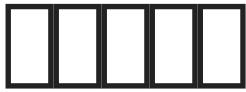


????????????????????????????, ??

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



???



?????.png



- A row of three empty rectangular boxes, each with a thin black border.

```
[{  
  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';  
}
```

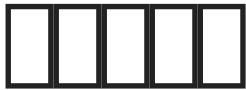
• ? Geom

???? area ?

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

??? Line ?

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



??

??
???



?????.png



- A row of three empty rectangular boxes, each with a black border and a white interior.

```
[{  
    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 ?

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

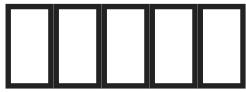
??	year*value
??	???
????	country
????	?? stack

??? Line ?

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

• ?? Legend

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



?????.png



-

```
[{  
    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



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



?????.png



-

```
[{  
    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

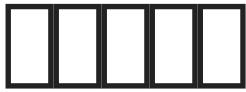
??? Line ?

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

- ☐ Legend

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

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



?????.png



-

```
[{  
  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,
```

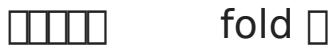
```

    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



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



???? area ?

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

??? Line ?

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

• Legend

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