□□□

??????????????????????, ??

- ?????
- ?????
- ?????
- ?????
- ?????

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```
[{
  year: '1991',
  value: 15468
}, {
  year: '1992',
  value: 16100
}, {
  year: '1993',
  value: 15900
}, {
  year: '1994',
  value: 17409
}, {
  year: '1995',
  value: 17000
}, {
  year: '1996',
  value: 31056
}, {
  year: '1997',
  value: 31982
```

```
}, {
  year: '1998',
  value: 32040
}, {
  year: '1999',
  value: 33233
}]
```

- □□

```
40,40, 60, 60
```

- □□□ Scale

year ??? ? X? ?

??	???
??	year
??	linear
????	1
??????	??

value ??? ? Y? ?

??	???
??	value
??	linear
??????	??
???	10000
???	35000

?????	function formatter(val) {
	  return (val / 10000).toFixed(1) + 'k';
	}

- ? Geom

???? area ?

??	???
??	year*value
??	???

??? Line ?

??	???
??	year*value
??	??

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???

??
??????????????????????????????????

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- □□□

```
[{
  country: 'Asia',
  year: '1750',
  value: 502
}, {
  country: 'Asia',
  year: '1800',
  value: 635
}, {
  country: 'Asia',
  year: '1850',
  value: 809
}, {
  country: 'Asia',
  year: '1900',
  value: 5268
}, {
  country: 'Asia',
  year: '1950',
```

```
  value: 4400
}, {
  country: 'Asia',
  year: '1999',
  value: 3634
}, {
  country: 'Asia',
  year: '2050',
  value: 947
}, {
  country: 'Africa',
  year: '1750',
  value: 106
}, {
  country: 'Africa',
  year: '1800',
  value: 107
}, {
  country: 'Africa',
  year: '1850',
  value: 111
}, {
  country: 'Africa',
  year: '1900',
  value: 1766
}, {
  country: 'Africa',
  year: '1950',
  value: 221
}, {
  country: 'Africa',
  year: '1999',
  value: 767
}, {
  country: 'Africa',
  year: '2050',
  value: 133
}, {
  country: 'Europe',
  year: '1750',
```

```
  value: 163
}, {
  country: 'Europe',
  year: '1800',
  value: 203
}, {
  country: 'Europe',
  year: '1850',
  value: 276
}, {
  country: 'Europe',
  year: '1900',
  value: 628
}, {
  country: 'Europe',
  year: '1950',
  value: 547
}, {
  country: 'Europe',
  year: '1999',
  value: 729
}, {
  country: 'Europe',
  year: '2050',
  value: 408
}, {
  country: 'Oceania',
  year: '1750',
  value: 200
}, {
  country: 'Oceania',
  year: '1800',
  value: 200
}, {
  country: 'Oceania',
  year: '1850',
  value: 200
}, {
  country: 'Oceania',
  year: '1900',
```

```
  value: 460
}, {
  country: 'Oceania',
  year: '1950',
  value: 230
}, {
  country: 'Oceania',
  year: '1999',
  value: 300
}, {
  country: 'Oceania',
  year: '2050',
  value: 300
}]
```

- □□

```
40,40, 80, 60
```

- □□□ Scale

year ??? ? X? ?

??	???
??	year
??	linear
????	50
??????	??

- ? Geom

???? area ?

??	???

??	year*value
??	???
????	country
????	?? | stack

??? Line ?

??	???
??	year*value
??	??
????	country
??	2
????	?? | stack

- ## ?? Legend

??	???
??	??
??	country
??	?
??	??

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- □□□


```
[{
  time: 1246406400000,
  constest: 21.5,
  temperature: [14.3, 27.7]
}, {
  time: 1246492800000,
  constest: 22.1,
  temperature: [14.5, 27.8]
}, {
  time: 1246579200000,
  constest: 23,
  temperature: [15.5, 29.6]
}, {
  time: 1246665600000,
  constest: 23.8,
  temperature: [16.7, 30.7]
}, {
  time: 1246752000000,
  constest: 21.4,
  temperature: [16.5, 25.0]
}, {
  time: 1246838400000,
  constest: 21.3,
```

```
  temperature: [17.8, 25.7]
}, {
  time: 1246924800000,
  constest: 18.3,
  temperature: [13.5, 24.8]
}, {
  time: 1247011200000,
  constest: 15.4,
  temperature: [10.5, 21.4]
}, {
  time: 1247097600000,
  constest: 16.4,
  temperature: [9.2, 23.8]
}, {
  time: 1247184000000,
  constest: 17.7,
  temperature: [11.6, 21.8]
}, {
  time: 1247270400000,
  constest: 17.5,
  temperature: [10.7, 23.7]
}, {
  time: 1247356800000,
  constest: 17.6,
  temperature: [11.0, 23.3]
}, {
  time: 1247443200000,
  constest: 17.7,
  temperature: [11.6, 23.7]
}, {
  time: 1247529600000,
  constest: 16.8,
  temperature: [11.8, 20.7]
}, {
  time: 1247616000000,
  constest: 17.7,
  temperature: [12.6, 22.4]
}, {
  time: 1247702400000,
  constest: 16.3,
```

```
  temperature: [13.6, 19.6]
}, {
  time: 1247788800000,
  constest: 17.8,
  temperature: [11.4, 22.6]
}, {
  time: 1247875200000,
  constest: 18.1,
  temperature: [13.2, 25.0]
}, {
  time: 1247961600000,
  constest: 17.2,
  temperature: [14.2, 21.6]
}, {
  time: 1248048000000,
  constest: 14.4,
  temperature: [13.1, 17.1]
}, {
  time: 1248134400000,
  constest: 13.7,
  temperature: [12.2, 15.5]
}, {
  time: 1248220800000,
  constest: 15.7,
  temperature: [12.0, 20.8]
}, {
  time: 1248307200000,
  constest: 14.6,
  temperature: [12.0, 17.1]
}, {
  time: 1248393600000,
  constest: 15.3,
  temperature: [12.7, 18.3]
}, {
  time: 1248480000000,
  constest: 15.3,
  temperature: [12.4, 19.4]
}, {
  time: 1248566400000,
  constest: 15.8,
```

```
  temperature: [12.6, 19.9]
}, {
  time: 1248652800000,
  constest: 15.2,
  temperature: [11.9, 20.2]
}, {
  time: 1248739200000,
  constest: 14.8,
  temperature: [11.0, 19.3]
}, {
  time: 1248825600000,
  constest: 14.4,
  temperature: [10.8, 17.8]
}, {
  time: 1248912000000,
  constest: 15,
  temperature: [11.8, 18.5]
}, {
  time: 1248998400000,
  constest: 13.6,
  temperature: [10.8, 16.1]
}]
```


- ??

```
40,40, 60, 60
```

- ??? Scale

time?X?

??	???
??	time
??	time
??????	??
????	MM-DD

constest?Y? ?

??	???
??	constest
??	linear
??????	??
???	5
???	35

temperature? Y? ?

??	???
??	temperature
??	linear
??????	??
???	5
???	35

- ## ??? Axis

constest? Y? ?

??	???
??	constest
??	??

- ## ? Geom

???? area ?

??	???
??	time*temperature
??	???

??? Line ?

??	???
??	time*constest
??	??
??	2

??? point ?

??	???
??	time*constest
??	??
??	circle
?? - ??	#ffffff
?? - ??	1

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- □□□


```
[{
  time: 1246406400000,
  constest: 21.5,
  temperature: [14.3, 27.7]
}, {
  time: 1246492800000,
  constest: 22.1,
  temperature: [14.5, 27.8]
}, {
  time: 1246579200000,
  constest: 23,
  temperature: [15.5, 29.6]
}, {
  time: 1246665600000,
  constest: 23.8,
  temperature: [16.7, 30.7]
}, {
  time: 1246752000000,
  constest: 21.4,
  temperature: [16.5, 25.0]
}, {
  time: 1246838400000,
  constest: 21.3,
```

```
  temperature: [17.8, 25.7]
}, {
  time: 1246924800000,
  constest: 18.3,
  temperature: [13.5, 24.8]
}, {
  time: 1247011200000,
  constest: 15.4,
  temperature: [10.5, 21.4]
}, {
  time: 1247097600000,
  constest: 16.4,
  temperature: [9.2, 23.8]
}, {
  time: 1247184000000,
  constest: 17.7,
  temperature: [11.6, 21.8]
}, {
  time: 1247270400000,
  constest: 17.5,
  temperature: [10.7, 23.7]
}, {
  time: 1247356800000,
  constest: 17.6,
  temperature: [11.0, 23.3]
}, {
  time: 1247443200000,
  constest: 17.7,
  temperature: [11.6, 23.7]
}, {
  time: 1247529600000,
  constest: 16.8,
  temperature: [11.8, 20.7]
}, {
  time: 1247616000000,
  constest: 17.7,
  temperature: [12.6, 22.4]
}, {
  time: 1247702400000,
  constest: 16.3,
```

```
  temperature: [13.6, 19.6]
}, {
  time: 1247788800000,
  constest: 17.8,
  temperature: [11.4, 22.6]
}, {
  time: 1247875200000,
  constest: 18.1,
  temperature: [13.2, 25.0]
}, {
  time: 1247961600000,
  constest: 17.2,
  temperature: [14.2, 21.6]
}, {
  time: 1248048000000,
  constest: 14.4,
  temperature: [13.1, 17.1]
}, {
  time: 1248134400000,
  constest: 13.7,
  temperature: [12.2, 15.5]
}, {
  time: 1248220800000,
  constest: 15.7,
  temperature: [12.0, 20.8]
}, {
  time: 1248307200000,
  constest: 14.6,
  temperature: [12.0, 17.1]
}, {
  time: 1248393600000,
  constest: 15.3,
  temperature: [12.7, 18.3]
}, {
  time: 1248480000000,
  constest: 15.3,
  temperature: [12.4, 19.4]
}, {
  time: 1248566400000,
  constest: 15.8,
```

```
  temperature: [12.6, 19.9]
 }, {
  time: 1248652800000,
  constest: 15.2,
  temperature: [11.9, 20.2]
 }, {
  time: 1248739200000,
  constest: 14.8,
  temperature: [11.0, 19.3]
 }, {
  time: 1248825600000,
  constest: 14.4,
  temperature: [10.8, 17.8]
 }, {
  time: 1248912000000,
  constest: 15,
  temperature: [11.8, 18.5]
 }, {
  time: 1248998400000,
  constest: 13.6,
  temperature: [10.8, 16.1]
 }]
```

- □□

```
40, 40, 80, 60
```

- □□□□□□ Transform

□□□□□ fold □

??	???
??	????
??????	ACME,Compitor
????	year
key	type
Value	value

- ??? Scale

year? X? ?

??	???
??	year
??	linear
????	1
??????	??

- □ Geom

???? area ?

??	???
??	year*value
??	???
????	type
??	smooth

??? Line ?

??	???
??	year*value
??	??
????	type
??	smooth
??	2

- □□ Legend

??	???

??	??
??	type
??	?
??	??

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?????.png

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```
[{
  year: '1996',
  north: 322,
  south: 162
}, {
  year: '1997',
  north: 324,
  south: 90
}, {
  year: '1998',
  north: 329,
  south: 50
}, {
  year: '1999',
  north: 342,
  south: 77
}, {
  year: '2000',
  north: 348,
  south: 35
}, {
  year: '2001',
  north: 334,
```

```
  south: -45
}, {
  year: '2002',
  north: 325,
  south: -88
}, {
  year: '2003',
  north: 316,
  south: -120
}, {
  year: '2004',
  north: 318,
  south: -156
}, {
  year: '2005',
  north: 330,
  south: -123
}, {
  year: '2006',
  north: 355,
  south: -88
}, {
  year: '2007',
  north: 366,
  south: -66
}, {
  year: '2008',
  north: 337,
  south: -45
}, {
  year: '2009',
  north: 352,
  south: -29
}, {
  year: '2010',
  north: 377,
  south: -45
}, {
  year: '2011',
  north: 383,
```

```
  south: -88
}, {
  year: '2012',
  north: 344,
  south: -132
}, {
  year: '2013',
  north: 366,
  south: -146
}, {
  year: '2014',
  north: 389,
  south: -169
}, {
  year: '2015',
  north: 334,
  south: -184
}]
```

- □□

```
40, 20, 80, 60
```

- □□□□□□ Transform

□□□□□ fold □

??	???
??	????
??????	north,south
????	year
key	type
Value	value

- □ Geom

???? area ?

??	???
??	year*value
??	???
????	type

??? Line ?

??	???
??	year*value
??	??
????	type
??	2

- ◫ Legend

??	???
??	??
??	value
??	?
??	??