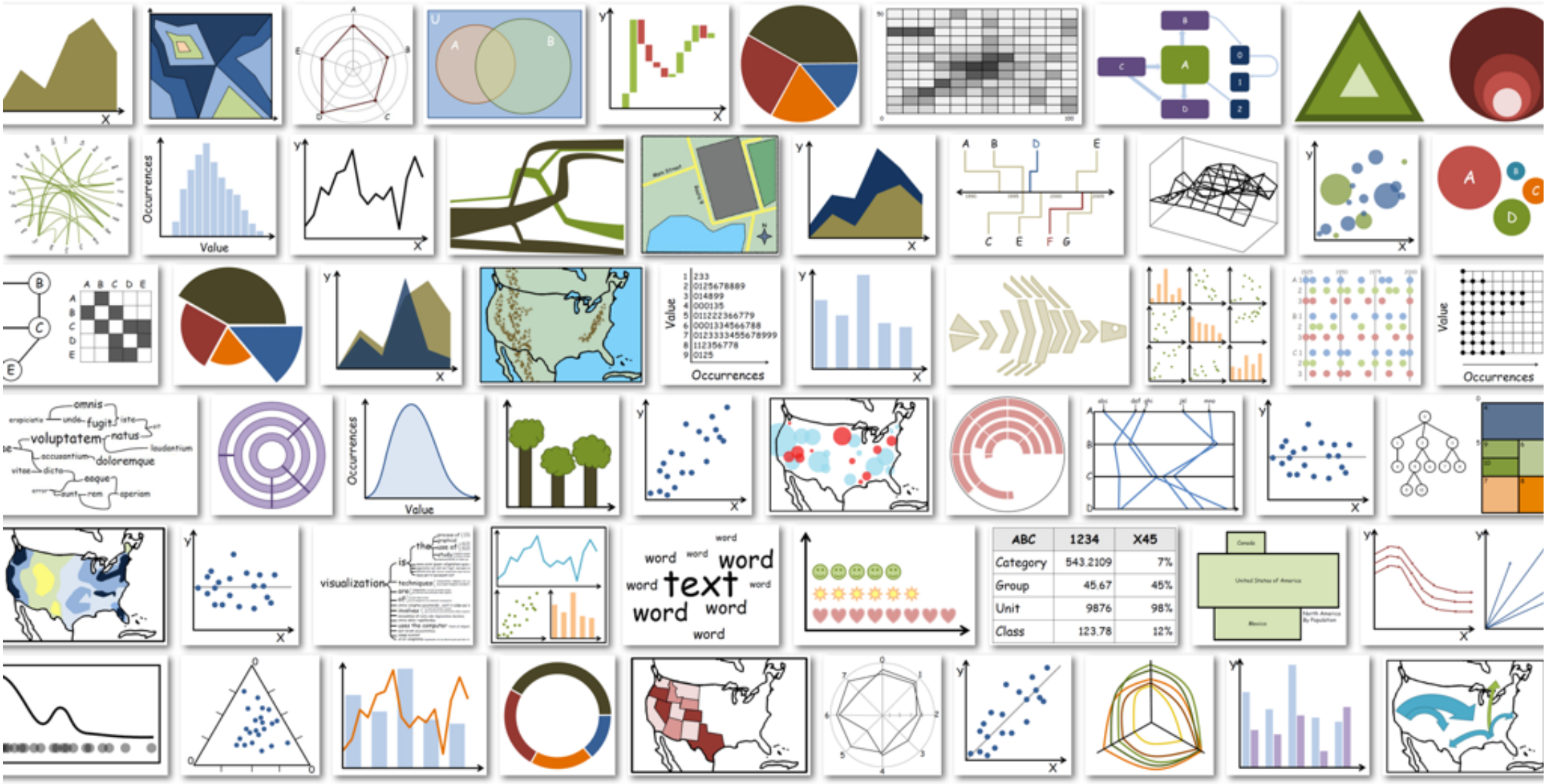
DATEN sind GESCHICHTEN

Einführung in den ODD Workshop „Datenvisualisierung“

21. Februar 2015

Marcel Belledin info@codingcologne.de



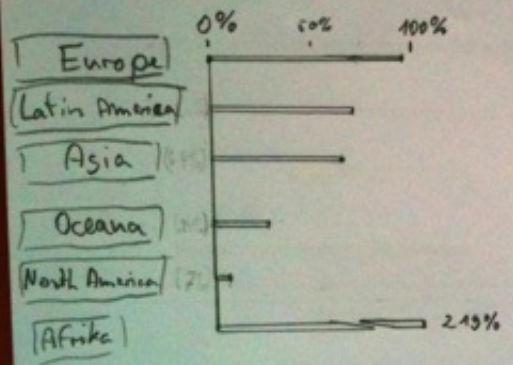
Credit: Image courtesy of Michelle Borkin, Harvard SEAS

Europe wins the race in gender-inequality

on Social Security Rate (100%)

after Afrika

[In Europe the Mean on Security Rate for women and men has a disparacy of x/100%]

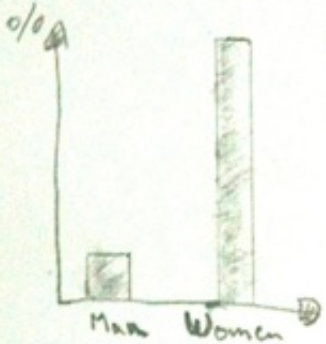


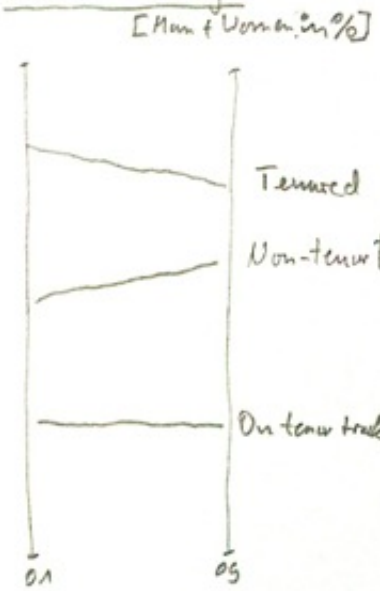
↳ Popup to Overall statistical Relationship

(Chart like in the Stalking-Link)

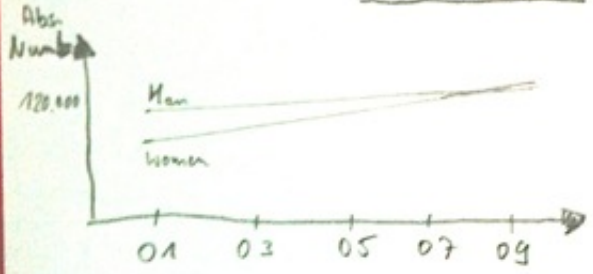
xx Years till Gender Equality in Higher Education Jobs

[Women outpace men in tenure race]





Non-tenure track



Rank of Women by States

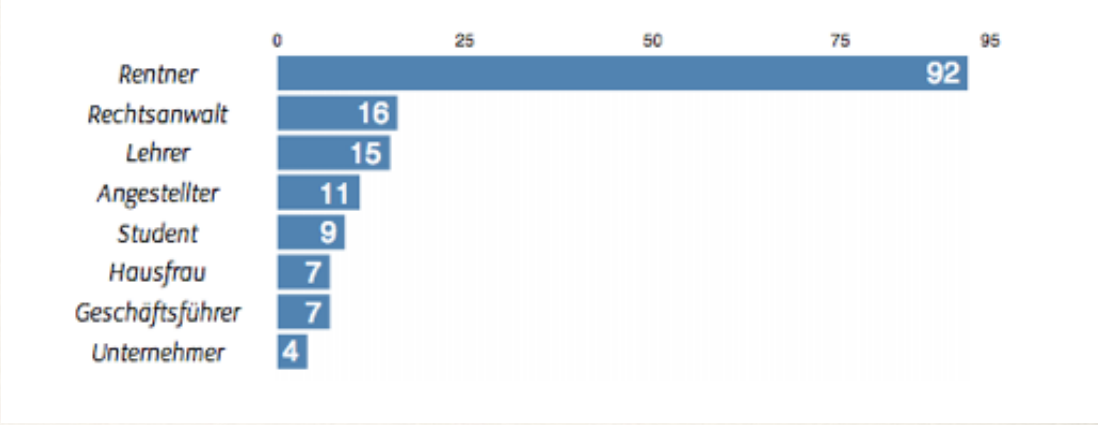
Sort + Filter Popup

State	States	01	03	05	07	09	%
Alabama	Tenured	~	~	~	~	~	~
Alaska	on Track	~	~	~	~	~	~
Arizona	non Tenured	~	~	~	~	~	~
⋮							

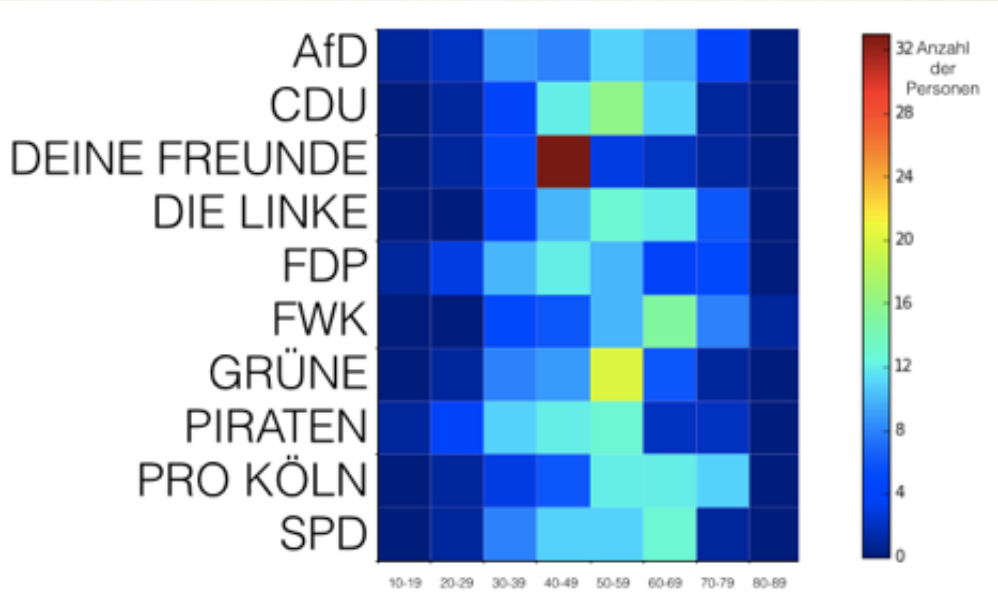
Herangehensweisen

- Mit Daten die eigene Idee untermauern
- Die Geschichte in Daten entdecken

die meist vertretenen Berufe (absolute Zahl) in der Liste der Direktkandidaten



Altersgruppen in den einzelnen Parteien



Beispiel: Strukturdaten Tabelle

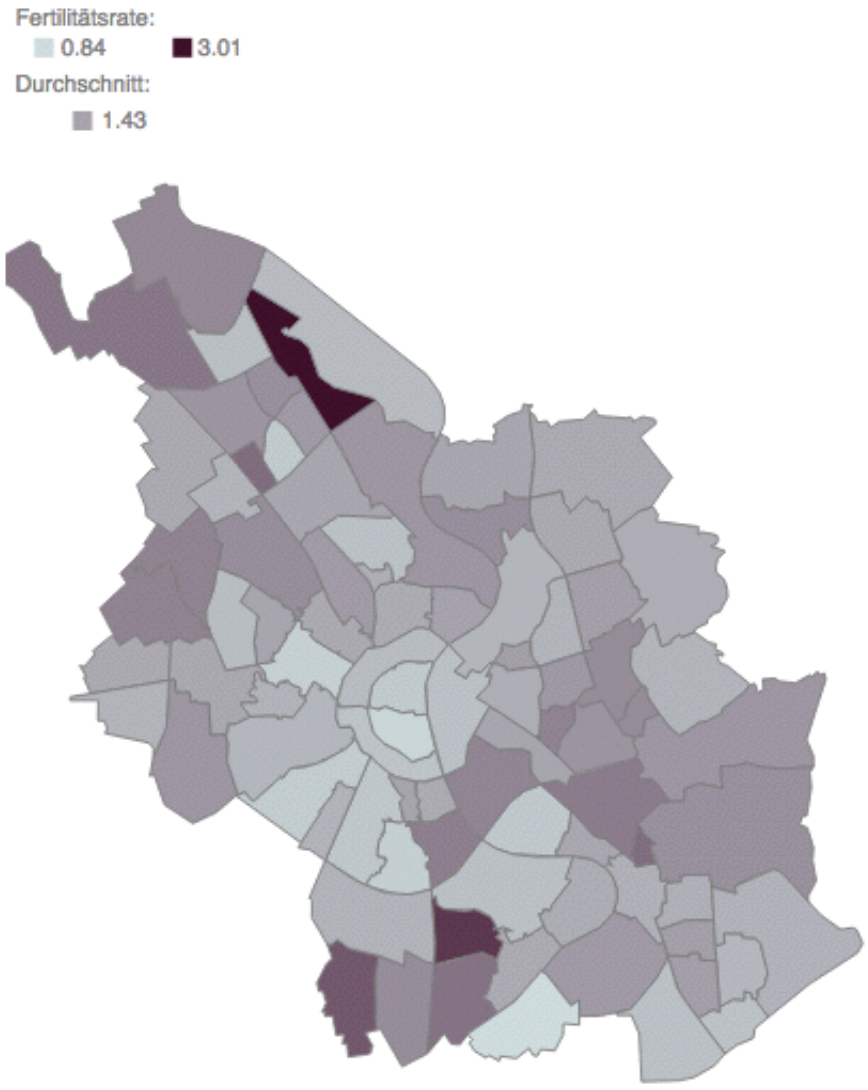
- +/- 50 Spalten
- über 800 Zeilen

StadtbezirkName	StadtteilNr	StadtteilName	X	Y	Einwohner	AnteilAusländer	Wahlberechtigte	AnteilFrauen	18bis24Jahre	25bis34Jahre	35bis44Jahre	45bis59Jahre	Ab6
Innenstadt	101.0	Altstadt/Süd	6.9592331084	50.9314529397	1941.0	18.4	1582.0	46.3	182.0	460.0	267.0	320.0	353
Innenstadt	101.0	Altstadt/Süd	6.9526392818	50.9295655268	1019.0	20.5	736.0	49.9	63.0	179.0	130.0	150.0	214
Innenstadt	101.0	Altstadt/Süd	6.9512159846	50.9289728864	915.0	8.6	758.0	52.1	72.0	194.0	132.0	167.0	193
Innenstadt	101.0	Altstadt/Süd	6.9453220781	50.9292805174	1434.0	14.8	1139.0	50.9	141.0	439.0	220.0	169.0	170
Innenstadt	101.0	Altstadt/Süd	6.9472439779	50.9274863951	874.0	12.4	709.0	53.7	60.0	194.0	127.0	174.0	154
Innenstadt	101.0	Altstadt/Süd	6.9507150621	50.9275173628	910.0	12.6	686.0	47.7	60.0	189.0	142.0	148.0	146
Innenstadt	101.0	Altstadt/Süd	6.9538945867	50.9259016245	1958.0	14.8	1[illegible].0	[illegible].0	125.0	414.0	267.0	294.0	419
Innenstadt	101.0	Altstadt/Süd	6.9[illegible]	50.9[illegible]	[illegible].0	[illegible]	[illegible].0	[illegible].0	[illegible].0	[illegible].0	[illegible].0	206.0	222.0	295
Innenstadt	101.0	Altstadt/Süd	6.9[illegible]	50.9[illegible]	[illegible].0	[illegible]	[illegible].0	[illegible].9	[illegible].0	[illegible].0	[illegible].0	282.0	352.0	301
Innenstadt	101.0	Altstadt/Süd	6.9[illegible]	50.9[illegible]	[illegible].0	[illegible]	[illegible].0	[illegible].5	[illegible].0	[illegible].0	[illegible].0	206.0	260.0	260
Innenstadt	101.0	Altstadt/Süd	6.9[illegible]	50.9[illegible]	[illegible].0	[illegible]	[illegible].0	[illegible].1	[illegible].0	[illegible].0	[illegible].0	282.0	270.0	245
Innenstadt	101.0	Altstadt/Süd	6.9617256909	50.9229042894	1619.0	31.9	920.0	41.3	93.0	222.0	174.0	240.0	191
Innenstadt	101.0	Altstadt/Süd	6.9648732523	50.9238477047	1115.0	27.0	649.0	59.9	47.0	66.0	61.0	133.0	342
Innenstadt	101.0	Altstadt/Süd	6.942511989	50.9325959696	1322.0	16.0	1033.0	51.3	106.0	354.0	177.0	195.0	201
Innenstadt	101.0	Altstadt/Süd	6.9413449274	50.935040602	984.0	19.7	785.0	46.0	75.0	315.0	132.0	126.0	137
Innenstadt	101.0	Altstadt/Süd	6.9452076934	50.9316010149	1184.0	19.8	878.0	52.2	86.0	278.0	140.0	169.0	205
Innenstadt	101.0	Altstadt/Süd	6.9441936943	50.9347992844	1035.0	13.6	855.0	49.7	82.0	261.0	131.0	171.0	210
Innenstadt	101.0	Altstadt/Süd	6.9496595062	50.9316528793	1043.0	11.5	854.0	54.1	105.0	232.0	135.0	191.0	191
Innenstadt	101.0	Altstadt/Süd	6.9496488218	50.9343209688	1113.0	18.1	848.0	52.6	71.0	265.0	153.0	174.0	185
Innenstadt	101.0	Altstadt/Süd	6.9569629262	50.9337016051	2092.0	18.5	1606.0	45.7	202.0	405.0	215.0	317.0	467
Innenstadt	102.0	Neustadt/Süd	6.963986027[illegible]	50.921748853	1027.0	11.6	769.0	49.3	37.0	186.0	163.0	220.0	163
Innenstadt	102.0	Neustadt/Süd	6.9677436609	50.9198020832	1227.0	11.3	919.0	51.3	60.0	177.0	210.0	283.0	189
Innenstadt	102.0	Neustadt/Süd	6.9631554274	50.9201462072	1041.0	10.7	773.0	54.6	44.0	184.0	191.0	198.0	156
Innenstadt	102.0	Neustadt/Süd	6.9613963445	50.9199833877	836.0	15.3	629.0	50.6	44.0	148.0	145.0	175.0	117
Innenstadt	102.0	Neustadt/Süd	6.9635986659	50.9163403835	942.0	13.4	660.0	55.6	65.0	157.0	149.0	180.0	109
Innenstadt	102.0	Neustadt/Süd	6.9670678151	50.9172162147	775.0	6.2	643.0	58.6	48.0	92.0	96.0	151.0	256
Innenstadt	102.0	Neustadt/Süd	6.9625368314	50.9175440777	953.0	12.3	745.0	55.4	60.0	161.0	182.0	181.0	161
Innenstadt	102.0	Neustadt/Süd	6.9628003765	50.9187326374	804.0	8.2	622.0	50.8	43.0	141.0	137.0	197.0	104
Innenstadt	102.0	Neustadt/Süd	6.9591590974	50.9195859651	1236.0	22.8	804.0	49.5	62.0	256.0	158.0	209.0	119
Innenstadt	102.0	Neustadt/Süd	6.9585544605	50.9172455696	1062.0	17.2	792.0	51.6	103.0	254.0	146.0	152.0	137
Innenstadt	102.0	Neustadt/Süd	6.9528552848	50.9179770484	970.0	14.4	748.0	52.0	63.0	186.0	164.0	184.0	151
Innenstadt	102.0	Neustadt/Süd	6.9549642249	50.91923804	1108.0	11.0	821.0	54.6	55.0	216.0	194.0	238.0	118
Innenstadt	102.0	Neustadt/Süd	6.9560324936	50.9202678396	986.0	19.8	687.0	52.5	45.0	171.0	151.0	168.0	152
Innenstadt	102.0	Neustadt/Süd	6.957437537	50.9214147696	991.0	17.2	740.0	53.2	76.0	237.0	159.0	133.0	135
Innenstadt	102.0	Neustadt/Süd	6.9537556105	50.921922349	895.0	15.1	671.0	52.6	68.0	220.0	118.0	159.0	106
Innenstadt	102.0	Neustadt/Süd	6.9528662908	50.9208027479	987.0	9.7	774.0	53.1	36.0	167.0	178.0	192.0	201
Innenstadt	102.0	Neustadt/Süd	6.9473489457	50.9220732244	1350.0	18.2	955.0	52.6	66.0	231.0	190.0	222.0	246
Innenstadt	102.0	Neustadt/Süd	6.9519988677	50.922815287	999.0	13.4	752.0	50.8	80.0	171.0	153.0	177.0	171
Innenstadt	102.0	Neustadt/Süd	6.9436574498	50.9267721053	1178.0	14.9	900.0	48.3	108.0	314.0	181.0	149.0	148
Innenstadt	102.0	Neustadt/Süd	6.9454161515	50.9256707219	1132.0	16.3	847.0	54.1	96.0	334.0	131.0	154.0	132
Innenstadt	102.0	Neustadt/Süd	6.9383728594	50.9247230931	1164.0	16.2	844.0	50.9	140.0	316.0	110.0	168.0	110
Innenstadt	102.0	Neustadt/Süd	6.9406693851	50.9248816902	1564.0	19.3	1139.0	50.2	202.0	411.0	180.0	185.0	161
Innenstadt	102.0	Neustadt/Süd	6.9413772597	50.9278426432	1161.0	15.2	928.0	51.1	162.0	345.0	150.0	131.0	140
Innenstadt	102.0	Neustadt/Süd	6.9386211726	50.9282353956	1100.0	22.6	826.0	49.4	130.0	406.0	119.0	97.0	74.0
Innenstadt	102.0	Neustadt/Süd	6.93468765	50.9287757222	1121.0	17.2	855.0	47.0	183.0	369.0	132.0	97.0	74.0
Innenstadt	102.0	Neustadt/Süd	6.9346664019	50.9305037109	1105.0	12.5	869.0	48.9	98.0	305.0	201.0	176.0	89.0
Innenstadt	102.0	Neustadt/Süd	6.9362299396	50.9308668979	1055.0	15.0	793.0	48.7	92.0	266.0	190.0	157.0	88.0
Innenstadt	102.0	Neustadt/Süd	6.9381348178	50.9293974076	893.0	19.6	666.0	49.2	127.0	316.0	92.0	72.0	59.0
Innenstadt	102.0	Neustadt/Süd	6.9373519978	50.9319503716	1171.0	16.9	882.0	48.0	104.0	335.0	171.0	147.0	125
Innenstadt	102.0	Neustadt/Süd	6.9400767171	50.9311585966	1164.0	21.7	880.0	48.4	141.0	369.0	136.0	127.0	107
Innenstadt	102.0	Neustadt/Süd	6.93783101	50.9335372546	1089.0	11.2	882.0	44.4	61.0	257.0	238.0	176.0	150
Innenstadt	102.0	Neustadt/Süd	6.9345009814	50.9332317069	1132.0	16.6	851.0	52.6	84.0	348.0	195.0	137.0	87.0
Innenstadt	102.0	Neustadt/Süd	6.9323276651	50.9340727697	1304.0	16.6	1010.0	46.8	186.0	404.0	182.0	152.0	86.0
Innenstadt	102.0	Neustadt/Süd	6.9348322746	50.9349794117	1441.0	13.7	1097.0	48.1	80.0	369.0	264.0	229.0	165
Innenstadt	102.0	Neustadt/Süd	6.9299264291	50.934651993	1453.0	19.6	1042.0	47.5	127.0	370.0	183.0	224.0	138
Innenstadt	103.0	Altstadt/Nord	6.9417916065	50.9385107232	1470.0	19.9	1102.0	44.6	114.0	378.0	233.0	228.0	149
Innenstadt	103.0	Altstadt/Nord	6.9491088482	50.9381583691	1175.0	15.9	914.0	49.6	58.0	238.0	164.0	173.0	281
Innenstadt	103.0	Altstadt/Nord	6.9458214142	50.9398407091	1040.0	18.0	778.0	45.6	48.0	181.0	157.0	158.0	234
Innenstadt	103.0	Altstadt/Nord	6.9579189244	50.9382568834	1114.0	24.1	772.0	47.4	75.0	210.0	93.0	159.0	235
Innenstadt	103.0	Altstadt/Nord	6.9614696799	50.9382266091	1031.0	26.0	722.0	47.0	87.0	199.0	85.0	139.0	212
Innenstadt	103.0	Altstadt/Nord	6.9608271784	50.9471072593	1143.0	29.5	683.0	50.5	85.0	184.0	136.0	140.0	138
Innenstadt	103.0	Altstadt/Nord	6.9603553454	50.9441896567	788.0	21.8	543.0	46.6	49.0	123.0	106.0	135.0	130
Innenstadt	103.0	Altstadt/Nord	6.959669098	50.9490217345	1150.0	21.8	793.0	49.2	63.0	247.0	170.0	193.0	120
Innenstadt	103.0	Altstadt/Nord	6.9640716524	50.948461144	1062.0	16.3	814.0	59.2	48.0	136.0	134.0	147.0	349
Innenstadt	103.0	Altstadt/Nord	6.955651512	50.9480705954	2089.0	33.2	1242.0	47.1	145.0	392.0	275.0	286.0	144
Innenstadt	103.0	Altstadt/Nord	6.9500609392	50.9467471143	1050.0	26.1	718.0	45.1	88.0	222.0	137.0	153.0	118
Innenstadt	103.0	Altstadt/Nord	6.9535420531	50.9459423549	1202.0	20.7	860.0	50.9	85.0	285.0	151.0	164.0	175
Innenstadt	103.0	Altstadt/Nord	6.9518576791	50.9430790927	1875.0	18.6	1401.0	52.4	102.0	294.0	226.0	282.0	497
Innenstadt	103.0	Altstadt/Nord	6.9439150201	50.9429259935	1733.0	19.2	1328.0	45.3	122.0	444.0	270.0	250.0	242
Innenstadt	104.0	Neustadt/Nord	6.9383278311	50.9385850441	1172.0	18.7	859.0	45.4	53.0	262.0	178.0	171.0	195
Innenstadt	104.0	Neustadt/Nord	6.936102896	50.9394509213	953.0	15.7	706.0	48.3	59.0	203.0	165.0	169.0	110
Innenstadt	104.0	Neustadt/Nord	6.9348278652	50.9384901607	865.0	13.6	647.0	50.4	38.0	169.0	158.0	134.0	148
Innenstadt	104.0	Neustadt/Nord	6.9349777912	50.9373908728	992.0	14.5	768.0	49.9	47.0	192.0	139.0	193.0	197
Innenstadt	104.0	Neustadt/Nord	6.9298282462	50.9409650882	1138.0	18.2	836.0	48.9	71.0	276.0	171.0	168.0	150
Innenstadt	104.0	Neustadt/Nord	6.9321673072	50.9383634192	856.0	12.6	674.0	50.7	76.0	200.0	133.0	143.0	122
Innenstadt	104.0	Neustadt/Nord	6.9384346424	50.9419958569	1162.0	18.2	842.0	51.3	64.0	275.0	169.0	177.0	157
Innenstadt	104.0	Neustadt/Nord	6.936366742	50.9406092671	986.0	14.6	761.0	49.7	46.0	222.0	212.0	194.0	87.0
Innenstadt	104.0	Neustadt/Nord	6.9349513618	50.9457554675	1178.0	19.9	799.0	49.3	69.0	239.0	171.0	179.0	141

Beispiel: Strukturdaten Tabelle

- +/- 50 Spalten
- über 800 Zeilen

Beispiel: Strukturdaten Tabelle



Klicks vs. Code

…um an das Ziel zu gelangen.

Klicks

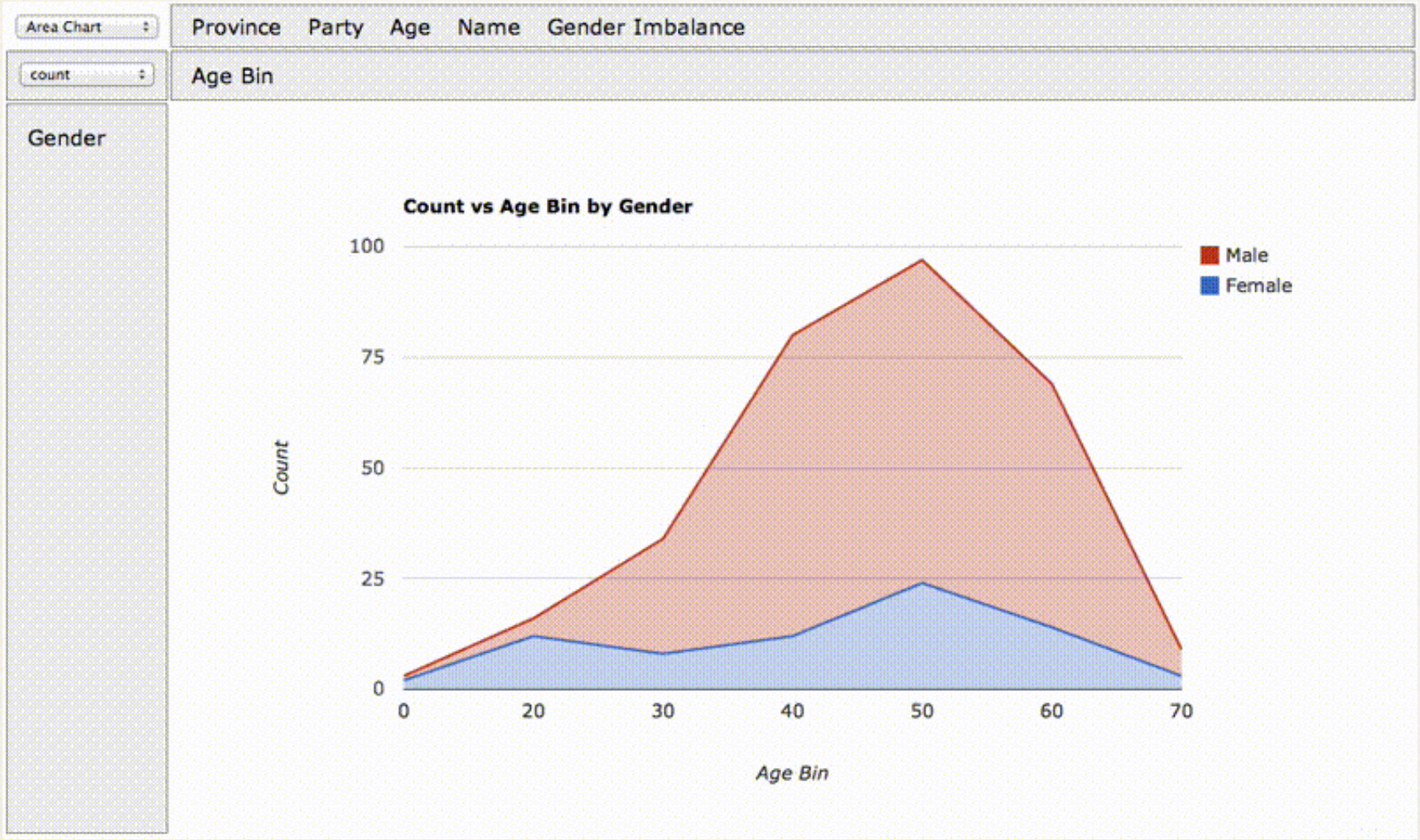
- Einfach zu merken
- UI nimmt dich an die Hand
- genügt oft nicht individuellen Anforderungen
- nicht erweiterbar
- …

Code

- Verlauf nachvollziehbar
- meist offen für individuelle Anforderungen
- Methoden nicht in einem Menü sondern Doku
- Logik/Sprache oft zu Komplex
- …

Klick Tools:

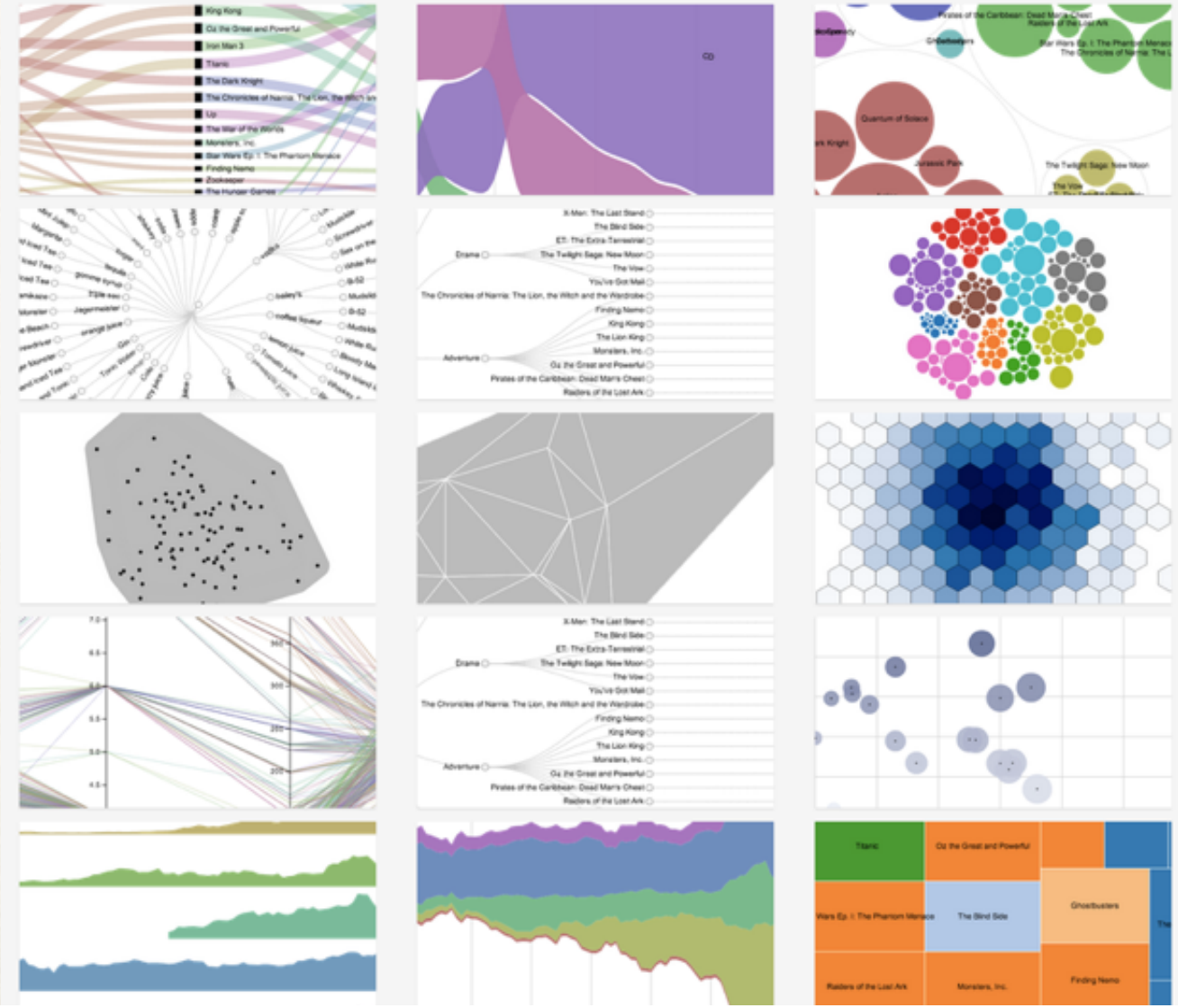
PivotTable.js



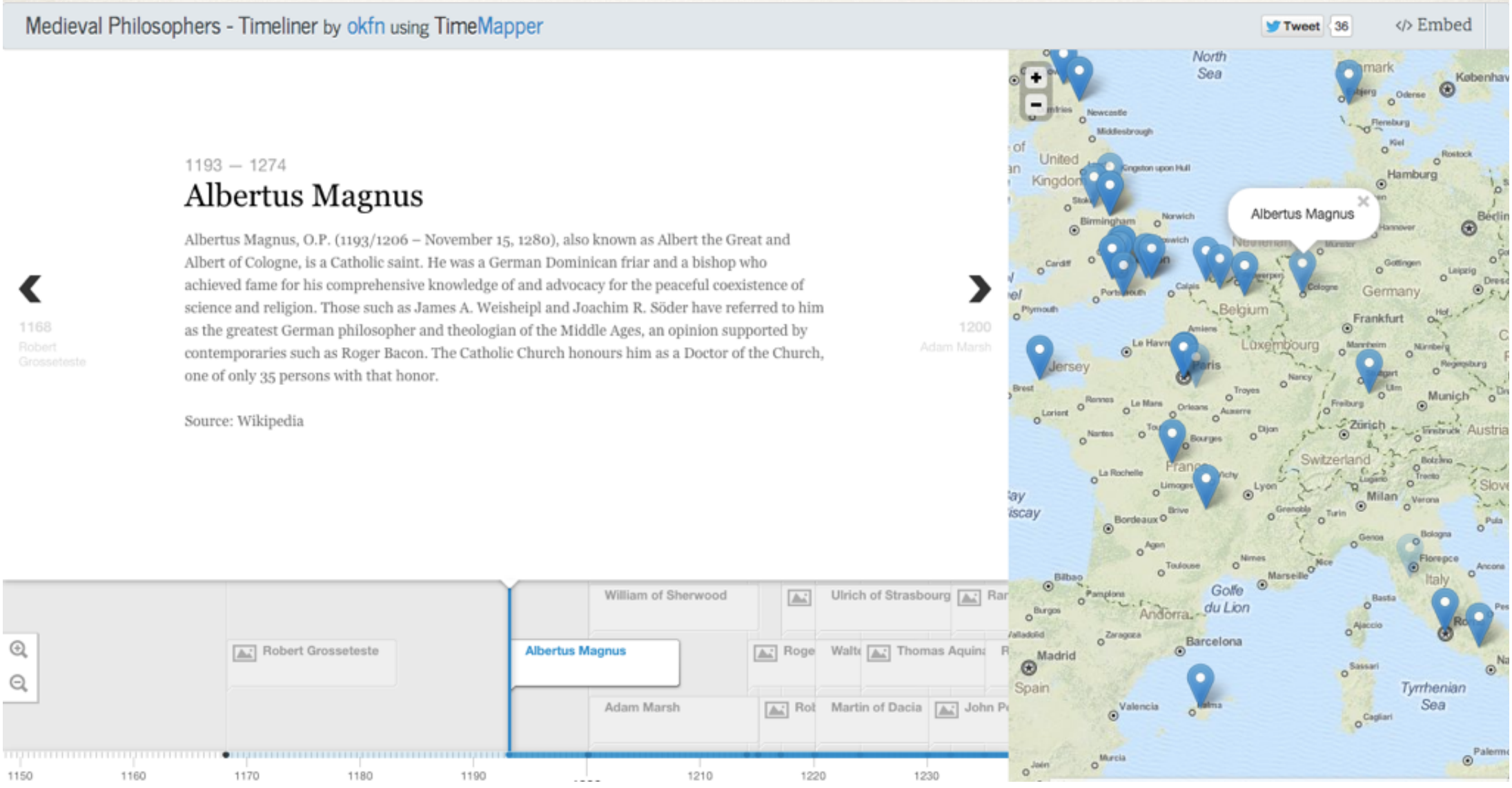
http://nicolas.kruchten.com/pivottable/examples/index.html

Klick Tools:

app.raw.densitydesign.org

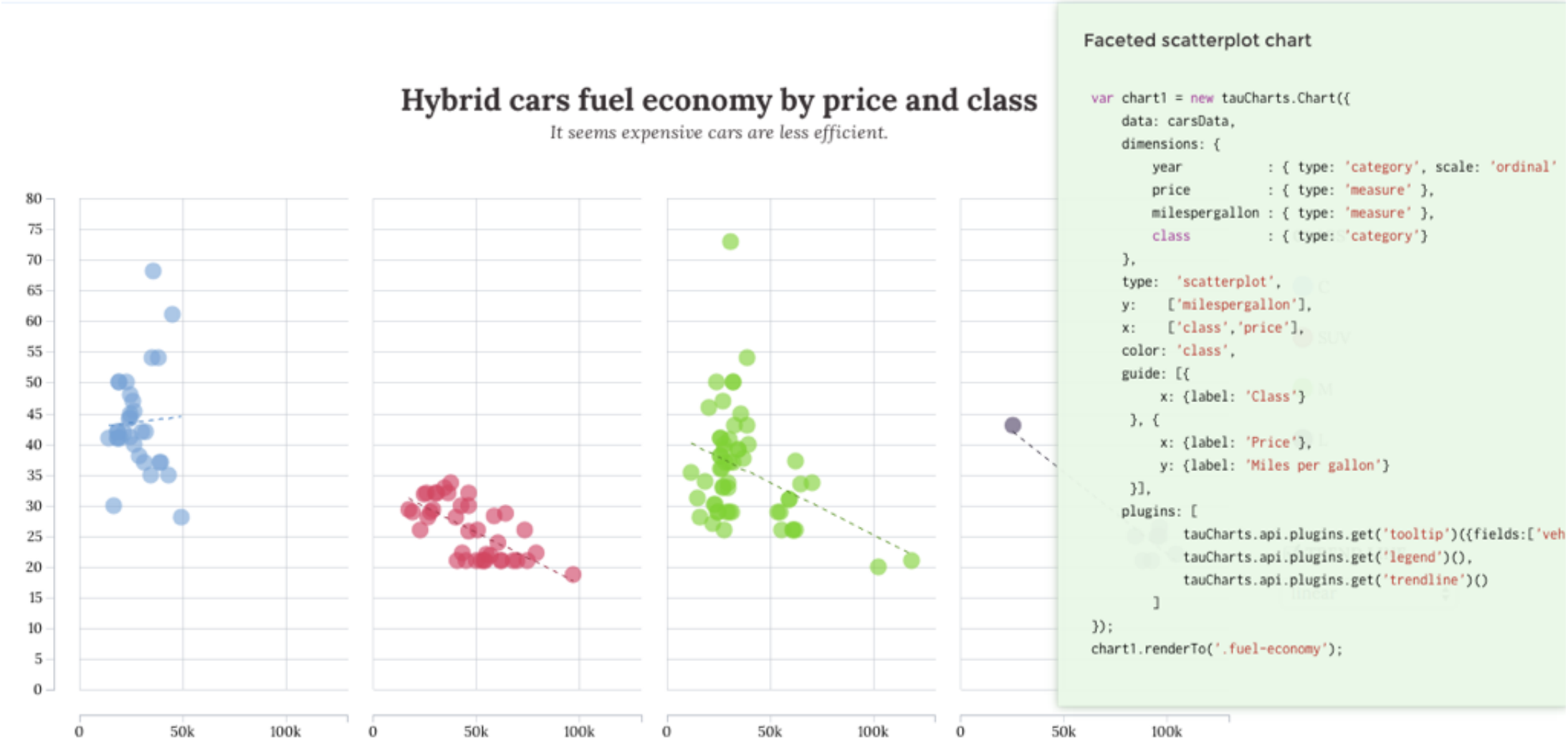


Klick Tools:
timemapper.okfnlabs.org



Coding Tools:

www.taucharts.com



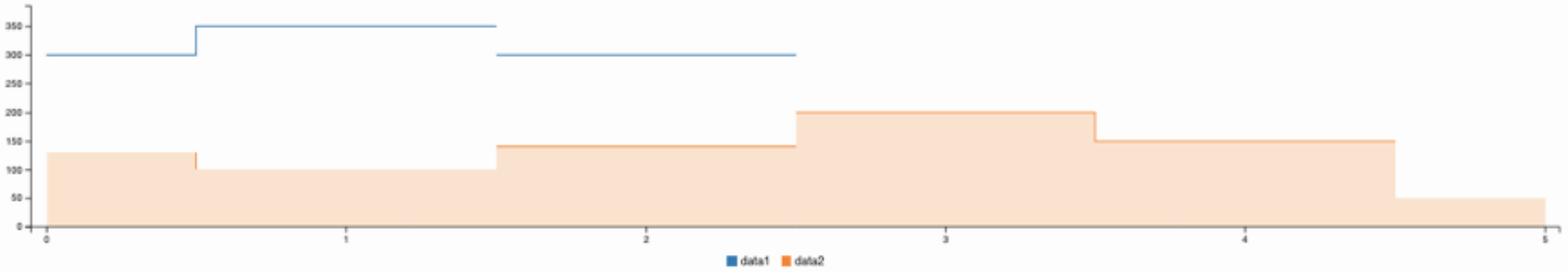
Faceted scatterplot chart

```
var chart1 = new tauCharts.Chart({
    data: carsData,
    dimensions: {
        year           : { type: 'category', scale: 'ordinal'
        price          : { type: 'measure' },
        milespergallon : { type: 'measure' },
        class          : { type: 'category'}
    },
    type:  'scatterplot',
    y:    ['milespergallon'],
    x:    ['class','price'],
    color: 'class',
    guide: [{
         x: {label: 'Class'}
     }, {
         x: {label: 'Price'},
         y: {label: 'Miles per gallon'}
     }],
    plugins: [
            tauCharts.api.plugins.get('tooltip')({fields:['veh
            tauCharts.api.plugins.get('legend')(),
            tauCharts.api.plugins.get('trendline')()
        ]
});
chart1.renderTo('.fuel-economy');
```

Coding Tools:

www.c3js.org

Step Chart



chart_step.js

```
var chart = c3.generate({
    data: {
        columns: [
            ['data1', 300, 350, 300, 0, 0, 100],
            ['data2', 130, 100, 140, 200, 150, 50]
        ],
        types: {
            data1: 'step',
            data2: 'area-step'
        }
    }
});
```

Die Projekte der anderen:

http://odd15.hackdash.org/

Leaflet Karten Beispiele und c3.js:

---

github.com/marcel12bell/simple_leaflet_examples

oder : bit.ly/1BvLqFs

Editoren:

- www.sublimetext.com
- www.github.com/atom
- www.brackets.io (adobe)

Noch Fragen?

@MarcelBelledin

DEMO