818 ,44'888 ,44'951 ,45'013
12 Glarus,38'628 ,38'739 ,38'965 ,39'147 ,39'289 ,39'432 ,39'571 ,39'718 ,39'864 ,39'992 ,40'127 ,40'248 ,40'
,40'597 ,40'714 ,40'826 ,40'926 ,41'030 ,41'129 ,41'208 ,41'280 ,41'349 ,41'410 ,41'474 ,41'529
13 Zug,111'164 ,111'416 ,112'025 ,112'569 ,113'162 ,113'757 ,114'362 ,114'946 ,115'518 ,116'028 ,116'515 ,116'
,117'807 ,118'189 ,118'559 ,118'895 ,119'215 ,119'498 ,119'770 ,120'015 ,120'235 ,120'459 ,120'673 ,120'872
14 Freiburg,277'297 ,281'412 ,285'670 ,289'501 ,292'912 ,296'150 ,299'235 ,302'252 ,305'114 ,307'843 ,310'446
,317'514 ,319'646 ,321'655 ,323'545 ,325'297 ,326'946 ,328'480 ,329'873 ,331'170 ,332'354 ,333'457 ,334'463
15 Solothurn,254'170 ,255'956 ,257'755 ,259'267 ,260'490 ,261'572 ,262'658 ,263'692 ,264'681 ,265'667 ,266'690
,269'828 ,270'837 ,271'804 ,272'690 ,273'514 ,274'256 ,274'917 ,275'513 ,276'028 ,276'464 ,276'842 ,277'151
16 Basel-Stadt,188'962 ,190'413 ,192'406 ,193'859 ,194'829 ,195'633 ,196'317 ,196'953 ,197'418 ,197'781 ,198'01'
,198'305 ,198'352 ,198'347 ,198'300 ,198'233 ,198'162 ,198'069 ,197'981 ,197'900 ,197'839 ,197'789 ,197'718
17 Basel-Landschaft,274'387 ,275'900 ,277'578 ,279'139 ,280'439 ,281'761 ,283'063 ,284'390 ,285'696 ,286'920 ,2
,290'298 ,291'345 ,292'330 ,293'253 ,294'120 ,294'928 ,295'674 ,296'394 ,297'053 ,297'648 ,298'200 ,298'684
18 Schaffhausen,75'737 ,75'716 ,75'748 ,75'769 ,75'835 ,75'932 ,76'077 ,76'236 ,76'364 ,76'477 ,76'592 ,76'700
,77'036 ,77'165 ,77'278 ,77'386 ,77'484 ,77'583 ,77'682 ,77'773 ,77'861 ,77'938 ,78'007 ,78'088
19 Appenzell A.Rh.,53'019 ,53'041 ,53'203 ,53'351 ,53'469 ,53'611 ,53'744 ,53'906 ,54'055 ,54'204 ,54'370 ,54'
,54'878 ,55'066 ,55'243 ,55'418 ,55'589 ,55'749 ,55'890 ,56'029 ,56'163 ,56'285 ,56'393 ,56'474 ,56'561
20 Appenzell I.Rh.,15'808 ,15'964 ,16'052 ,16'154 ,16'254 ,16'358 ,16'429 ,16'515 ,16'591 ,16'678 ,16'738 ,16'
,16'912 ,16'950 ,17'009 ,17'062 ,17'112 ,17'154 ,17'181 ,17'209 ,17'239 ,17'267 ,17'282 ,17'299 ,17'303
21 St. Gallen,476'374 ,477'380 ,478'706 ,480'360 ,482'432 ,484'758 ,487'260 ,489'742 ,491'932 ,493'798 ,495'520
,500'204 ,501'723 ,503'111 ,504'411 ,505'593 ,506'668 ,507'589 ,508'431 ,509'148 ,509'802 ,510'330 ,510'831
22 Graubünden,192'570 ,193'209 ,193'710 ,194'024 ,194'150 ,194'336 ,194'577 ,194'898 ,195'216 ,195'519 ,195'815
,196'607 ,196'800 ,197'100 ,197'140 ,197'111 ,197'700 ,197'010 ,198'047 ,198'145 ,198'107 ,198'140

```

Daten bereinigen: Kommentare und doppelte Zwischenräume löschen

bevoelkerungswachstum.csv - Brackets

File Edit View Navigate Debug Help

Working Files

- html_demo.html
- demo.html
- index.html
- cantons.json
- my_app_Complete.js
- my_app.js
- bevoelkerungswachstum.csv

D3 Programmierung

- css
 - style.css
- js
 - vendor
 - d3.min.js
 - jquery-1.11.0.min.js
 - underscore-min.js
 - my_app.js
 - my_app_Complete.js

bevoelkerungswachstum.csv

cantons.json

demo.html

flare.json

html_demo.html

index.html

svg_demo.html

702 results

Aa .*

1 Region,2010,2011,2012,2013,2014,2015,2016,2017,2018,2019,2020,2021,2022,2023,2024,2025,2026,2027,2028,202
 2 Schweiz,7'856'600 ,7'922'090 ,7'988'333 ,8'047'559 ,8'102'292 ,8'155'127 ,8'207'402 ,8'260'073 ,8
 ,8'444'913 ,8'485'802 ,8'524'627 ,8'561'368 ,8'595'882 ,8'628'351 ,8'658'886 ,8'687'312 ,8'713'83
 ,8'782'695 ,8'802'409 ,8'820'688 ,8'837'706
 3 Zürich,1'368'669 ,1'382'998 ,1'392'745 ,1'402'327 ,1'413'343 ,1'424'093 ,1'434'815 ,1'445'692 ,1'
 ,1'484'599 ,1'493'302 ,1'501'572 ,1'509'404 ,1'516'809 ,1'523'809 ,1'530'507 ,1'536'801 ,1'542'77
 ,1'558'908 ,1'563'769 ,1'568'397 ,1'572'841
 4 Bern,977'690 ,980'541 ,983'815 ,986'664 ,989'301 ,992'083 ,995'044 ,998'164 ,1'001'074 ,1'003'78
 ,1'010'528 ,1'012'358 ,1'013'991 ,1'015'403 ,1'016'603 ,1'017'633 ,1'018'416 ,1'019'014 ,1'019'38
 ,1'019'397 ,1'019'061 ,1'018'614
 5 Luzern,377'028 ,380'487 ,383'765 ,387'451 ,390'843 ,394'152 ,397'393 ,400'613 ,403'699 ,406'700
 ,417'473 ,419'849 ,422'186 ,424'236 ,426'253 ,428'125 ,429'871 ,431'465 ,432'945 ,434'290 ,435'
 6 Uri,35'473 ,35'553 ,35'670 ,35'730 ,35'754 ,35'783 ,35'808 ,35'861 ,35'902 ,35'950 ,36'011 ,36
 ,36'265 ,36'288 ,36'310 ,36'329 ,36'336 ,36'316 ,36'299 ,36'263 ,36'232 ,36'192 ,36'138
 7 Schwyz,145'749 ,146'185 ,147'008 ,147'605 ,148'350 ,148'968 ,149'691 ,150'367 ,151'089 ,151'729
 ,154'228 ,154'815 ,155'369 ,155'928 ,156'434 ,156'932 ,157'388 ,157'833 ,158'239 ,158'617 ,158'
 8 Obwalden,35'426 ,35'801 ,36'172 ,36'592 ,36'900 ,37'188 ,37'1484 ,37'1808 ,38'077 ,38'350 ,38'642
 ,39'670 ,39'882 ,40'085 ,40'282 ,40'456 ,40'600 ,40'732 ,40'864 ,40'979 ,41'074 ,41'158 ,41'23
 9 Nidwalden,49'912 ,41'035 ,41'231 ,41'422 ,41'646 ,41'868 ,42'106 ,42'345 ,42'594 ,42'838 ,43'05
 ,43'828 ,44'011 ,44'167 ,44'303 ,44'442 ,44'541 ,44'642 ,44'737 ,44'818 ,44'888 ,44'951 ,45'01
 10 Glarus,38'628 ,38'739 ,38'965 ,39'147 ,39'289 ,39'432 ,39'571 ,39'718 ,39'864 ,39'992 ,40'127
 ,40'597 ,40'714 ,40'826 ,40'926 ,41'030 ,41'129 ,41'208 ,41'280 ,41'349 ,41'410 ,41'474 ,41'52
 11 Zug,111'164 ,111'416 ,112'025 ,112'569 ,113'162 ,113'757 ,114'362 ,114'946 ,115'518 ,116'028 ,1
 ,117'807 ,118'189 ,118'559 ,118'895 ,119'215 ,119'498 ,119'770 ,120'015 ,120'235 ,120'459 ,120'
 12 Freiburg,277'297 ,281'412 ,285'160 ,289'501 ,292'912 ,296'150 ,299'235 ,302'252 ,305'114 ,307'84
 ,317'514 ,319'646 ,321'655 ,323'545 ,325'297 ,326'946 ,328'480 ,329'873 ,331'170 ,332'354 ,333'
 13 Solothurn,254'170 ,255'956 ,257'755 ,259'267 ,260'490 ,261'572 ,262'658 ,263'692 ,264'681 ,265'6
 ,269'828 ,270'837 ,271'804 ,272'690 ,273'514 ,274'256 ,274'917 ,275'513 ,276'028 ,276'464 ,276'
 14 Basel-Stadt,188'962 ,190'413 ,192'406 ,193'859 ,194'829 ,195'633 ,196'317 ,196'953 ,197'418 ,197
 ,198'305 ,198'352 ,198'347 ,198'300 ,198'233 ,198'162 ,198'069 ,197'981 ,197'900 ,197'839 ,197'
 15 Basel-Landschaft,274'387 ,275'900 ,277'578 ,279'139 ,280'439 ,281'761 ,283'063 ,284'390 ,285'696
 ,290'298 ,291'345 ,292'330 ,293'253 ,294'120 ,294'928 ,295'674 ,296'394 ,297'053 ,297'648 ,298'
 16 Schaffhausen,75'737 ,75'716 ,75'748 ,75'769 ,75'835 ,75'932 ,76'077 ,76'236 ,76'364 ,76'477 ,76
 ,77'036 ,77'165 ,77'278 ,77'386 ,77'484 ,77'583 ,77'682 ,77'773 ,77'861 ,77'938 ,78'007 ,78'08
 17 Appenzell A.Rh.,53'019 ,53'041 ,53'203 ,53'351 ,53'469 ,53'611 ,53'744 ,53'906 ,54'055 ,54'204
 ,54'878 ,55'066 ,55'243 ,55'418 ,55'589 ,55'749 ,55'890 ,56'029 ,56'163 ,56'285 ,56'393 ,56'47
 18 Appenzell I.Rh.,15'888 ,15'964 ,16'052 ,16'154 ,16'254 ,16'358 ,16'429 ,16'515 ,16'591 ,16'678
 ,16'912 ,16'950 ,17'009 ,17'062 ,17'112 ,17'154 ,17'181 ,17'209 ,17'239 ,17'267 ,17'282 ,17'29
 19 St. Gallen,476'374 ,477'380 ,478'706 ,480'360 ,482'432 ,484'758 ,487'260 ,489'742 ,491'932 ,493'
 ,500'204 ,501'723 ,503'111 ,504'411 ,505'593 ,506'668 ,507'589 ,508'431 ,509'148 ,509'802 ,510'
 20 Graubünden,192'570 ,193'209 ,193'710 ,194'024 ,194'150 ,194'336 ,194'577 ,194'898 ,195'216 ,195'
 ,196'697 ,196'950 ,197'189 ,197'498 ,197'611 ,197'782 ,197'919 ,198'047 ,198'145 ,198'207 ,198'

Daten bereinigen: Hochkommas löschen

• bevoelkerungswachstum.csv - Brackets

File Edit View Navigate Debug Help

Working Files

- html_demo.html
- demo.html
- index.html
- cantons.json
- my_app_Complete.js
- my_app.js
- bevoelkerungswachstum.csv

D3 Programmierung

- css
 - style.css
- js
 - vendor
 - d3.min.js
 - jquery-1.11.0.min.js
 - underscore-min.js
 - my_app.js
 - my_app_Complete.js

bevoelkerungswachstum.csv

cantons.json

demo.html

flare.json

html_demo.html

index.html

svg_demo.html

772 results Aa . *

```

8,524,627,8,561,368,8,595,882,8,628,351,8,658,886,8,687,312,8,713,831,8,738,477,8,761,401,8,782,695,8,802,409,8,820
3, Zürich,1,368,669,1,382,998,1,392,745,1,402,327,1,413,343,1,424,093,1,434,815,1,445,692,1,455,988,1,465,920,1,475,48
501,572,1,509,404,1,516,869,1,523,809,1,530,507,1,536,801,1,542,776,1,548,413,1,553,805,1,558,908,1,563,769,1,568,3
4, Bern,977,690,980,541,983,815,986,664,989,301,992,083,995,044,998,164,1,001,074,1,003,781,1,006,245,1,008,477,1,010,9
,1,015,403,1,016,603,1,017,633,1,018,416,1,019,014,1,019,388,1,019,561,1,019,552,1,019,397,1,019,061,1,018,614
5, Luzern,377,028,380,487,383,765,387,451,390,843,394,152,397,393,400,613,403,699,406,700,409,566,412,312,414,947,417,4
1236,426,253,428,125,429,871,431,465,432,945,434,290,435,545,436,699,437,775
6, Uri,35,473,35,553,35,670,35,730,35,754,35,783,35,808,35,861,35,902,35,950,36,011,36,067,36,135,36,185,36,227,36,265
6,336,36,316,36,299,36,263,36,132,36,192,36,138
7, Schwyz,145,749,146,185,147,008,147,605,148,350,148,968,149,691,150,367,151,089,151,729,152,386,153,000,153,633,154,0
1928,156,434,156,932,157,388,157,833,158,239,158,617,158,961,159,285,159,607
8, Obwalden,35,426,35,801,36,172,36,592,36,900,37,188,37,484,37,808,38,077,38,350,38,642,38,931,39,185,39,438,39,670,39
456,40,600,40,732,40,864,40,974,41,074,41,158,41,230
9, Nidwalden,40,912,41,035,41,231,41,422,41,646,41,868,42,106,42,345,42,594,42,838,43,059,43,263,43,456,43,646,43,828,4
442,44,541,44,642,44,737,44,818,44,888,44,951,45,013
10, Glarus,38,628,38,739,38,965,39,147,39,289,39,432,39,571,39,718,39,864,39,992,40,127,40,248,40,369,40,485,40,597,40
0,41,129,41,208,41,280,41,349,41,410,41,474,41,529
11, Zug,111,164,111,416,112,025,112,569,113,162,113,757,114,362,114,946,115,518,116,028,116,515,116,969,117,404,117,807
5,119,215,119,498,119,770,120,015,120,235,120,459,120,673,120,872,121,065
12, Freiburg,277,297,281,412,285,670,289,501,292,912,296,150,299,235,302,252,305,114,307,843,310,446,312,934,315,259,31
23,545,325,297,326,946,328,488,329,873,331,170,332,1354,333,457,334,1463,335,368
13, Solothurn,254,170,255,956,257,755,259,267,260,490,261,572,262,658,263,692,264,681,265,667,266,690,267,764,268,785,26
271,804,272,690,273,514,274,256,274,917,275,513,276,028,276,464,276,842,277,151,277,394
14, Basel-Stadt,188,962,190,413,192,406,193,859,194,829,195,633,196,317,196,953,197,418,197,781,198
,198,1305,198,352,198,347,198,300,198,233,198,162,198,069,197,981,197,900,197,839,197,789,197
15, Basel-Landschaft,274,387,275,900,277,578,279,139,280,439,281,761,283,063,284,390,285,696,286,920
,290,298,291,345,292,330,293,253,294,120,294,928,295,674,296,394,297,053,297,648,298,200,298
16, Schaffhausen,75,737,75,716,75,748,75,769,75,835,75,932,76,077,76,236,76,364,76,477,76,592,76
,77,036,77,165,77,278,77,386,77,484,77,583,77,682,77,773,77,861,77,938,78,007,78,088
17, Appenzell A.Rh.,53,019,53,041,53,203,53,351,53,469,53,611,53,744,53,906,54,055,54,284,54,370,5
,54,878,55,066,55,243,55,418,55,589,55,749,55,890,56,029,56,163,56,285,56,393,56,474,56,561
18, Appenzell I.Rh.,15,008,15,964,16,052,16,154,16,254,16,358,16,429,16,515,16,591,16,678,16,738,1
,16,912,16,950,17,009,17,062,17,112,17,154,17,181,17,209,17,239,17,267,17,282,17,299,17,303
19, St. Gallen,476,374,477,380,478,706,480,360,482,432,484,758,487,260,489,742,491,932,493,798,495
,500,1204,501,723,503,111,504,411,505,593,506,668,507,589,508,431,509,148,509,802,510,330,510
20, Graubünden,192,570,193,209,193,710,194,024,194,150,194,336,194,577,194,898,195,216,195,519,195
,196,697,196,950,197,189,197,408,197,611,197,782,197,919,198,047,198,145,198,207,198,243,198
21, Aargau,607,848,615,153,622,407,629,051,635,238,641,319,647,320,653,312,659,082,664,662,670,042
,684,897,689,427,693,726,697,810,701,675,705,308,708,723,711,936,714,944,717,732,720,332,722
22, Thurgau,247,633,250,470,253,515,256,241,258,663,260,965,263,154,265,277,267,311,269,220,271,020
,275,867,277,283,278,596,279,818,280,936,281,941,282,856,283,694,284,440,285,090,285,685,286

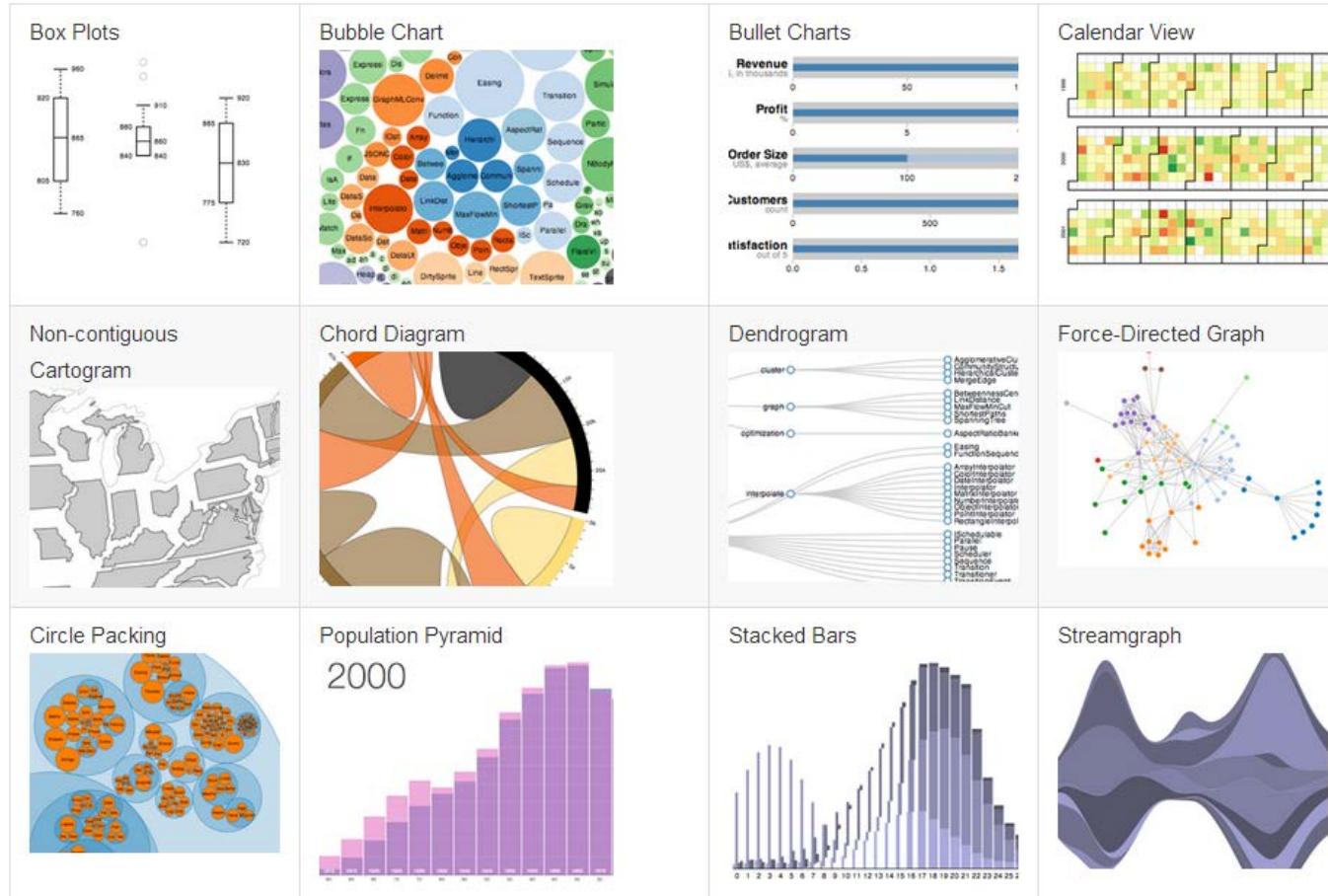
```

Anpassen bestehender D3.js Snippets

Vorgehen:

1. Welche Daten werden visualisiert? -> Bevölkerungswachstum
2. **Welche Visualisierungsart macht Sinn? -> D3.js Show Real**
3. Wie muss ich die Daten anpassen? -> Transponieren
4. Was muss ich am Code Snippet anpassen -> Pfade
5. Was läuft schief? -> Debugging

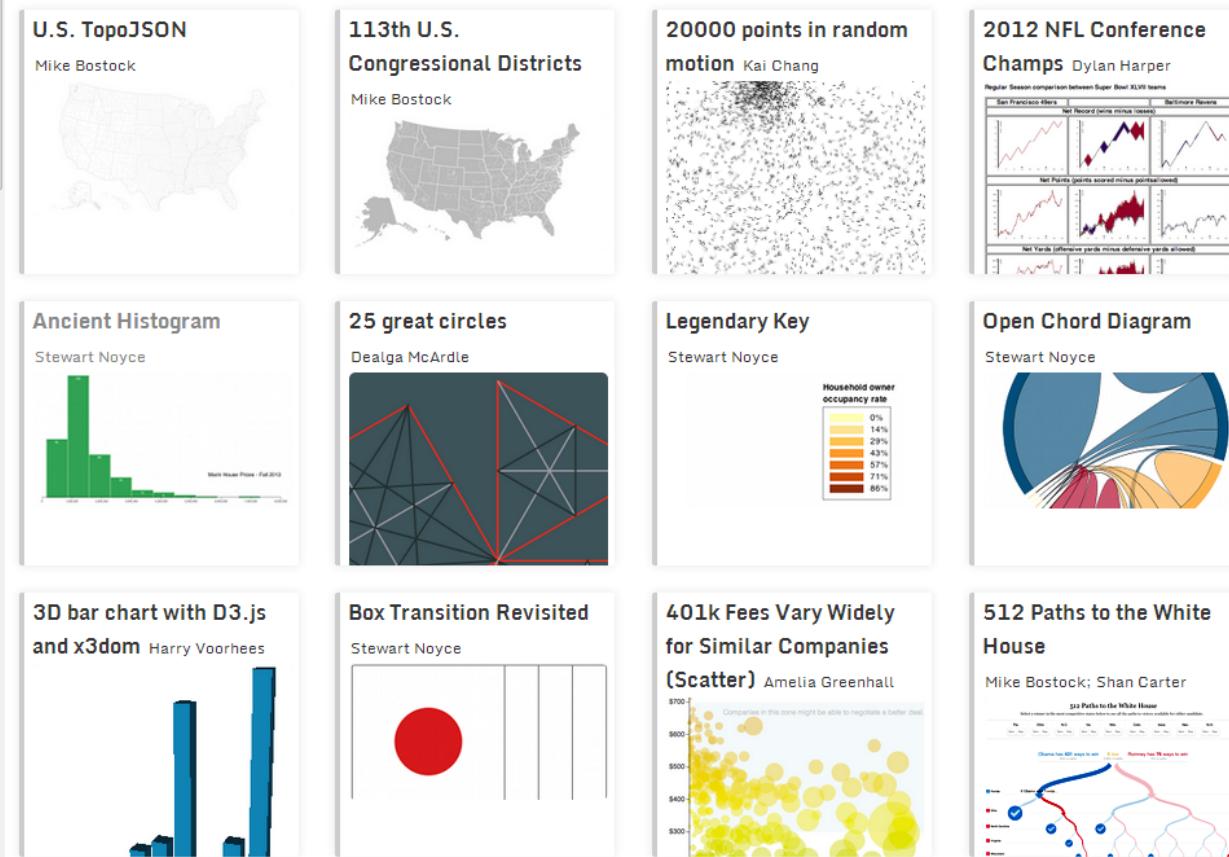
D3.js Code Snippets



Link: <https://github.com/mbostock/d3/wiki/Gallery>

D3.js Code Snippets

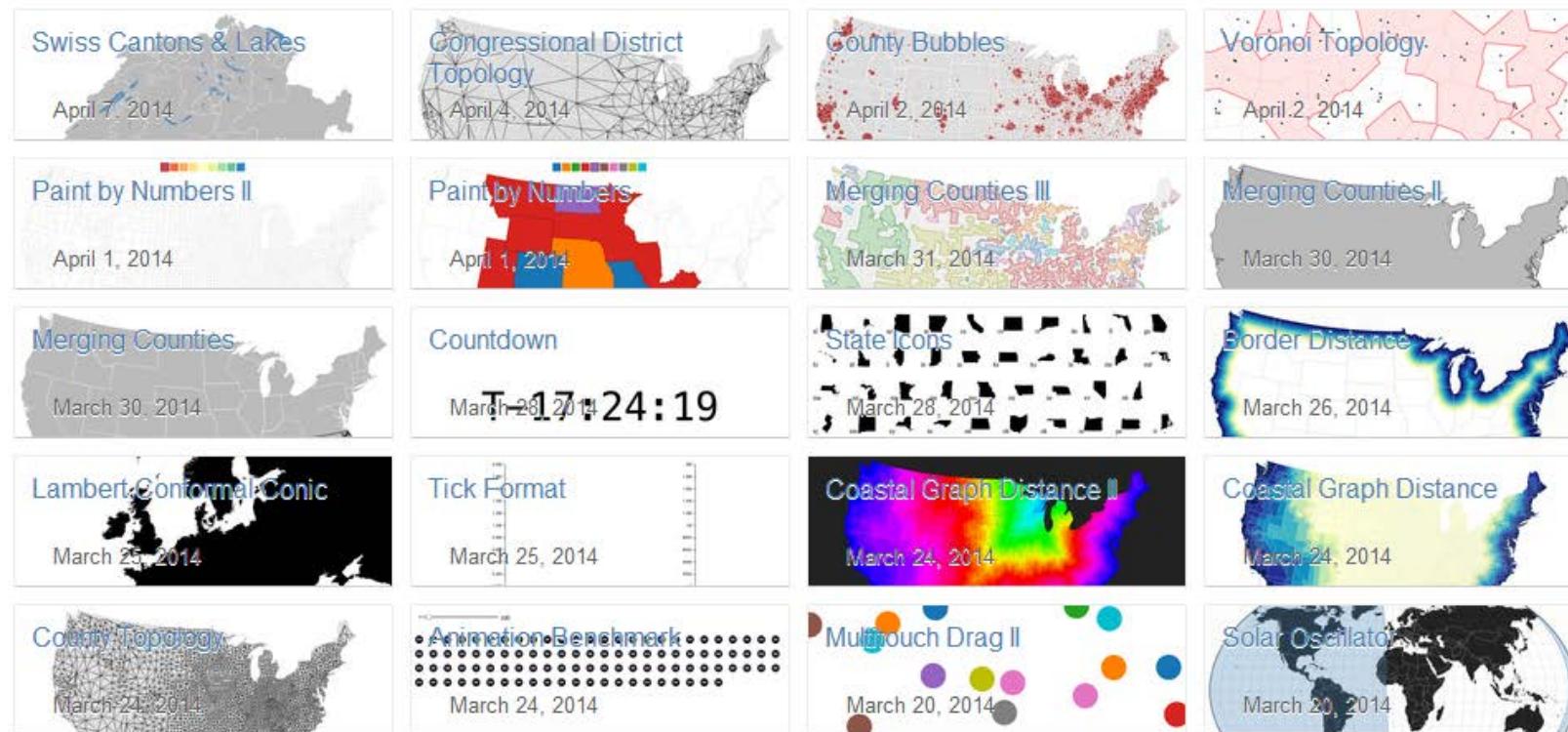
| Author | |
|----------------------|----------------------|
| Chart Type | |
| Title | <input type="text"/> |
| Untagged | 1122 |
| Map | 236 |
| Network | 69 |
| Reusable | 65 |
| Bar Chart | 58 |
| Line Chart | 49 |
| Math | 46 |
| Scatterplot | 39 |
| Bubble Chart | 26 |
| Area Chart | 25 |
| Tree | 23 |
| Voronoi | 17 |
| Pie Chart | 15 |
| Parallel Coordinates | |
| 15 | |
| Chord Diagram | 15 |
| Choropleth | 14 |
| Sankey | 14 |
| Stacked Bar Chart | |
| 14 | |
| Experiment | 12 |



Link: <http://christopheviau.com/d3list/gallery.html>

D3.js Code Snippets

mbostock's blocks

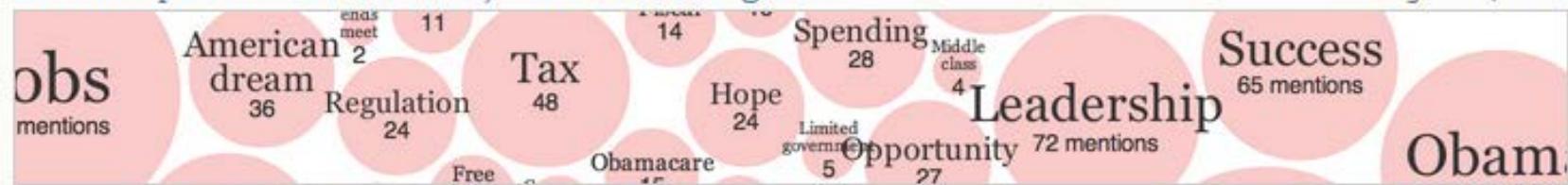


Link: <http://bl.ocks.org/mbostock>

D3.js Code Snippets

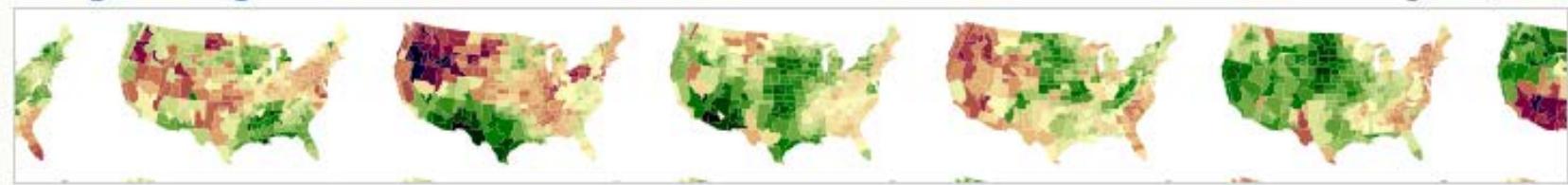
At the Republican Convention, the Words Being Used

August 28, 2012



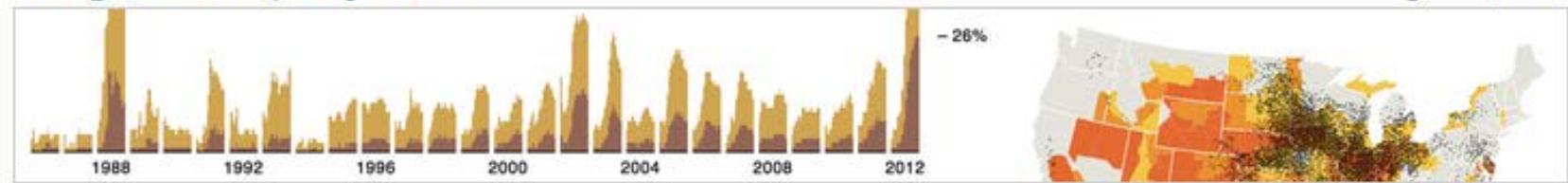
Drought during Month

August 24, 2012



Drought Extends, Crops Wither

August 24, 2012



Link: <http://bost.ocks.org/mike/>

Es gibt viele D3 Snippets im Internet...



Web Bilder Videos Shopping Maps Mehr ▾ Suchoptionen

Ungefähr 31'000'000 Ergebnisse (0.30 Sekunden)

[Gallery · mbostock/d3 Wiki · GitHub](https://github.com/mbostock/d3/wiki/Gallery)

<https://github.com/mbostock/d3/wiki/Gallery> ▾ Diese Seite übersetzen

Welcome to the D3 gallery! Feel free to add links to your work! More **examples** are available on bl.ocks.org/mbostock. If you want to share an **example** and don't ...
Sie haben diese Seite 2 Mal aufgerufen. Letzter Besuch: 08.04.14

[D3.js - Data-Driven Documents](http://d3js.org/)

d3js.org/ ▾ Diese Seite übersetzen

A JavaScript library for manipulating documents based on data using HTML, SVG and CSS. Site includes overview, **examples**, documentation, and source ...
Sie haben diese Seite 5 Mal aufgerufen. Letzter Besuch: 08.04.14

[The Big List of D3.js Examples](http://christopheviau.com/d3list/)

christopheviau.com/d3list/ ▾ Diese Seite übersetzen

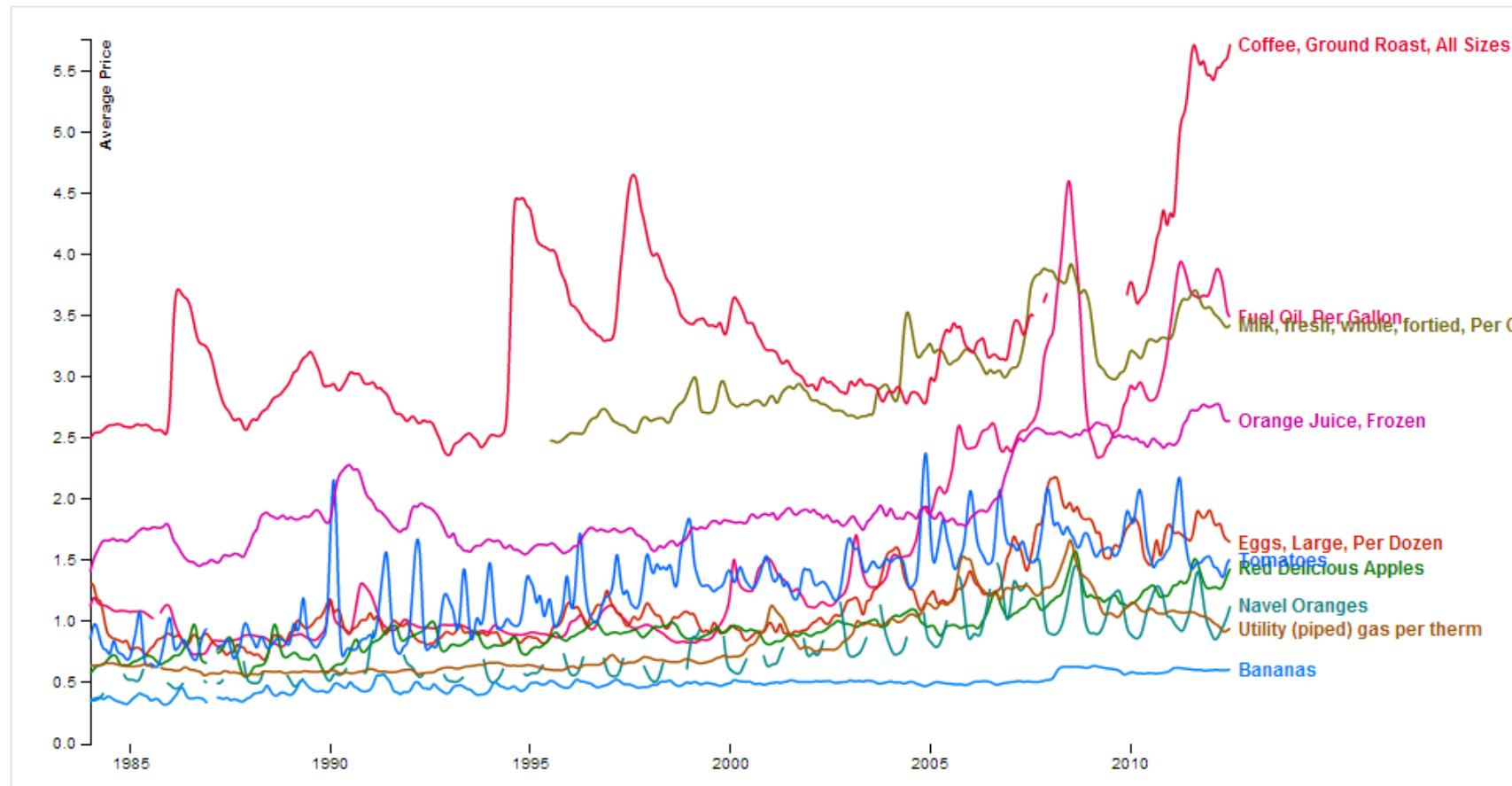
Building a lightweight, flexible D3.js dashboard · Building a tree diagram <http://nowherenearithaca.blogspot.com/2012/06/annotating-d3-example-with-docco>.

[D3.js Gallery](http://biovisualize.github.io/d3visualization/)

biovisualize.github.io/d3visualization/ ▾ Diese Seite übersetzen

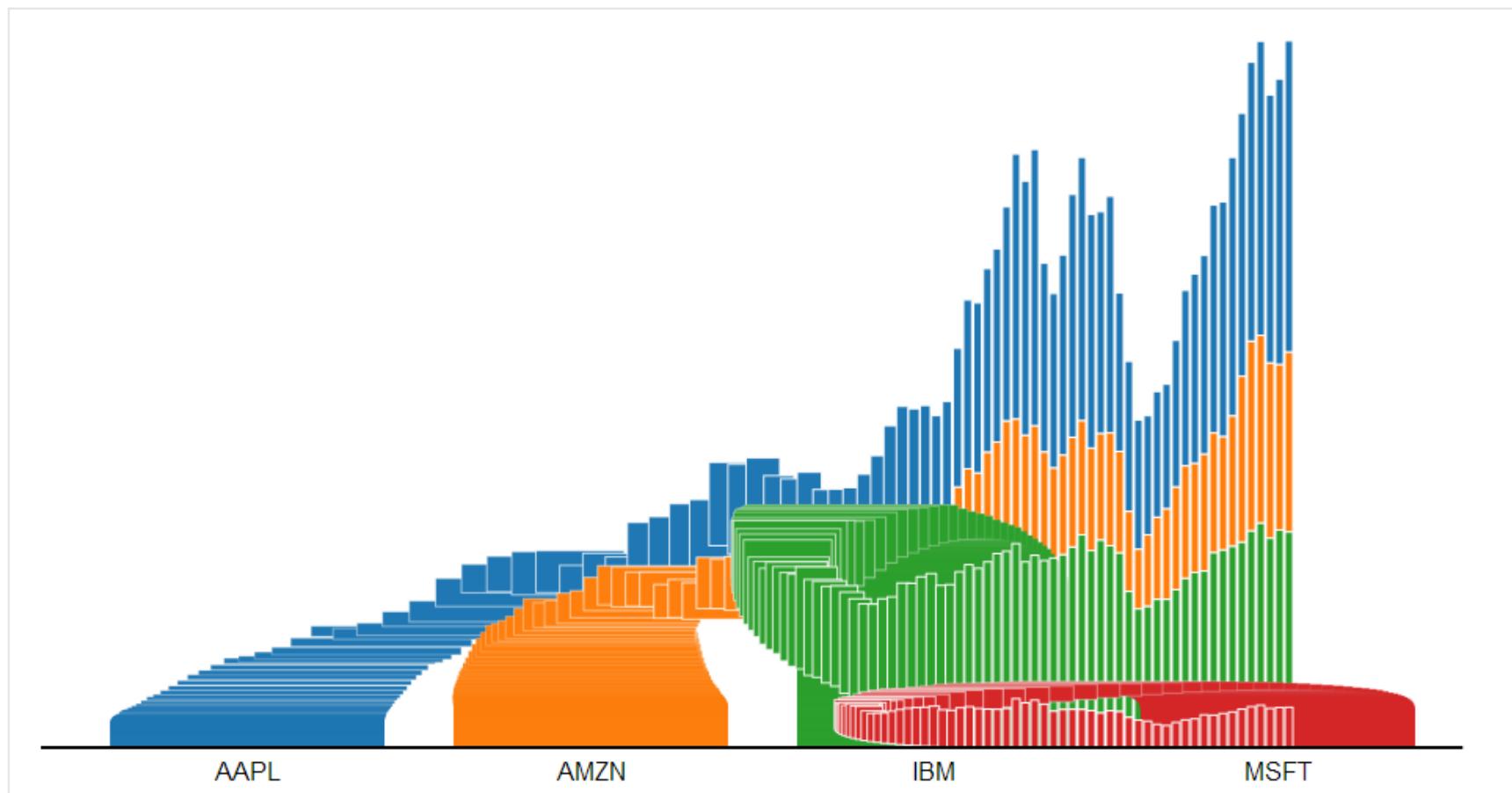
D3.js Gallery | About | The next version of this gallery is here with 1900 D3.js **examples**!
x. You can contribute to this gallery on the Google Spreadsheet or ...

Auswahl einer passenden Visualisierung



Link: <http://blocks.org/syntagmatic/3891711>

Auswahl einer passenden Visualisierung: D3.js Show Reel



Link: <http://bl.ocks.org/mbostock/1256572>

Code und Datenformat von D3.js Show Reel analysieren

index.html

```
<!DOCTYPE html>
<meta charset="utf-8">
<style type="text/css">

  svg {
    font-family: "Helvetica Neue", Helvetica;
  }

  .line {
    fill: none;
    stroke: #000;
    stroke-width: 2px;
  }

</style>
<body>
<script src="http://d3js.org/d3.v3.min.js"></script>
<script>

  var m = [20, 20, 30, 20],
      w = 960 - m[1] - m[3],
      h = 500 - m[0] - m[2];

  var x,
      y,
      duration = 1500,
      delay = 500;


```

stocks.csv

| symbol | date | price |
|--------|----------|-------|
| MSFT | Jan 2000 | 39.81 |
| MSFT | Feb 2000 | 36.35 |
| MSFT | Mar 2000 | 43.22 |
| MSFT | Apr 2000 | 28.37 |
| MSFT | May 2000 | 25.45 |
| MSFT | Jun 2000 | 32.54 |
| MSFT | Jul 2000 | 28.4 |
| MSFT | Aug 2000 | 28.4 |
| MSFT | Sep 2000 | 24.53 |
| MSFT | Oct 2000 | 28.02 |
| MSFT | Nov 2000 | 23.34 |
| MSFT | Dec 2000 | 17.65 |
| MSFT | Jan 2001 | 24.84 |
| MSFT | Feb 2001 | 24 |
| MSFT | Mar 2001 | 22.25 |
| MSFT | Apr 2001 | 27.56 |
| MSFT | May 2001 | 28.14 |
| MSFT | Jun 2001 | 29.7 |
| MSFT | Jul 2001 | 26.93 |
| MSFT | Aug 2001 | 23.21 |
| MSFT | Sep 2001 | 20.82 |
| MSFT | Oct 2001 | 23.65 |
| MSFT | Nov 2001 | 26.12 |
| MSFT | Dec 2001 | 26.95 |
| MSFT | Jan 2002 | 25.92 |

Link: <http://bl.ocks.org/mbostock/1256572>

Anpassen bestehender D3.js Snippets

Vorgehen:

1. Welche Daten werden visualisiert? -> Bevölkerungswachstum
2. Welche Visualisierungsart macht Sinn? -> D3.js Show Real
3. **Wie muss ich die Daten anpassen? -> Transponieren**
4. Was muss ich am Code Snippet anpassen -> Pfade
5. Was läuft schief? -> Debugging

Daten in LibreOffice öffnen

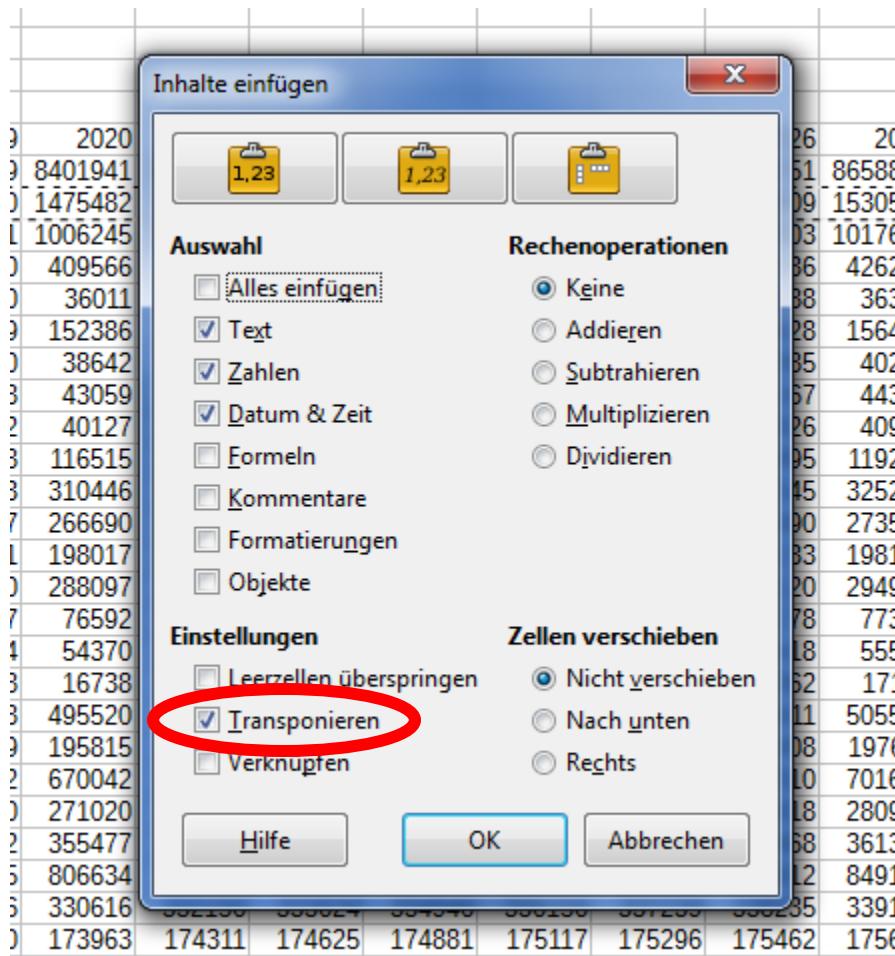
je-d-01.03.02.01.csv - LibreOffice Calc

File Edit Insert Format Table Data Tools Window Help

L41

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V |
|----|------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | Region | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| 2 | Schweiz | 7856600 | 7922090 | 7988333 | 8047559 | 8102292 | 8155127 | 8207402 | 8260073 | 8309704 | 8356859 | 8401941 | 8444913 | 8485802 | 8524627 | 8561368 | 8595882 | 8628351 | 8658886 | 8687312 | 8713831 | 8738477 |
| 3 | Zürich | 1368669 | 1382998 | 1392745 | 1402327 | 1413343 | 1424093 | 1434815 | 1445692 | 1455988 | 1465920 | 1475482 | 1484599 | 1493302 | 1501572 | 1509404 | 1516809 | 1523809 | 1530507 | 1536801 | 1542776 | 1548413 |
| 4 | Bern | 977690 | 980541 | 983815 | 986664 | 989301 | 992083 | 995044 | 998164 | 1001074 | 1003781 | 1006245 | 1008477 | 1010528 | 1012358 | 1013991 | 1015403 | 1016603 | 1017633 | 1018416 | 1019014 | 1019388 |
| 5 | Luzern | 377028 | 380487 | 383765 | 387451 | 390843 | 394152 | 397393 | 400613 | 403699 | 406700 | 409566 | 412312 | 414947 | 417473 | 419849 | 422106 | 424236 | 426253 | 428125 | 429871 | 431465 |
| 6 | Uri | 35473 | 35553 | 35670 | 35730 | 35754 | 35783 | 35808 | 35861 | 35902 | 35950 | 36011 | 36067 | 36135 | 36185 | 36227 | 36265 | 36288 | 36310 | 36329 | 36336 | 36316 |
| 7 | Schwyz | 145749 | 146185 | 147008 | 147605 | 148350 | 148968 | 149691 | 150367 | 151089 | 151729 | 152386 | 153000 | 153633 | 154228 | 154815 | 155369 | 155928 | 156434 | 156932 | 157388 | 157833 |
| 8 | Obwalden | 35426 | 35801 | 36172 | 36592 | 36900 | 37188 | 37484 | 37808 | 38077 | 38350 | 38642 | 38931 | 39185 | 39438 | 39670 | 39882 | 40085 | 40282 | 40456 | 40600 | 40732 |
| 9 | Nidwalden | 40912 | 41035 | 41231 | 41422 | 41646 | 41868 | 42106 | 42345 | 42594 | 42838 | 43059 | 43263 | 43456 | 43646 | 43828 | 44011 | 44167 | 44303 | 44442 | 44541 | 44642 |
| 10 | Glarus | 38628 | 38739 | 38965 | 39147 | 39289 | 39432 | 39571 | 39718 | 39864 | 39992 | 40127 | 40248 | 40369 | 40485 | 40597 | 40714 | 40826 | 40926 | 41030 | 41129 | 41208 |
| 11 | Zug | 111164 | 111416 | 112025 | 112569 | 113162 | 113757 | 114362 | 114946 | 115518 | 116028 | 116515 | 116969 | 117404 | 117807 | 118189 | 118559 | 118895 | 119215 | 119498 | 119770 | 120015 |
| 12 | Freiburg | 277297 | 281412 | 285670 | 289501 | 292912 | 296150 | 299235 | 302252 | 305114 | 307843 | 310446 | 312934 | 315259 | 317514 | 319646 | 321655 | 323545 | 325297 | 326946 | 328480 | 329873 |
| 13 | Solothurn | 254170 | 255956 | 257755 | 259267 | 260490 | 261572 | 262658 | 263692 | 264681 | 265667 | 266690 | 267764 | 268785 | 269828 | 270837 | 271804 | 272690 | 273514 | 274256 | 274917 | 275513 |
| 14 | Basel-Stadt | 188962 | 190413 | 192406 | 193859 | 194829 | 195633 | 196317 | 196953 | 197418 | 197781 | 198017 | 198197 | 198305 | 198352 | 198347 | 198300 | 198233 | 198162 | 198069 | 197981 | 197900 |
| 15 | Basel-Landschaft | 274387 | 275900 | 277578 | 279139 | 280439 | 281761 | 283063 | 284390 | 285696 | 286920 | 288097 | 289240 | 290298 | 291345 | 292330 | 293253 | 294120 | 294928 | 295674 | 296394 | 297053 |
| 16 | Schaffhausen | 75737 | 75716 | 75748 | 75769 | 75835 | 75932 | 76077 | 76236 | 76364 | 76477 | 76592 | 76700 | 76795 | 76916 | 77036 | 77165 | 77278 | 77386 | 77484 | 77583 | 77682 |
| 17 | Appenzell A.Rh. | 53019 | 53041 | 53203 | 53351 | 53469 | 53611 | 53744 | 53906 | 54055 | 54204 | 54370 | 54536 | 54699 | 54878 | 55066 | 55243 | 55418 | 55589 | 55749 | 55890 | 56029 |
| 18 | Appenzell I.Rh. | 15808 | 15964 | 16052 | 16154 | 16254 | 16358 | 16429 | 16515 | 16591 | 16678 | 16738 | 16797 | 16859 | 16912 | 16950 | 17009 | 17062 | 17112 | 17154 | 17181 | 17209 |
| 19 | St. Gallen | 476374 | 477380 | 478706 | 480360 | 482432 | 484758 | 487260 | 489742 | 491932 | 493798 | 49520 | 497121 | 498701 | 500204 | 501723 | 503111 | 504411 | 505593 | 506668 | 507589 | 508431 |
| 20 | Graubünden | 192570 | 193209 | 193710 | 194024 | 194150 | 194336 | 194577 | 194898 | 195216 | 195519 | 195815 | 196115 | 196414 | 196697 | 196950 | 197189 | 197408 | 197611 | 197782 | 197919 | 198047 |
| 21 | Aargau | 607848 | 615153 | 622407 | 629051 | 635238 | 641319 | 647320 | 653312 | 659082 | 664662 | 670042 | 675210 | 680174 | 684897 | 689427 | 693726 | 697810 | 701675 | 705308 | 708723 | 711936 |
| 22 | Thurgau | 247633 | 250470 | 253515 | 256241 | 258663 | 260965 | 263154 | 265277 | 267311 | 269220 | 271020 | 272735 | 274350 | 275867 | 277283 | 278596 | 279818 | 280936 | 281941 | 282856 | 283694 |
| 23 | Tessin | 338306 | 340830 | 343572 | 345787 | 347542 | 349084 | 350512 | 351920 | 353209 | 354372 | 355477 | 356479 | 357424 | 358320 | 359166 | 359931 | 360668 | 361326 | 361976 | 362574 | 363135 |
| 24 | Waadt | 712664 | 724280 | 737059 | 740805 | 757620 | 766559 | 775183 | 783724 | 791715 | 799355 | 806634 | 813631 | 820313 | 826678 | 832717 | 838456 | 843912 | 849109 | 854010 | 858701 | 863131 |
| 25 | Wallis | 310764 | 313657 | 316532 | 318757 | 320541 | 322211 | 323856 | 325591 | 327297 | 328976 | 330616 | 332156 | 333624 | 334946 | 336156 | 337239 | 338235 | 339123 | 339922 | 340620 | 341236 |
| 26 | Neuenburg | 171803 | 171924 | 172212 | 172356 | 172397 | 172497 | 172680 | 172978 | 173283 | 173620 | 173963 | 174311 | 174625 | 174881 | 175117 | 175296 | 175462 | 175607 | 175737 | 175867 | 175990 |
| 27 | Genf | 458299 | 463738 | 470332 | 475705 | 480060 | 484052 | 487873 | 491796 | 495399 | 498823 | 502095 | 505249 | 508268 | 511178 | 513979 | 516675 | 519297 | 521879 | 524409 | 526932 | 529423 |
| 28 | Jura | 70220 | 70292 | 70480 | 70646 | 70833 | 71005 | 71190 | 71377 | 71536 | 71656 | 71776 | 71872 | 71950 | 72027 | 72068 | 72116 | 72147 | 72176 | 72198 | 72199 | 72183 |

Daten kopieren und transponieren



je-d-01.03.02.01.csv - LibreOffice Calc

Datei Bearbeiten Ansicht Einfügen Format Tabelle

Liberation Sans 10 a a a

G14 Σ

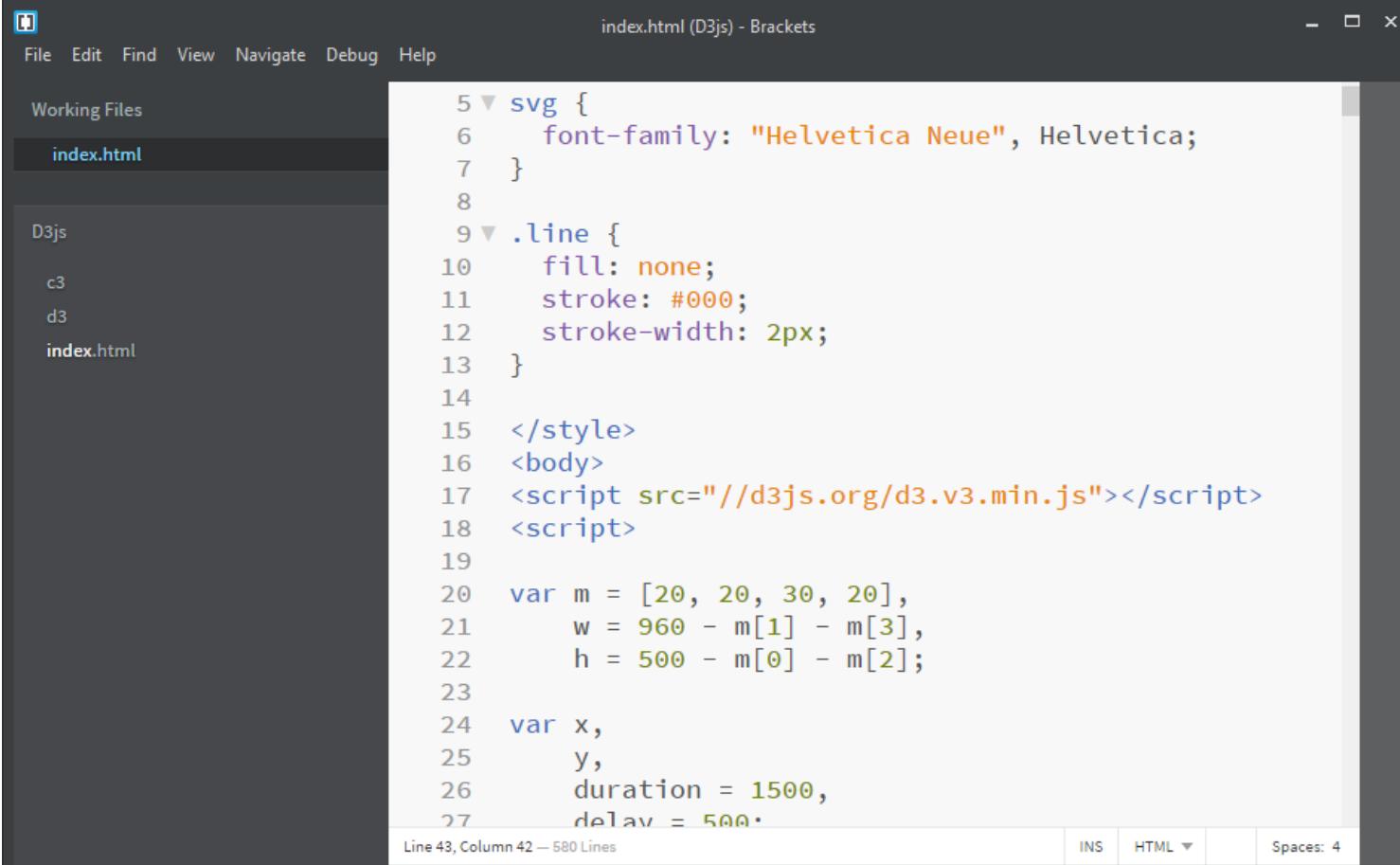
| | A | B | C |
|----|--------|------|--------------|
| 1 | kanton | jahr | bevoelkerung |
| 2 | Zürich | 2010 | 1368669 |
| 3 | Zürich | 2011 | 1382998 |
| 4 | Zürich | 2012 | 1392745 |
| 5 | Zürich | 2013 | 1402327 |
| 6 | Zürich | 2014 | 1413343 |
| 7 | Zürich | 2015 | 1424093 |
| 8 | Zürich | 2016 | 1434815 |
| 9 | Zürich | 2017 | 1445692 |
| 10 | Zürich | 2018 | 1455988 |
| 11 | Zürich | 2019 | 1465920 |
| 12 | Zürich | 2020 | 1475482 |
| 13 | Zürich | 2021 | 1484599 |
| 14 | Zürich | 2022 | 1493302 |
| 15 | Zürich | 2023 | 1501572 |
| 16 | Zürich | 2024 | 1509404 |
| 17 | Zürich | 2025 | 1516809 |
| 18 | Zürich | 2026 | 1523809 |
| 19 | Zürich | 2027 | 1530507 |
| 20 | Zürich | 2028 | 1536801 |
| 21 | Zürich | 2029 | 1542776 |
| 22 | Zürich | 2030 | 1548413 |
| 23 | Zürich | 2031 | 1553805 |
| 24 | Zürich | 2032 | 1558908 |

Anpassen bestehender D3.js Snippets

Vorgehen:

1. Welche Daten werden visualisiert? -> Bevölkerungswachstum
2. Welche Visualisierungsart macht Sinn? -> D3.js Show Real
3. Wie muss ich die Daten anpassen? -> Transponieren
4. **Was muss ich am Code Snippet anpassen -> Pfade**
5. Was läuft schief? -> Debugging

Code Snippet in Bracket kopieren

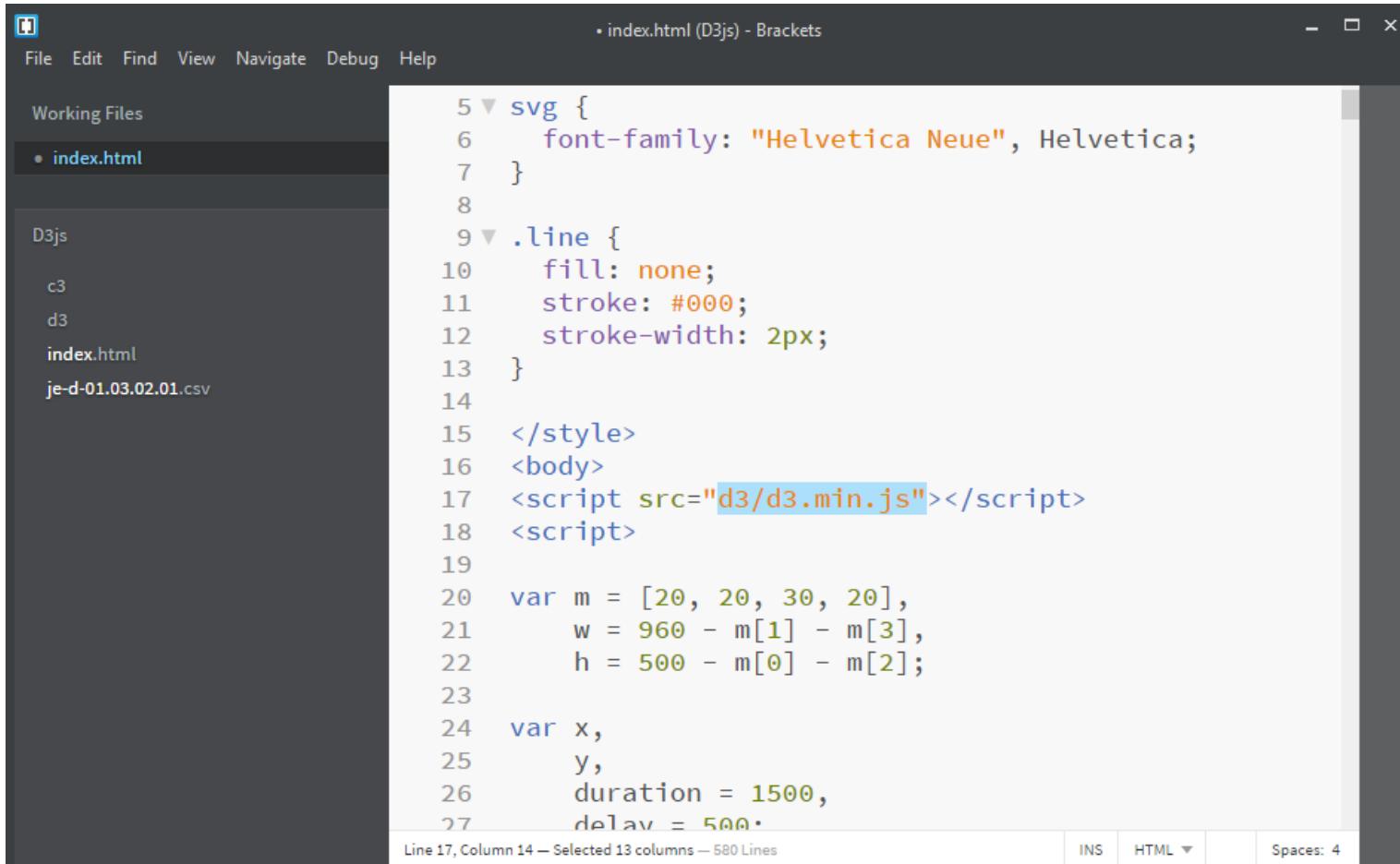


The screenshot shows the Brackets code editor with the file 'index.html' open. The code editor has a dark theme. The left sidebar shows 'Working Files' with 'index.html' selected. The main editor area contains the following code:

```
5 ▼ svg {
6   font-family: "Helvetica Neue", Helvetica;
7 }
8
9 ▼ .line {
10   fill: none;
11   stroke: #000;
12   stroke-width: 2px;
13 }
14
15 </style>
16 <body>
17 <script src="/d3js.org/d3.v3.min.js"></script>
18 <script>
19
20 var m = [20, 20, 30, 20],
21     w = 960 - m[1] - m[3],
22     h = 500 - m[0] - m[2];
23
24 var x,
25     y,
26     duration = 1500,
27     delay = 500.
```

The status bar at the bottom shows 'Line 43, Column 42 — 580 Lines' and 'Spaces: 4'.

Pfad zu D3.js Bibliothek anpassen

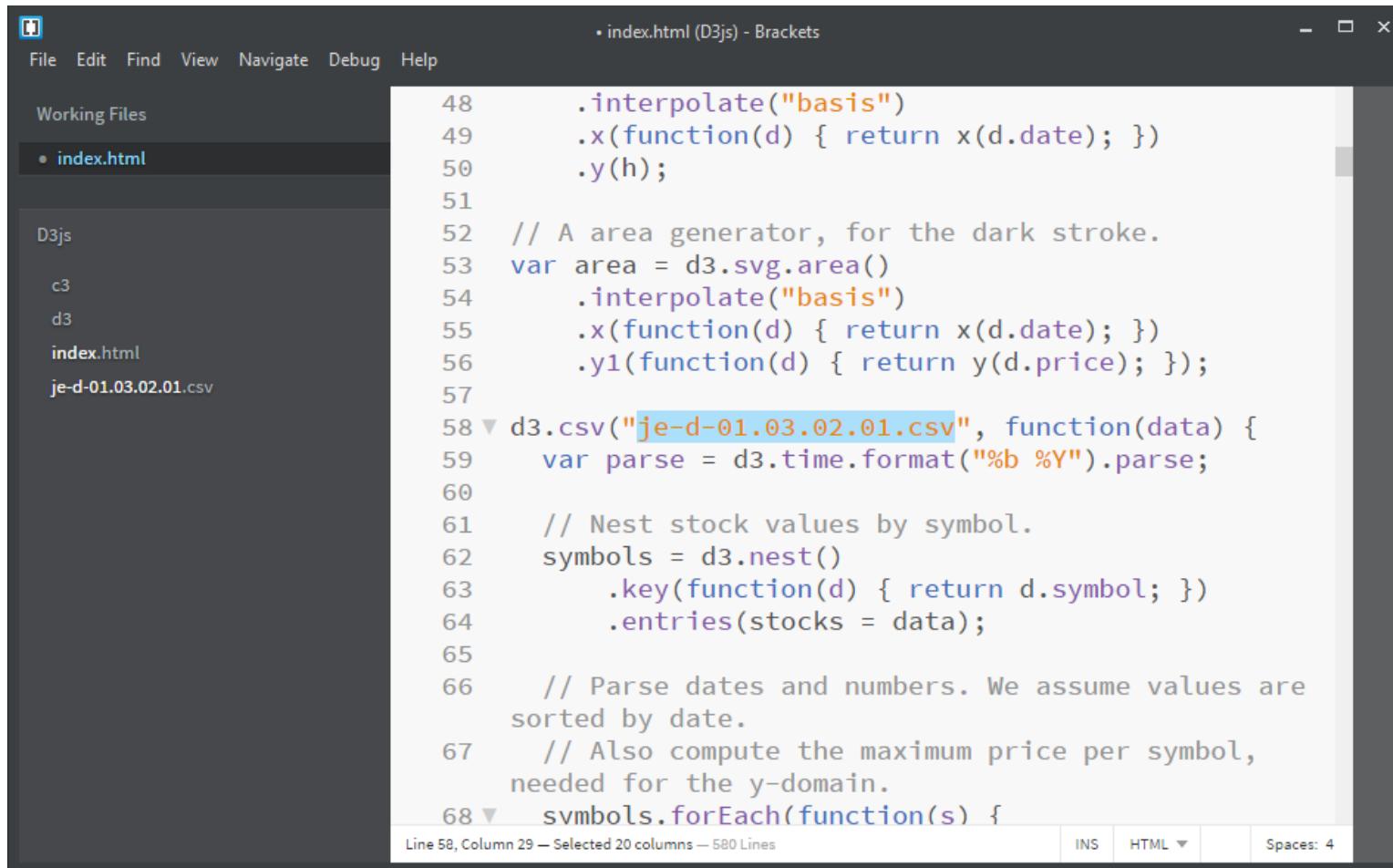


The screenshot shows the Brackets IDE interface with the file 'index.html' open. The code editor displays the following JavaScript code:

```
5 ▼ svg {
6     font-family: "Helvetica Neue", Helvetica;
7 }
8
9 ▼ .line {
10     fill: none;
11     stroke: #000;
12     stroke-width: 2px;
13 }
14
15 </style>
16 <body>
17 <script src="d3/d3.min.js"></script>
18 <script>
19
20 var m = [20, 20, 30, 20],
21     w = 960 - m[1] - m[3],
22     h = 500 - m[0] - m[2];
23
24 var x,
25     y,
26     duration = 1500,
27     delay = 500;
```

The line 'src="d3/d3.min.js"' is highlighted in blue, indicating it is selected. The status bar at the bottom of the editor shows 'Line 17, Column 14 — Selected 13 columns — 580 Lines'.

Pfad zu CSV-Daten anpassen



The screenshot shows the Brackets IDE interface with a dark theme. The left sidebar lists 'Working Files' containing 'index.html' and 'D3js' folder with files 'c3', 'd3', 'index.html', and 'je-d-01.03.02.01.csv'. The main code editor window displays the following JavaScript code:

```
48     .interpolate("basis")
49     .x(function(d) { return x(d.date); })
50     .y(h);
51
52 // A area generator, for the dark stroke.
53 var area = d3.svg.area()
54     .interpolate("basis")
55     .x(function(d) { return x(d.date); })
56     .y1(function(d) { return y(d.price); });
57
58 ▼ d3.csv("je-d-01.03.02.01.csv", function(data) {
59     var parse = d3.time.format("%b %Y").parse;
60
61     // Nest stock values by symbol.
62     symbols = d3.nest()
63         .key(function(d) { return d.symbol; })
64         .entries(stocks = data);
65
66     // Parse dates and numbers. We assume values are
67     // sorted by date.
68     // Also compute the maximum price per symbol,
69     // needed for the y-domain.
70     symbols.forEach(function(s) {
```

Line 58, Column 29 — Selected 20 columns — 580 Lines

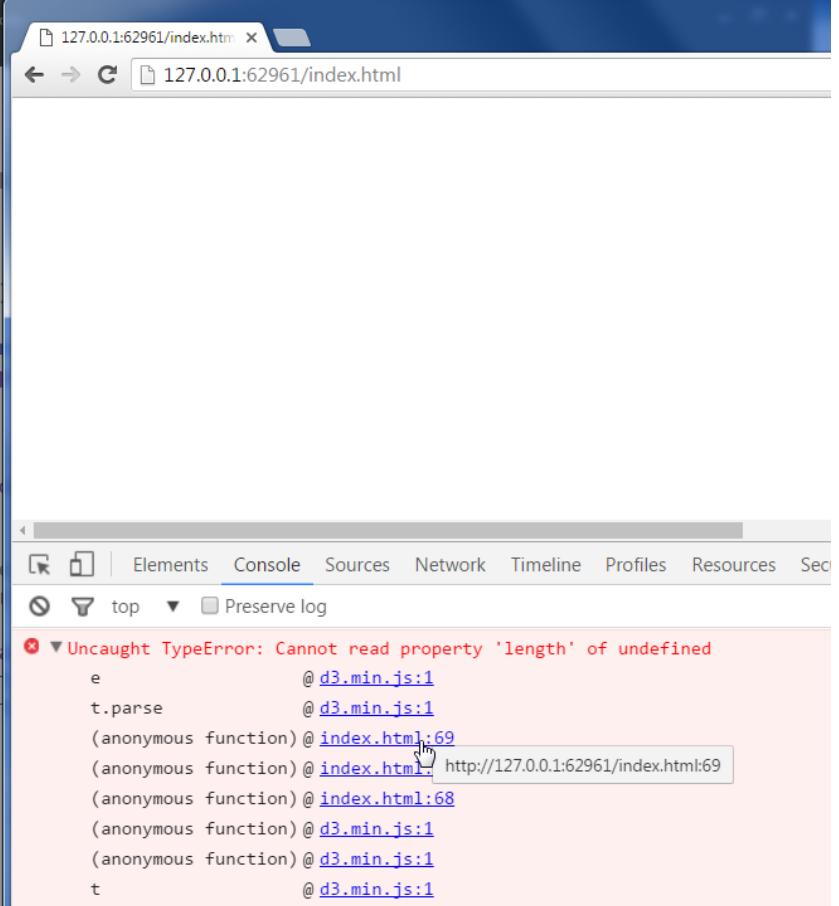
INS HTML ▾ Spaces: 4

Anpassen bestehender D3.js Snippets

Vorgehen:

1. Welche Daten werden visualisiert? -> Bevölkerungswachstum
2. Welche Visualisierungsart macht Sinn? -> D3.js Show Real
3. Wie muss ich die Daten anpassen? -> Transponieren
4. Was muss ich am Code Snippet anpassen -> Pfade
5. **Was läuft schief?** -> Debugging

A) Gar keine Darstellung -> Console



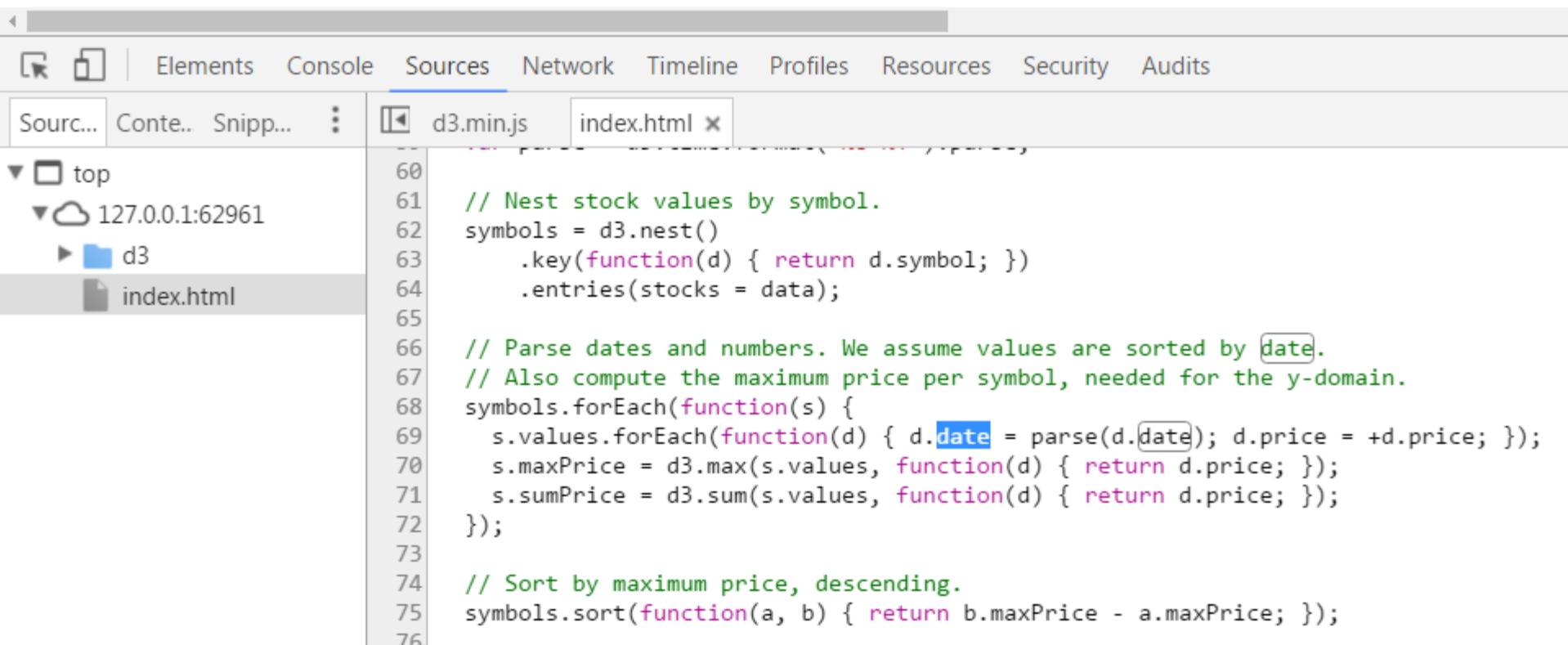
The image shows a developer's environment with a code editor and a browser window. The code editor on the left displays a JavaScript file with D3.js code. The browser window on the right shows a blank white page with the URL `127.0.0.1:62961/index.html`. The browser's developer tools are open, specifically the 'Console' tab, which displays an error message: `Uncaught TypeError: Cannot read property 'length' of undefined`. The error is traced back to line 69 of the code, which is `s.values.forEach(function(d) { d.date = parse(d.date); })`.

```

index.html (D3js) - Brackets
File Edit Find View Navigate Debug Help
Working Files
index.html
je-d-01.03.02.01.csv
D3js
c3
d3
~lock.je-d-01.03.02.01.csv#
index.html
je-d-01.03.02.01.csv

48     .interpolate("basis")
49     .x(function(d) { return x(d.date); })
50     .y(h);
51
52 // A area generator, for the dark stroked areas.
53 var area = d3.svg.area()
54     .interpolate("basis")
55     .x(function(d) { return x(d.date); })
56     .y1(function(d) { return y(d.price); })
57
58 d3.csv("je-d-01.03.02.01.csv", function(error, data) {
59     var parse = d3.time.format("%b %Y").parse;
60
61     // Nest stock values by symbol.
62     symbols = d3.nest()
63         .key(function(d) { return d.symbol; })
64         .entries(stocks = data);
65
66     // Parse dates and numbers. We assume
67     // that the CSV has valid numbers.
68     symbols.forEach(function(s) {
69         s.values.forEach(function(d) { d.date = parse(d.date); })
70         s.maxPrice = d3.max(s.values, function(d) { return d.price; })
71         s.sumPrice = d3.sum(s.values, function(d) { return d.price; })
72     });
73
74     // Sort by maximum price, descending.
75     symbols.sort(function(a, b) { return b.maxPrice - a.maxPrice; })
76
77     var g = svg.selectAll("g")
78         .data(symbols)
  
```

Fehler in der Beschriftung der Spalten

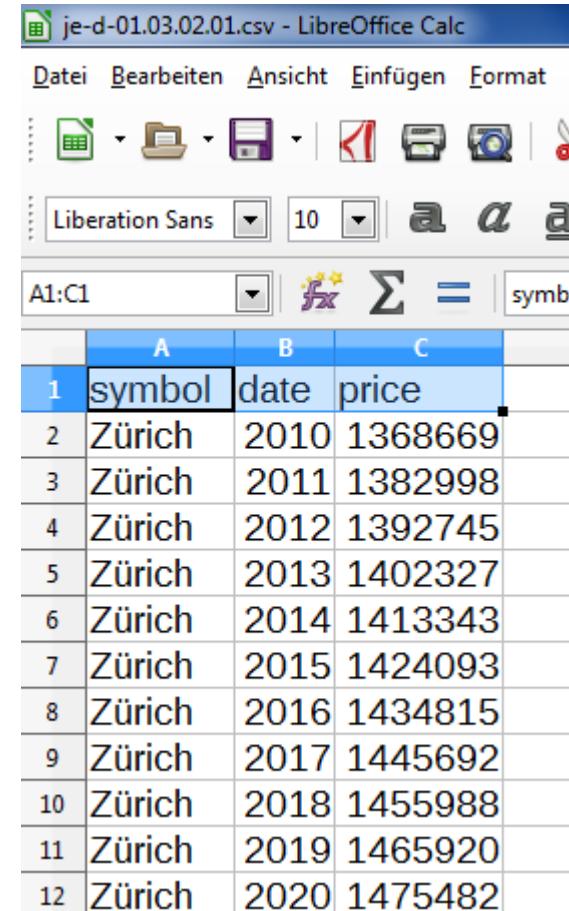


```
60 // Nest stock values by symbol.
61 symbols = d3.nest()
62   .key(function(d) { return d.symbol; })
63   .entries(stocks = data);
64
65 // Parse dates and numbers. We assume values are sorted by date.
66 // Also compute the maximum price per symbol, needed for the y-domain.
67 symbols.forEach(function(s) {
68   s.values.forEach(function(d) { d.date = parse(d.date); d.price = +d.price; });
69   s.maxPrice = d3.max(s.values, function(d) { return d.price; });
70   s.sumPrice = d3.sum(s.values, function(d) { return d.price; });
71 });
72
73 // Sort by maximum price, descending.
74 symbols.sort(function(a, b) { return b.maxPrice - a.maxPrice; });
75
76
```

Fehler in der Beschriftung der Spalten

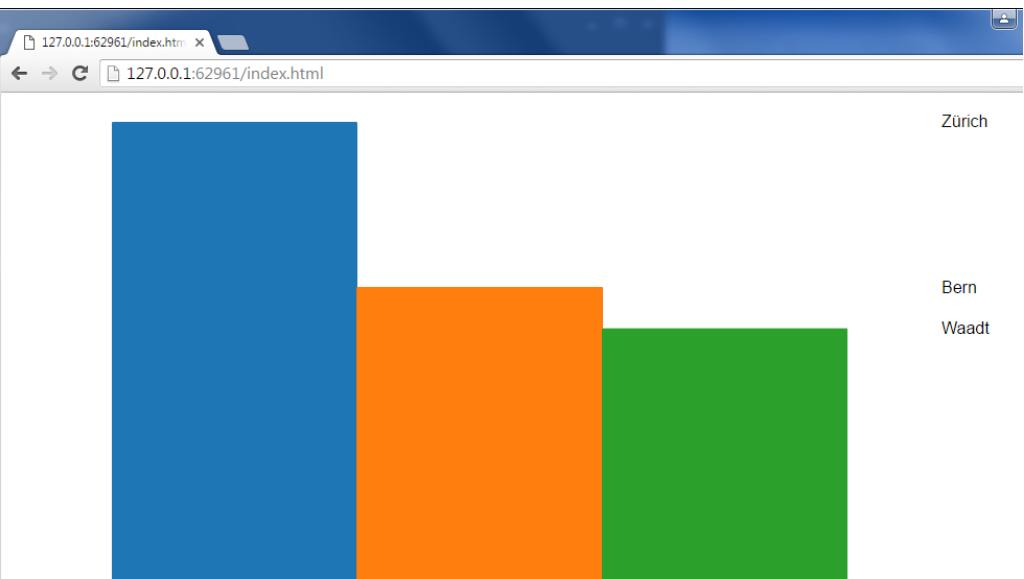
stocks.csv

```
symbol,date,price
MSFT,Jan 2000,39.81
MSFT,Feb 2000,36.35
MSFT,Mar 2000,43.22
MSFT,Apr 2000,28.37
MSFT,May 2000,25.45
MSFT,Jun 2000,32.54
MSFT,Jul 2000,28.4
MSFT,Aug 2000,28.4
MSFT,Sep 2000,24.53
MSFT,Oct 2000,28.02
```



| | A | B | C |
|----|--------|------|---------|
| 1 | symbol | date | price |
| 2 | Zürich | 2010 | 1368669 |
| 3 | Zürich | 2011 | 1382998 |
| 4 | Zürich | 2012 | 1392745 |
| 5 | Zürich | 2013 | 1402327 |
| 6 | Zürich | 2014 | 1413343 |
| 7 | Zürich | 2015 | 1424093 |
| 8 | Zürich | 2016 | 1434815 |
| 9 | Zürich | 2017 | 1445692 |
| 10 | Zürich | 2018 | 1455988 |
| 11 | Zürich | 2019 | 1465920 |
| 12 | Zürich | 2020 | 1475482 |

B) Fehlerhafte Darstellung



index.html (D3js) - Brackets

File Edit Find View Navigate Debug Help

Working Files

- index.html
- je-d-01.03.02.01.csv

D3js

- c3
- d3
- ~lockje-d-01.03.02.01.csv#
- index.html
- je-d-01.03.02.01.csv

```
38      symbols;
39
40  // A line generator, for the dark stro
41  var line = d3.svg.line()
42    .interpolate("basis")
43    .x(function(d) { return x(d.date);
44    .y(function(d) { return y(d.price)
45
46  // A line generator, for the dark stro
47  var axis = d3.svg.line()
48    .interpolate("basis")
49    .x(function(d) { return x(d.date);
50    .y(h);
51
52  // A area generator, for the dark stro
53  var area = d3.svg.area()
54    .interpolate("basis")
55    .x(function(d) { return x(d.date);
56    .y1(function(d) { return y(d.price);
57
58 d3.csv("je-d-01.03.02.01.csv", function
59   var parse = d3.time.format("%b %Y").i
60
61   // Nest stock values by symbol.
62   symbols = d3.nest()
```

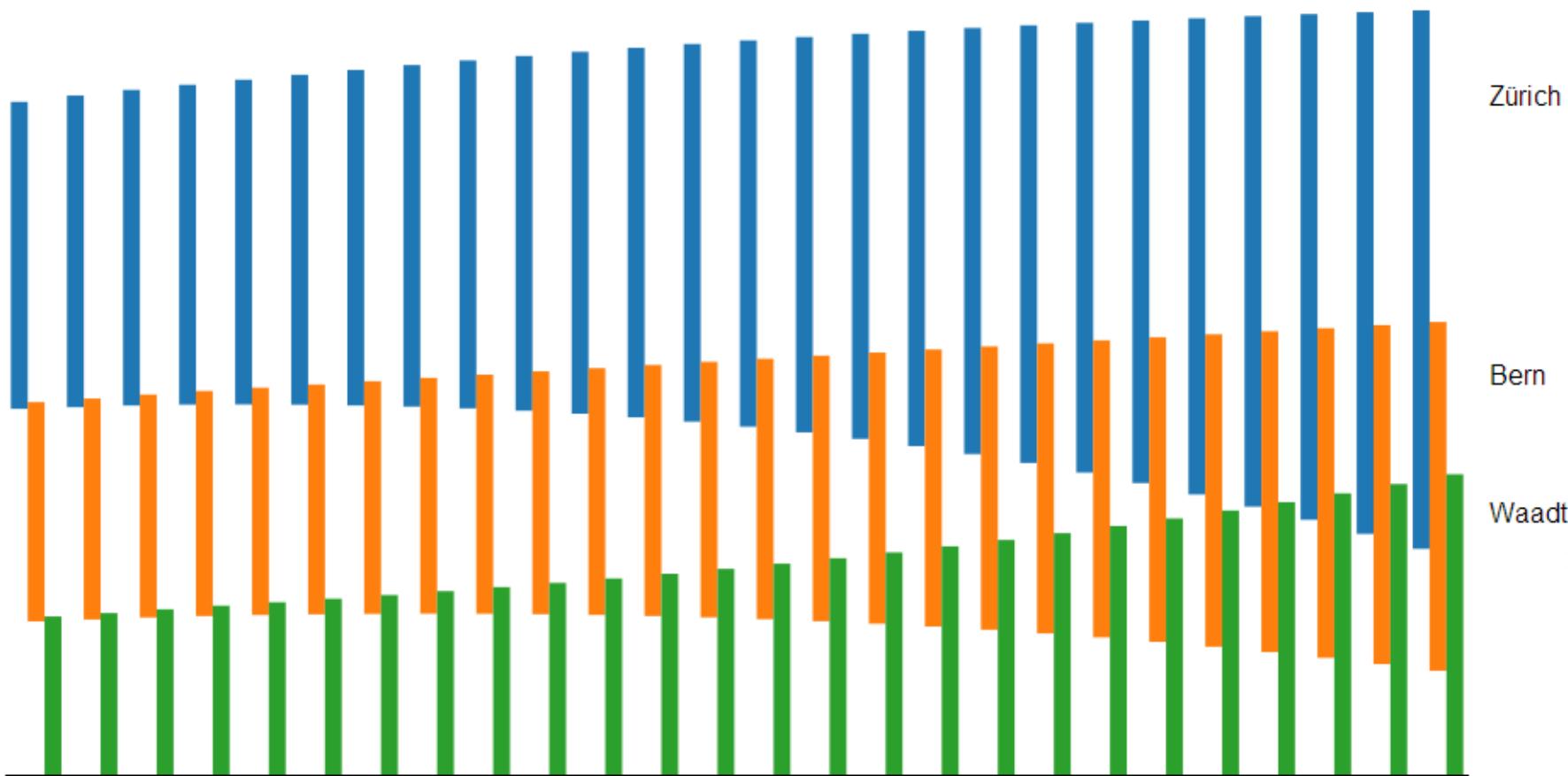
Falsches Datumsformat

```
52 // A area generator, for the dark stroke.  
53 var area = d3.svg.area()  
54     .interpolate("basis")  
55     .x(function(d) { return x(d.date); })  
56     .y1(function(d) { return y(d.price); });  
57  
58 ▼ d3.csv("je-d-01.03.02.01.csv", function(data) {  
59     var parse = d3.time.format("%b %Y").parse;  
60  
61     // Nest stock values by symbol.  
62     symbols = d3.nest()  
63         .key(function(d) { return d.symbol; })  
64         .entries(stocks = data);
```

Korrektes Datumsformat

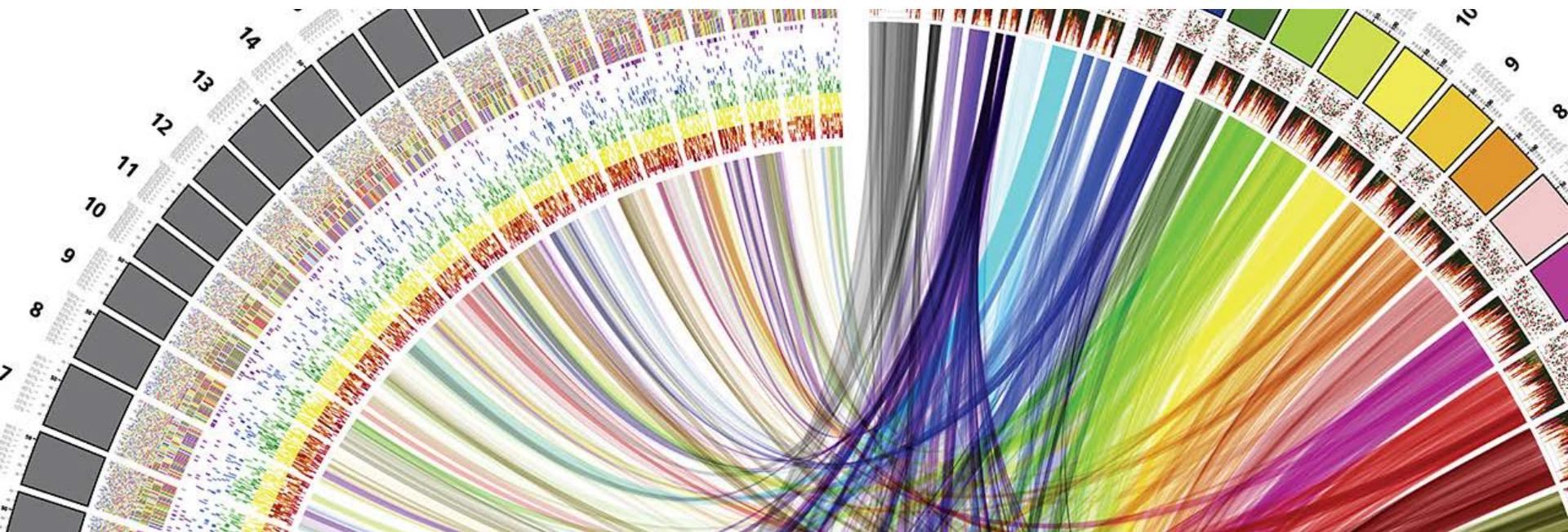
```
52 // A area generator, for the dark stroke.  
53 var area = d3.svg.area()  
54   .interpolate("basis")  
55   .x(function(d) { return x(d.date); })  
56   .y1(function(d) { return y(d.price); }));  
57  
58 ▼ d3.csv("je-d-01.03.02.01.csv", function(data) {  
59   var parse = d3.time.format("%Y").parse;  
60  
61   // Nest stock values by symbol.  
62   symbols = d3.nest()  
63     .key(function(d) { return d.symbol; })  
64     .entries(stocks = data);
```

Jetzt klappts!



Agenda

1. Anpassen von bestehenden D3.js Snippets
2. **C3.js Einführung**
3. Weitere D3.js basierte Bibliotheken

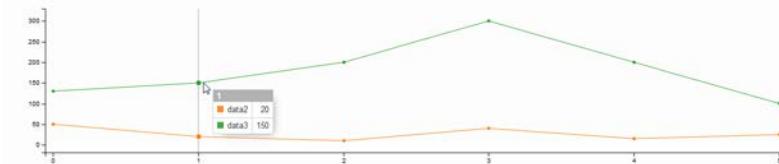


C3.js JavaScript Bibliothek

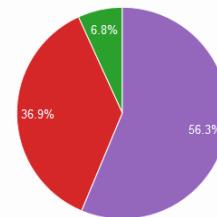
- › **Vereinfacht die Nutzung von D3.js**
- › **Verschiedene Typen** von Diagrammen werden einfach erstellt
- › Diagramme bringen **out-of-the-box Funktionalitäten** mit:
 - Anzeigen und Ausblenden von Datensätzen
 - Anzeigen von Tooltip Boxen mit Angaben zu Datenpunkten
 - Automatisiertes Skalieren der Achsen
 - Visualisierungshilfen (graue Linie)
- › Viele weitere **Eigenschaften** einfach hinzufügbar:
 - Zooming der Daten
 - Daten mittels Transitionen nachladen
 - Skalen und Gitterlinien hinzufügen
 - Achsen, Labels, Farben etc. anpassbar

Diagramm-Typen mit C3.js

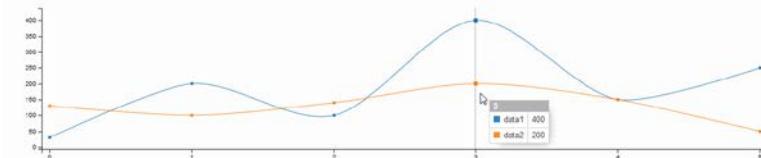
Line Chart



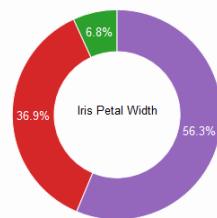
Pie Chart



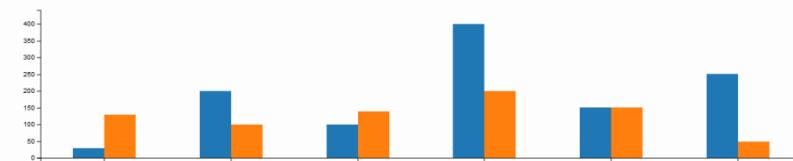
Spline Chart



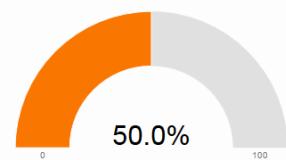
Donut Chart



Bar Chart



Gauge Chart



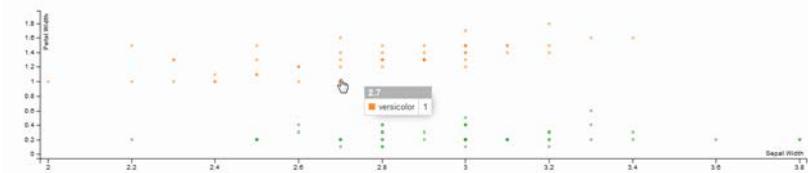
Link: <http://c3js.org/examples.html>

Diagramm-Typen mit C3.js

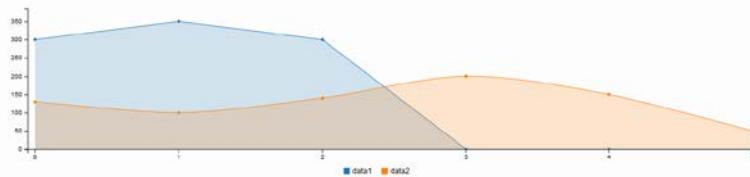
Stacked Bar Chart



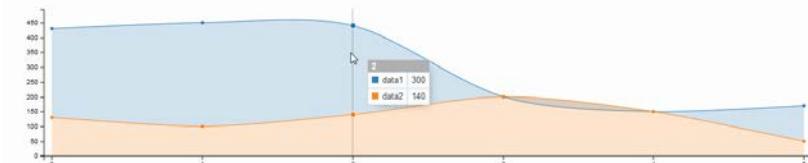
Scatter Plot



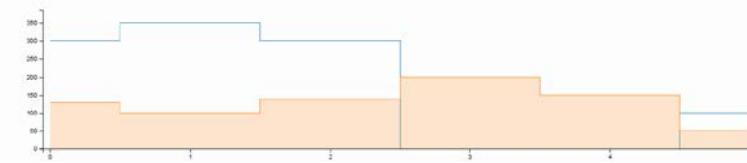
Area Chart



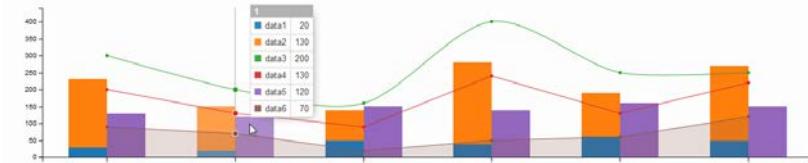
Stacked Area Chart



Step Chart



Combination Chart



Link: <http://c3js.org/examples.html>

Einbindung C3.js

- > Download aktuelle C3.js Version:
<https://github.com/masayuki0812/c3/releases/latest>
- > Datei «Source code (zip)» entzippen in lokales Verzeichnis «c3»:

Downloads

 [Source code \(zip\)](#)

| Documents library | | | | |
|-------------------|------------------|-----------------|------|--------|
| c3 | Name | Date modified | Type | Size |
| extensions | 23.03.2016 20:04 | File folder | | |
| htdocs | 23.03.2016 20:04 | File folder | | |
| spec | 23.03.2016 20:04 | File folder | | |
| src | 23.03.2016 20:04 | File folder | | |
| .editorconfig | 17.03.2015 01:08 | EDITORCONF... | | 1 KB |
| .gitignore | 17.03.2015 01:08 | GITIGNORE File | | 1 KB |
| .jshintrc | 17.03.2015 01:08 | JSHINTRC File | | 1 KB |
| .travis.yml | 17.03.2015 01:08 | YML File | | 1 KB |
| bower.json | 17.03.2015 01:08 | JSON File | | 1 KB |
| c3.css | 17.03.2015 01:08 | Cascading St... | | 3 KB |
| c3.js | 17.03.2015 01:08 | JS File | | 290 KB |
| c3.min.css | 17.03.2015 01:08 | Cascading St... | | 2 KB |
| c3.min.js | 17.03.2015 01:08 | JS File | | 135 KB |
| component.json | 17.03.2015 01:08 | JSON File | | 1 KB |
| Gruntfile.coffee | 17.03.2015 01:08 | COFFEE File | | 4 KB |
| LICENSE | 17.03.2015 01:08 | File | | 2 KB |
| package.json | 17.03.2015 01:08 | JSON File | | 1 KB |
| README.md | 17.03.2015 01:08 | MD File | | 4 KB |

Link: <http://c3js.org/gettingstarted.html#setup>

Einbindung C3.js

- > Laden von C3.js CSS und JavaScript Bibliotheken im HTML-Head:

```
<!-- Load c3.css -->
<link href="c3/c3.css" rel="stylesheet" type="text/css">

<!-- Load d3.js and c3.js -->
<script type="text/javascript" src="d3/d3.min.js"></script>
<script type="text/javascript" src="c3/c3.min.js"></script>
```

Wichtig: Auch D3.js muss eingebunden werden!

Link: <http://c3js.org/gettingstarted.html#setup>

Diagramm generieren

- > C3 generates a chart by calling `generate()` with the argument object, and an element including the chart will insert into the element specified as a selector in that argument as `bindto`.

- > HTML :

```
<div id="chart"></div>
```

- > JavaScript :

```
var chart = c3.generate({
  bindto: '#chart',
  data: {
    columns: [
      ['data1', 30, 200, 100, 400, 150, 250],
      ['data2', 50, 20, 10, 40, 15, 25]
    ]
  }
});
```

Link: <http://c3js.org/gettingstarted.html#generate>

Diagramm generieren

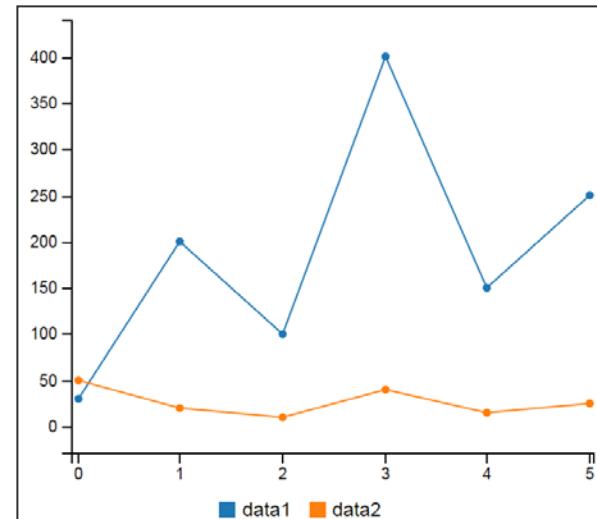
```

<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title>C3 Demo</title>

    <!-- Load c3.css -->
    <link href="c3/c3.css" rel="stylesheet" type="text/css">

    <!-- Load d3.js and c3.js -->
    <script type="text/javascript" src="d3/d3.min.js"></script>
    <script type="text/javascript" src="c3/c3.min.js"></script>
  </head>
  <body>
    <div id="chart"></div>
    <script type="text/javascript">
      var chart = c3.generate({
        bindto: '#chart',
        data: {
          columns: [
            ['data1', 30, 200, 100, 400, 150, 250],
            ['data2', 50, 20, 10, 40, 15, 25]
          ]
        }
      });
    </script>
  </body>
</html>

```

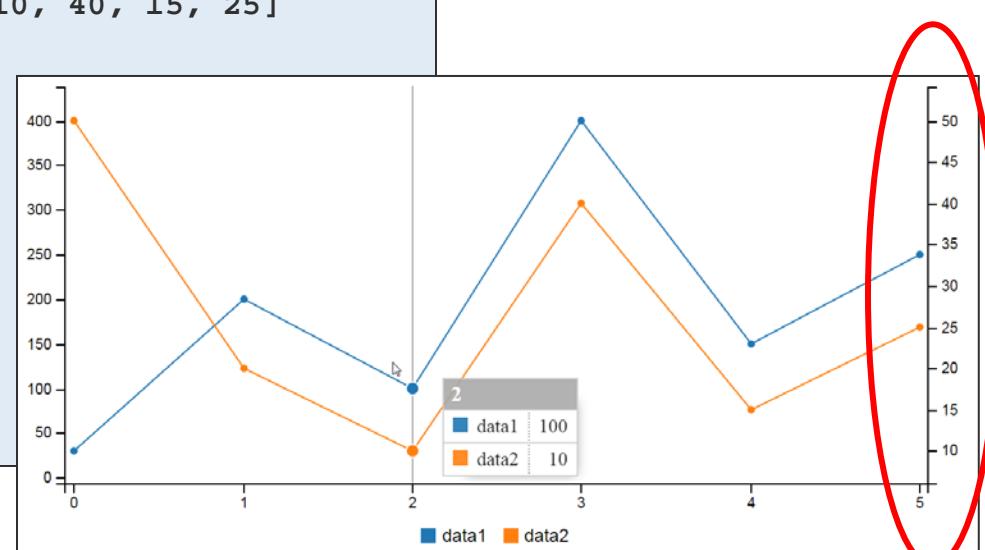


Link: <http://c3js.org/gettingstarted.html#generate>

Diagramm anpassen

- > Zusätzliche Achse einfügen:

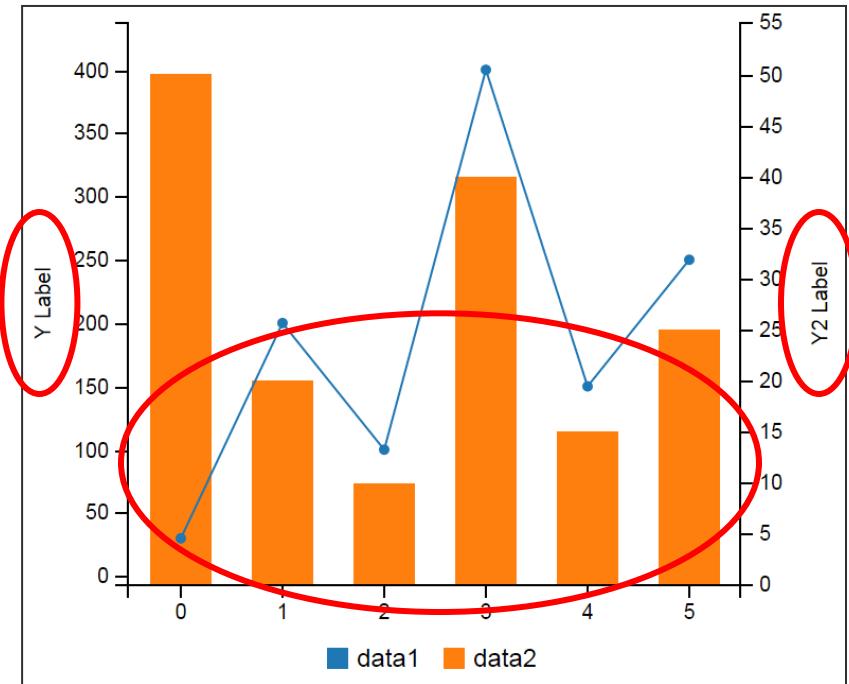
```
var chart = c3.generate({  
  bindto: '#chart',  
  data: {  
    columns: [  
      ['data1', 30, 200, 100, 400, 150, 250],  
      ['data2', 50, 20, 10, 40, 15, 25]  
    ],  
    axes: {  
      data2: 'y2'  
    },  
    axis: {  
      y2: {  
        show: true  
      }  
    }  
  }  
});
```



Link: <http://c3js.org/gettingstarted.html#customize>

Diagramm anpassen

- > Achsenbeschriftung und Balken einfügen:



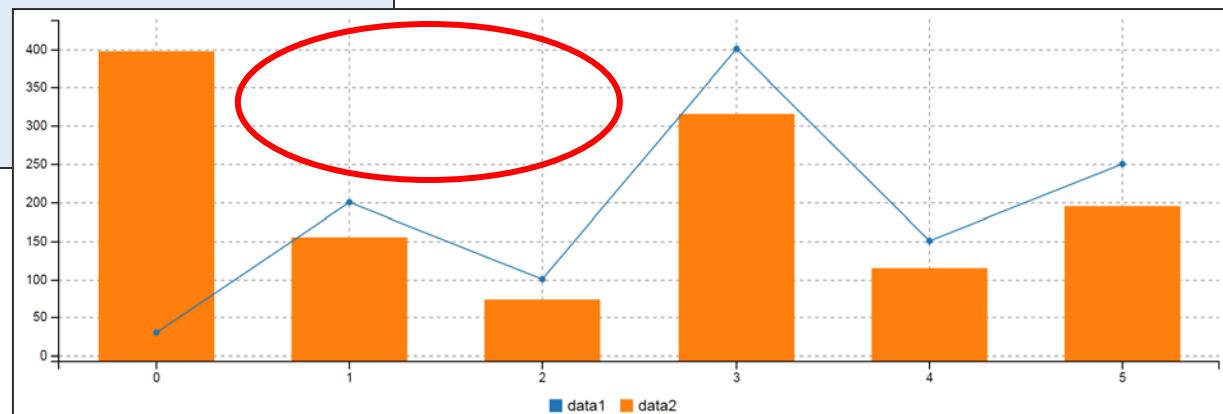
```
var chart = c3.generate({
  bindto: '#chart',
  data: {
    columns: [
      ['data1', 30, 200, 100, 400, 150, 250],
      ['data2', 50, 20, 10, 40, 15, 25]
    ],
    axes: {
      data2: 'y2'
    },
    types: {
      data2: 'bar'
    }
  },
  axis: {
    y: {
      label: {
        text: 'Y Label',
        position: 'outer-middle'
      }
    },
    y2: {
      show: true,
      label: {
        text: 'Y2 Label',
        position: 'outer-middle'
      }
    }
  }
});
```

Link: <http://c3js.org/gettingstarted.html#customize>

Diagramm anpassen

- > Gitter einfügen:

```
var chart = c3.generate({  
    bindto: '#chart',  
    data: {  
        columns: [  
            ['data1', 30, 200, 100, 400, 150, 250],  
            ['data2', 50, 20, 10, 40, 15, 25]  
        ]  
    },  
    grid: {  
        x: {  
            show: true  
        },  
        y: {  
            show: true  
        }  
    }  
});
```



Link: http://c3js.org/samples/options_gridline.html

Diagramm transformieren

- > Datensets von Linien in Balken transformieren:

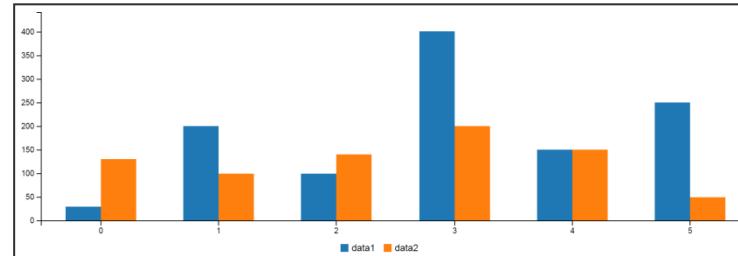
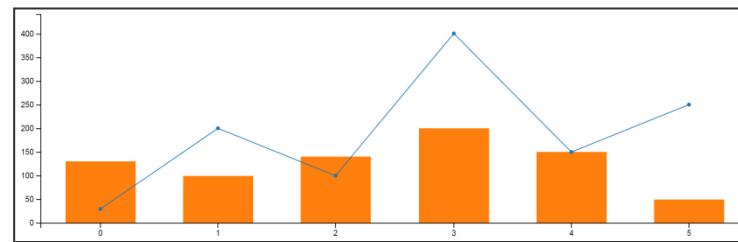
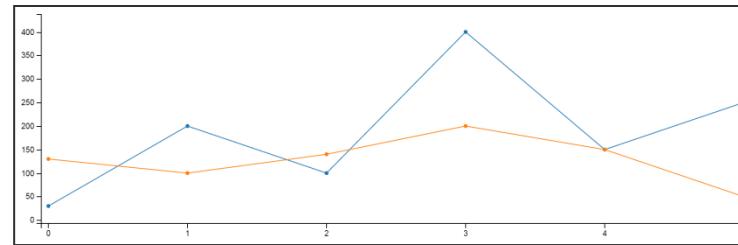
```
var chart = c3.generate({
  data: {
    columns: [
      ['data1', 30, 200, 100, 400, 150, 250],
      ['data2', 130, 100, 140, 200, 150, 50]
    ],
    type: 'bar'
  }
});

setTimeout(function () {
  chart.transform('line', 'data1');
}, 1000);

setTimeout(function () {
  chart.transform('line', 'data2');
}, 2000);

setTimeout(function () {
  chart.transform('bar');
}, 3000);

setTimeout(function () {
  chart.transform('line');
}, 4000);
```



Link: http://c3js.org/samples/transform_line.html

C3.js Application Programming Interface

C3.js | D3-based reusable chart library

tooltip.position
tooltip.contents
Subchart
subchart.show Experimental
subchart.size.height Experimental
subchart.onbrush Experimental
Zoom
zoom.enabled Experimental
zoom.rescale Experimental
zoom.extent Experimental
zoom.onzoom Experimental
zoom.onzoomstart Experimental
zoom.onzoomend Experimental
Point
point.show
point.r
point.focus.expand.enabled
point.focus.expand.r
point.select.r
Line
line.connectNull
line.step_type
Area

zoom.enabled Experimental

Enable zooming.

Default:

false

Format:

```
zoom: {  
  enabled: false  
}
```

Example:

- [Zoom](#)

zoom.rescale Experimental

Enable to rescale after zooming.

If **true** set, y domain will be updated according to the zoomed region.

Default:

false

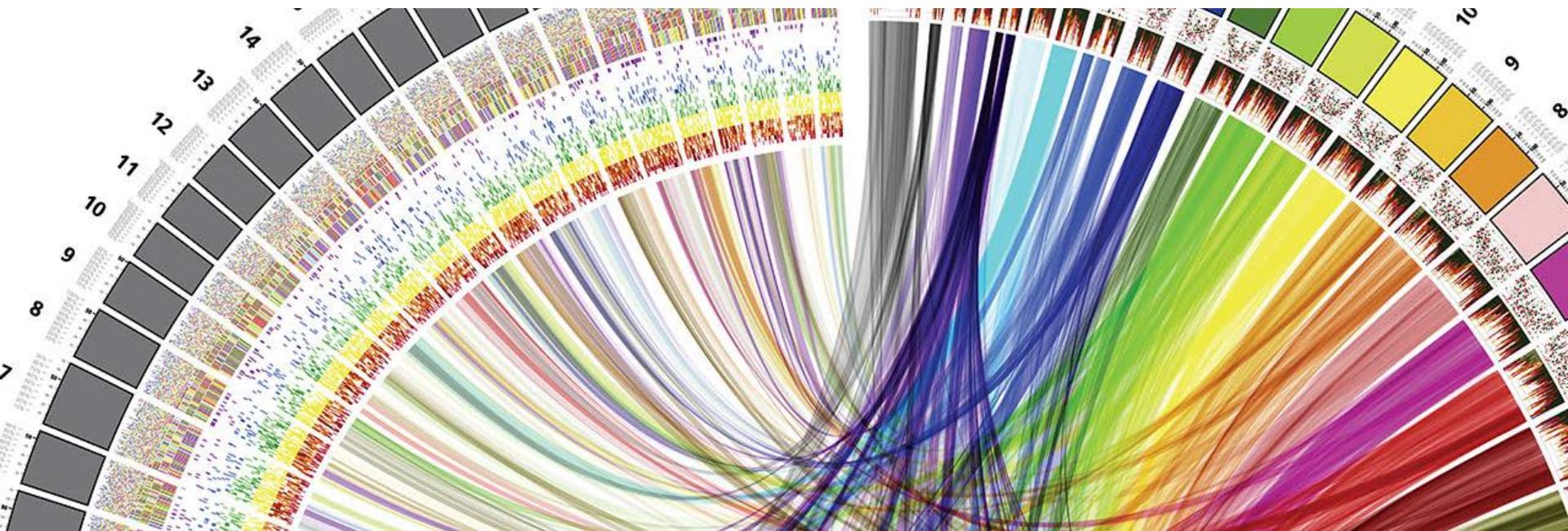
Format:

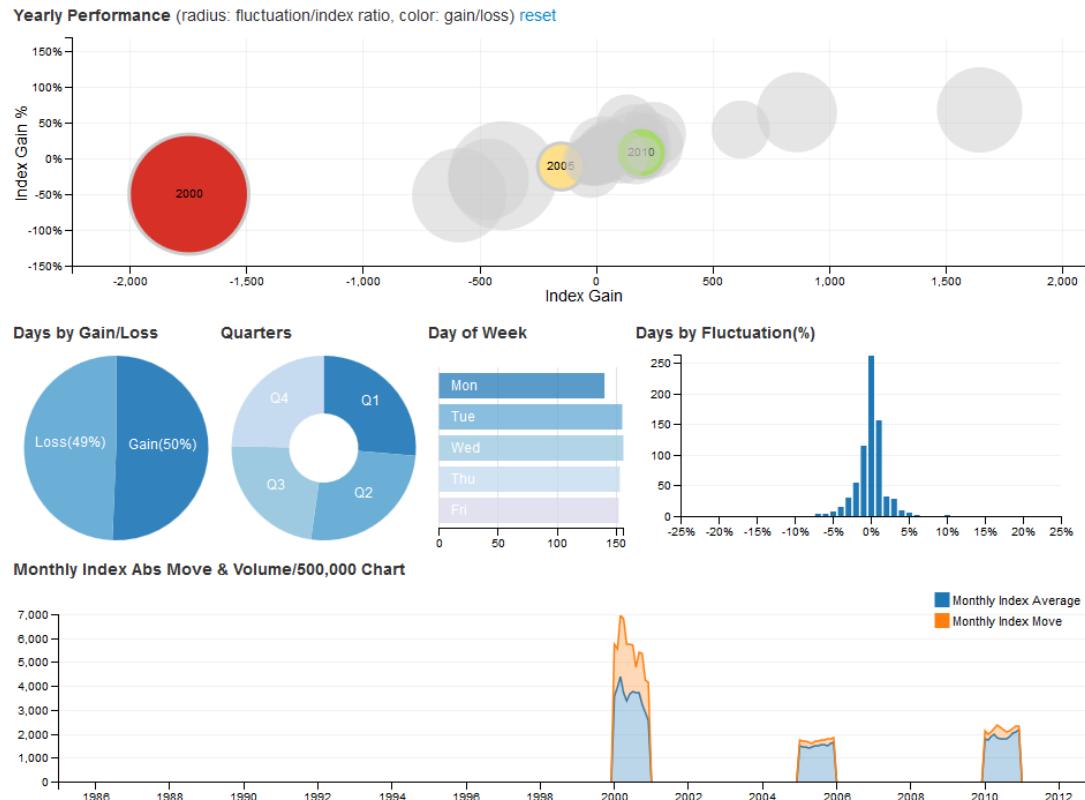
```
zoom: {  
  rescale: true  
}
```

Link: <http://c3js.org/reference.html>

Agenda

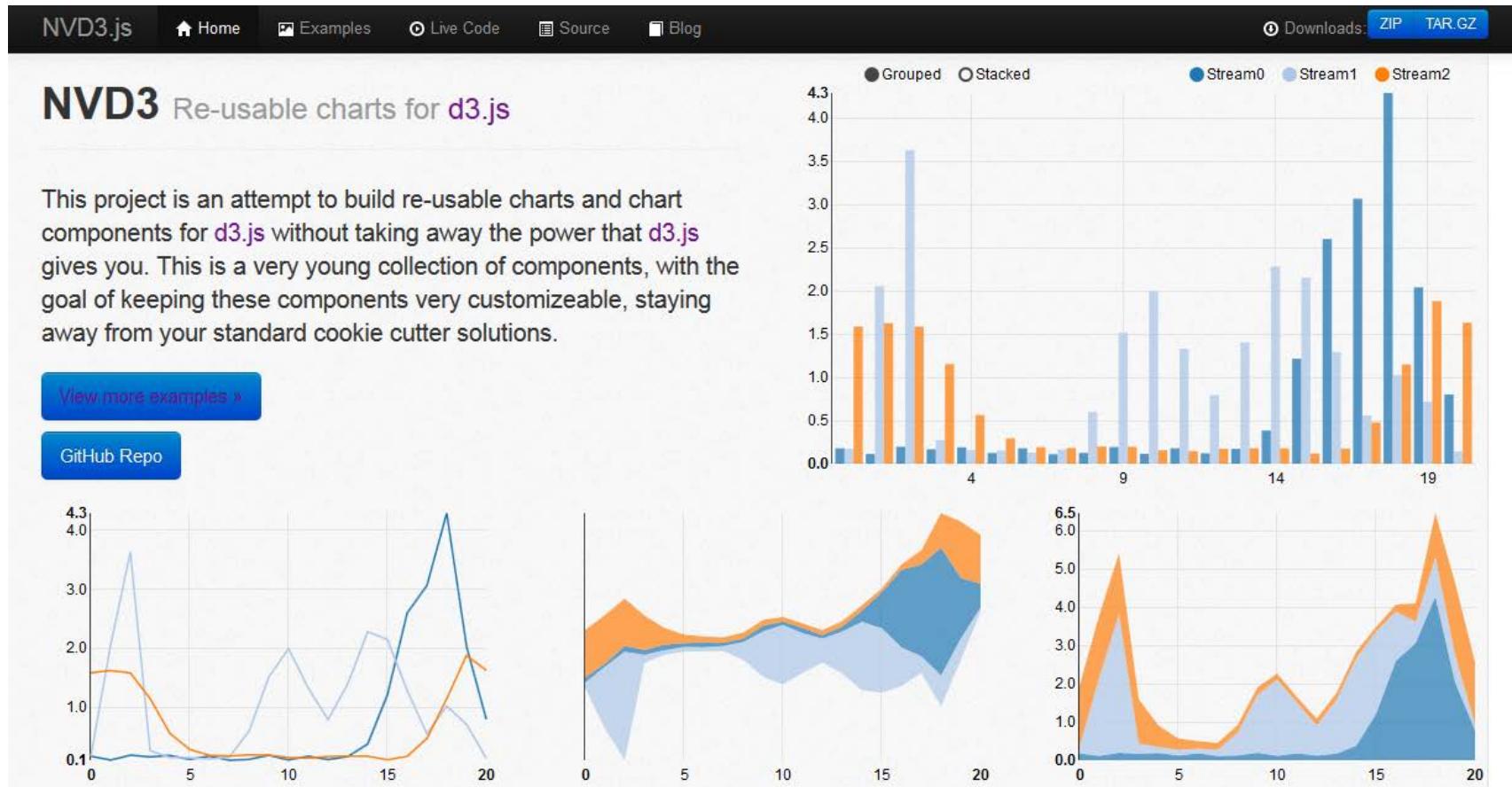
1. Anpassen von bestehenden D3.js Snippets
2. C3.js Einführung
3. Weitere D3.js basierte Bibliotheken



Nasdaq 100 Index 1985/11/01-2012/06/29

Link: <http://dc-js.github.io/dc.js/>

NVD3.js



Link: <http://nvd3.org>

n3-charts



n3-charts

Awesome charts for Angular



Doing something fun with n3-charts ? We'd love to hear about it !

Getting started

Installation

Using npm

You can install **n3-line-chart** by using the `npm` package manager and running following command from the terminal.

```
npm install n3-charts
```

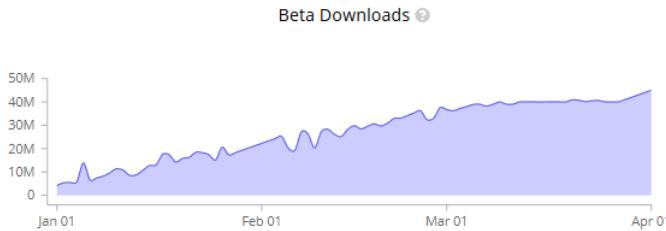
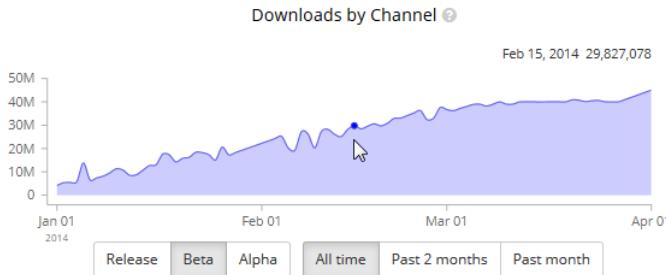
This will also automatically install the proper versions of D3.js and AngularJS to your `node_modules/` directory.

Link: <http://n3-charts.github.io/line-chart/>

MetricsGraphics.js



LINES MULTIPLE LINES DATA AXES ROLLOVERS AUTOMATIC TIME FORMATTING ANNOTATIONS **UPDATING** OTHER EXPERIMENTAL ADDONS



```
var globals = {};

var split_by_params = {
  title: "Downloads by Channel",
  description: "We sometimes have the need to split the data a",
  width: 600,
  height: 200,
  right: 40,
  xax_count: 4,
  target: '#split_by',
  x_accessor: 'date',
  y_accessor: 'release'
};

var modify_time_period_params = {
  title: "Beta Downloads",
  description: "We sometimes have the need to view data for ju",
  width: 600,
  height: 200,
  right: 40,
  show_secondary_x_label: false,
  xax_count: 4,
  target: '#modify_time_period',
  x_accessor: 'date',
  y_accessor: 'beta'
}

d3.json('data/split_by.json', function(data) {
  data = MG.convert.date(data, 'date');
  globals.data = data;
```

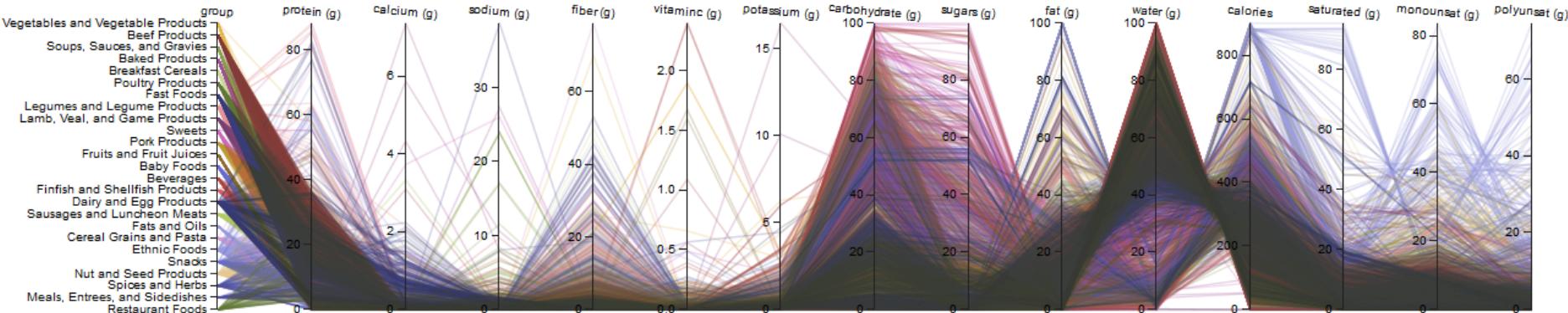
Link: <http://metricsgraphicsjs.org/>

Parallel Coordinates

Progressive Rendering

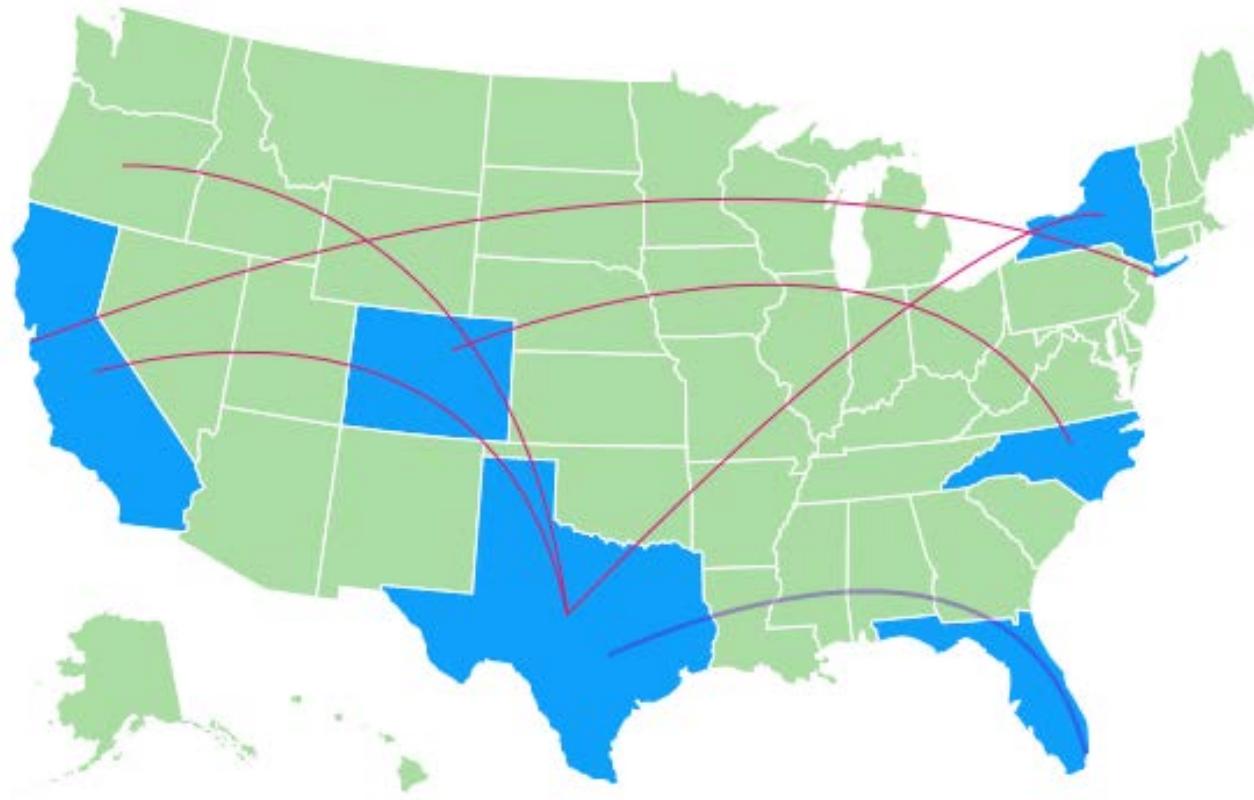
With thousands of data points, the chart will get less responsive when brushing. The interface may stutter or freeze, frustrating the user. To solve this, enable progressive rendering by setting the `render mode` to "queue".

Change the speed of rendering by setting the `rate`. You can read more about this technique on the [Render Queue](#) page.



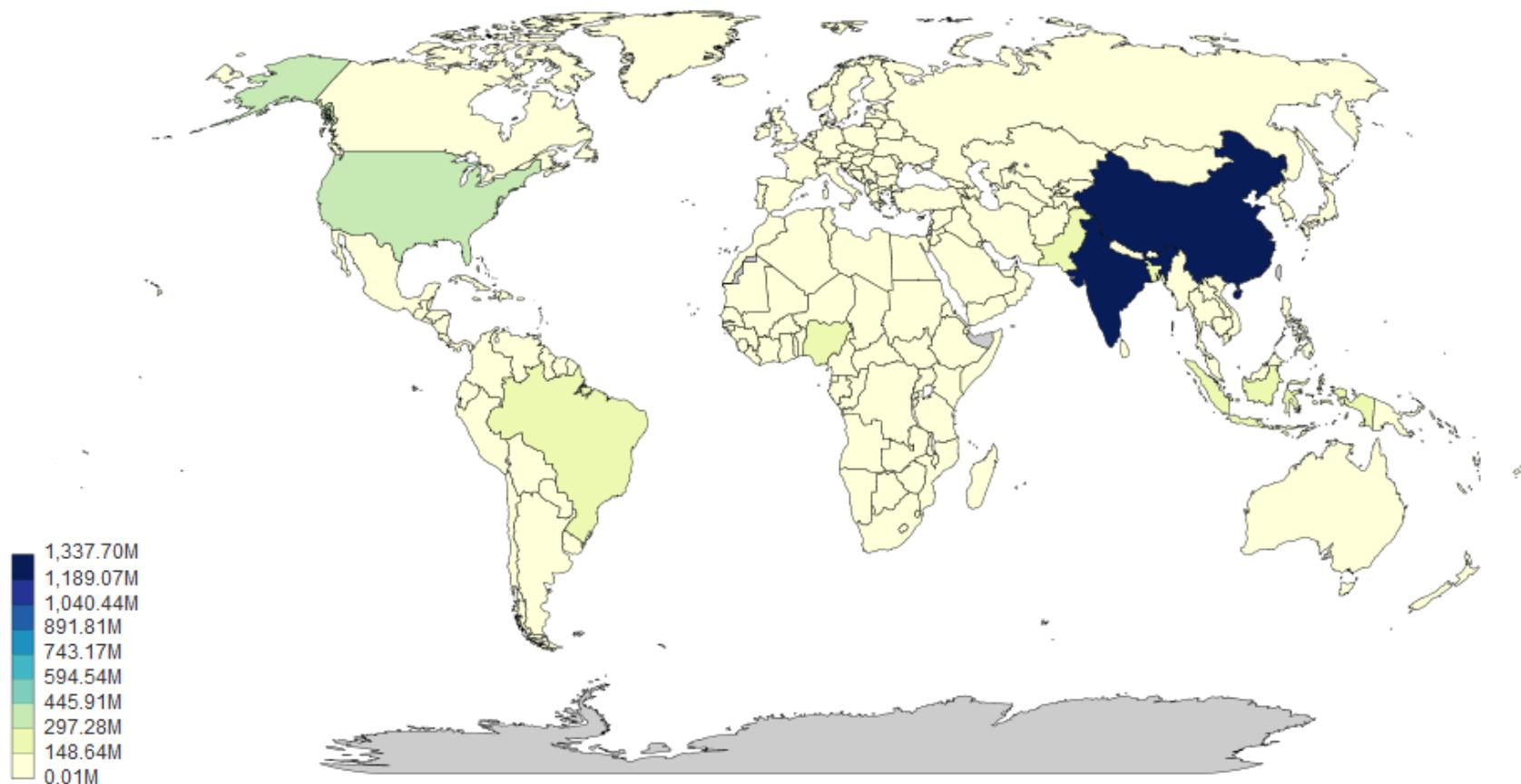
Link: <http://syntagmatic.github.io/parallel-coordinates/#>

DataMaps



Link: <http://datamaps.github.io/>

d3.geomap



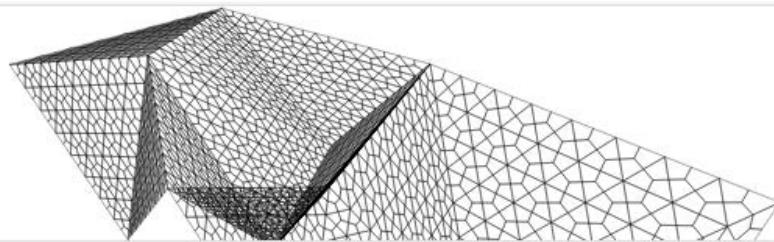
Link: <https://d3-geomap.github.io/>

Weitere D3.js basierte Datenvisualisierungs-Bibliotheken

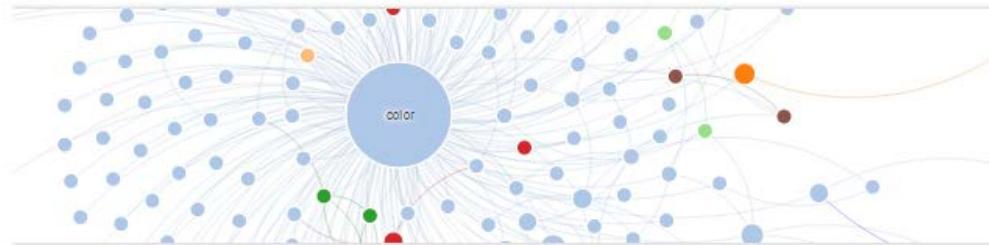
Mike McDearmon

toolkit for visually exploring multidimensional data built on D3.js

POSTS



D3GH is a plugin for the 3D modeling application suite Rhino/Grasshopper created as a "two-dimensional platform for rationalizing and interfacing with building information".



Insights.js is a library based on D3.js for visualizing and navigating graphs. Among others, Insights contains methods for event handling, filtering / focusing nodes, and adding tooltips.

Link: <http://mikemcdearmon.com/portfolio/techposts/charting-libraries-using-d3>