



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

- [?????](#)
- [?????](#)
- [?????](#)
- [?????](#)
- [?????](#)



??



?????.png



-
-

```
[{
  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](#)



-
-

```
[{
  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

- **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 |



?????.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

-

Transform

fold

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

- Geom

???? area ?

| ?? | ??? |
|------|------------|
| ?? | year*value |
| ?? | ??? |
| ???? | type |

??? Line ?

| ?? | ??? |
|------|------------|
| ?? | year*value |
| ?? | ?? |
| ???? | type |
| ?? | 2 |

• Legend

| ?? | ??? |
|----|-------|
| ?? | ?? |
| ?? | value |
| ?? | ? |
| ?? | ?? |