


```
}, {  
  year: '1962',  
  sales: 38  
}]
```

- `geom`

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

- `geom`

interval ?

??	???
??	year*sales
??	???



?????.png



-
-

```
[{
  "name": "London",
  "☐☐": "Jan.",
  "☐☐☐☐": 18.9
}, {
  "name": "London",
  "☐☐": "Feb.",
  "☐☐☐☐": 28.8
}, {
  "name": "London",
  "☐☐": "Mar.",
  "☐☐☐☐": 39.3
}, {
  "name": "London",
  "☐☐": "Apr.",
  "☐☐☐☐": 81.4
}, {
  "name": "London",
  "☐☐": "May",
  "☐☐☐☐": 47
}, {
  "name": "London",
  "☐☐": "Jun.",
```

```
"precipitation": 20.3
}, {
  "name": "London",
  "month": "Jul.",
  "precipitation": 24
}, {
  "name": "London",
  "month": "Aug.",
  "precipitation": 35.6
}, {
  "name": "Berlin",
  "month": "Jan.",
  "precipitation": 12.4
}, {
  "name": "Berlin",
  "month": "Feb.",
  "precipitation": 23.2
}, {
  "name": "Berlin",
  "month": "Mar.",
  "precipitation": 34.5
}, {
  "name": "Berlin",
  "month": "Apr.",
  "precipitation": 99.7
}, {
  "name": "Berlin",
  "month": "May",
  "precipitation": 52.6
}, {
  "name": "Berlin",
  "month": "Jun.",
  "precipitation": 35.5
}, {
  "name": "Berlin",
  "month": "Jul.",
  "precipitation": 37.4
}, {
  "name": "Berlin",
  "month": "Aug.",
```

```
"interval": 42.4  
}]
```

- 

```
40, 40, 100, 60
```

-  Geom

interval ?

??	???
??	??*?????
??	???
????	name
????	?? dodge
dodgeRatio	0.5
marginRatio	0.1

-  Legend

??	???
??	??
??	name
??	?
??	??



?????.png



-
-

```
[{
  name: 'London',
  'Jan.': 18.9,
  'Feb.': 28.8,
  'Mar.': 39.3,
  'Apr.': 81.4,
  'May': 47,
  'Jun.': 20.3,
  'Jul.': 24,
  'Aug.': 35.6
}, {
  name: 'Berlin',
  'Jan.': 12.4,
  'Feb.': 23.2,
  'Mar.': 34.5,
  'Apr.': 99.7,
  'May': 52.6,
  'Jun.': 35.5,
  'Jul.': 37.4,
  'Aug.': 42.4
}]
```

- 

40, 40, 100, 60

- 

Transform

?????fold?

??	???
??	????
??????	Jan.,Feb.,Mar.,Apr.,May,Jun.,Jul.,Aug.
	name
key	key
value	value

- ? Geom

???? interval ?

??	???
??	key*value
??	???d
????	name
????	?? stack

- ?? Legend

??	???
??	??
??	key
??	?
??	??



?????.png



-
-

```
[{
  x: '000',
  y: [76, 100]
}, {
  x: '000',
  y: [56, 108]
}, {
  x: '000',
  y: [38, 129]
}, {
  x: '000',
  y: [58, 155]
}, {
  x: '000',
  y: [45, 120]
}, {
  x: '000',
  y: [23, 99]
}, {
  x: '000',
  y: [18, 56]
}, {
  x: '000',
```

```
y: [18, 34]
}]
```

-

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

- ? Geom

???? interval ?

??	???
??	$x*y$
??	???



?????.png



-
-

```
[{
  country: '██',
  population: 18203
}, {
  country: '██',
  population: 23489
}, {
  country: '██',
  population: 29034
}, {
  country: '██',
  population: 104970
}, {
  country: '██',
  population: 131744
}]
```

-

40, 60, 60, 70

• ? Geom

???? interval ?

??	???
??	country*population
??	???

• ??? Coord

??	???
??	?????
??	true



?????.png



-
-

```
[{
  "label": "Mon.",
  "type": "series1",
  "value": 2800
}, {
  "label": "Mon.",
  "type": "series2",
  "value": 2260
}, {
  "label": "Tues.",
  "type": "series1",
  "value": 1800
}, {
  "label": "Tues.",
  "type": "series2",
  "value": 1300
}, {
  "label": "Wed.",
  "type": "series1",
  "value": 950
}, {
  "label": "Wed.",
  "type": "series2",
```

```

    "value": 900
  }, {
    "label": "Thur.",
    "type": "series1",
    "value": 500
  }, {
    "label": "Thur.",
    "type": "series2",
    "value": 390
  }, {
    "label": "Fri.",
    "type": "series1",
    "value": 170
  }, {
    "label": "Fri.",
    "type": "series2",
    "value": 100
  }
}]

```

- 

40, 60, 80, 70

- ??? Axis

value?Y??

??	???
??	value
??	??
??	right

- ? Geom

???? interval ?

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

??	label*value
??	???
????	type
????	?? dodge
dodgeRatio	0.35
marginRatio	0.5

• ?? Legend

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

• ??? Coord

??	???
??	?????
??	Y
??	true



?????.png



-
-

```
[{
  'State': 'WY',
  '□□5□': 25635,
  '5□13□': 1890,
  '14□17□': 9314
}, {
  'State': 'DC',
  '□□5□': 30352,
  '5□13□': 20439,
  '14□17□': 10225
}, {
  'State': 'VT',
  '□□5□': 38253,
  '5□13□': 42538,
  '14□17□': 15757
}, {
  'State': 'ND',
  '□□5□': 51896,
  '5□13□': 67358,
  '14□17□': 18794
}, {
  'State': 'AK',
  '□□5□': 72083,
```

```
'5□13□': 85640,  
'14□17□': 22153  
}]
```

- □□

40, 60, 80, 70

• ?????? Transform

?????fold?

??	???
??	????
??????	<u>??5?,5?13?,14?17?</u>
????	State
key	???
value	????

• ? Geom

???? interval ?

??	???
??	State*????
??	???
????	???
????	?? stack

• ?? Legend

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

• ??? Coord

??	???
??	?????
??	true



?????.png



-
-

```
[{
  profession: '□□□□□□□□',
  highest: 110000,
  minimum: 23000,
  mean: 56636
}, {
  profession: '□□□□□',
  highest: 120000,
  minimum: 18000,
  mean: 66625
}, {
  profession: '□□□',
  highest: 125000,
  minimum: 24000,
  mean: 72536
}, {
  profession: '□□□',
  highest: 130000,
  minimum: 22500,
  mean: 75256
}, {
  profession: '□□□□□',
  highest: 131000,
```

```

minimum: 23000,
mean: 77031
}]

```

-

20, 80, 50, 150

- ?????? Transform

map

??	???
??	????
????	<pre> function callback(row) { row.range = [row.minimum, row.highest]; return row; } </pre>

- ? Geom

???? interval ?

??	???
??	profession*range
??	???

- ??? Coord

??	???
??	?????
??	true