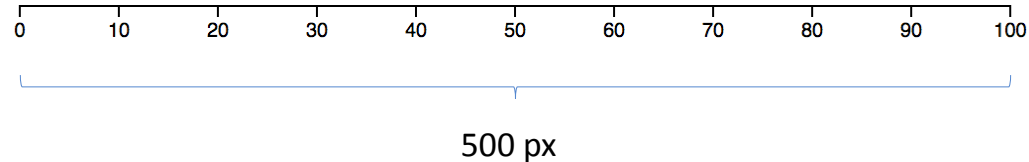# D3 Tutorial

Axes

Edit by Jiayi Xu and Han-Wei Shen, The Ohio State University

Axes - Create an axis

```
var xScale = d3.scaleLinear()
    .domain([0, 100])
    .range([0, 500]);

var xAxis = d3.axisBottom(xScale);
d3.select('svg')
    .append('g')
    .attr("transform", "translate(50, 50)")
    .call(xAxis);
```

- Set the scale of the axis
  - The length of 100 units = 500 px

| 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |

500 px

Axes - Create an axis

```
var xScale = d3.scaleLinear()
    .domain([0, 100])
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```
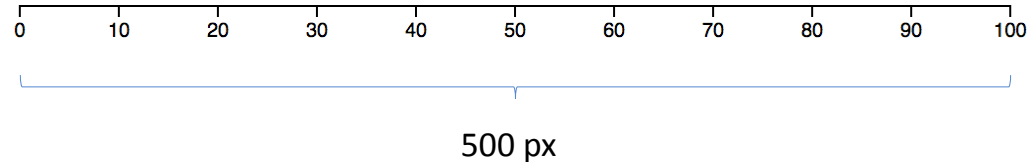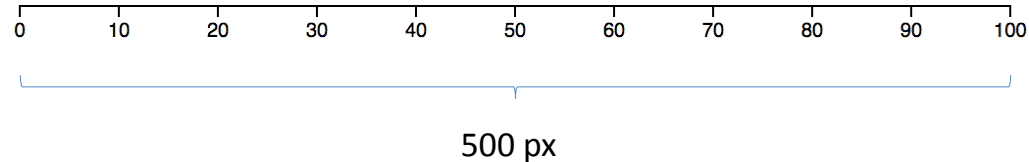
- Constructs a new **bottom-oriented** axis **generator** for the given scale

```
0    10    20    30    40    50    60    70    80    90    100
```

500 px

Axes - Create an axis
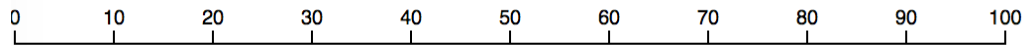
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    .append('g')
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```
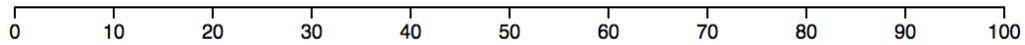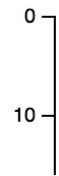
- Render the axis on a *g* tag

| 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |

500 px

Axes - Orientation

- d3.axisTop(*scale*)

0   10   20   30   40   50   60   70   80   90   100

- d3.axisBottom(*scale*)

0   10   20   30   40   50   60   70   80   90   100

- d3.axisLeft(*scale*)

0

10

- d3.axisRight(*scale*)

0

10
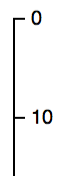
Axes - Create an axis for population of cities

1. Data

```
var cities = [
    { name: 'London', population: 8674000},
    { name: 'New York', population: 8406000},
    { name: 'Sydney', population: 4293000},
    { name: 'Paris', population: 2244000},
    { name: 'Beijing', population: 11510000}
];
```

2. Scale

```
var pop2width = d3.scaleLinear()
    .domain([0, 1.2*1e7])
    .range([0, 500]);
```
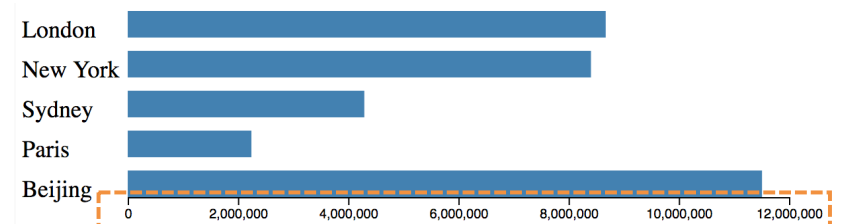
3. Axis

```
var xAxis = d3.axisBottom(pop2width)
                    .ticks(6);
```

4. Render the axis

```
svg.append("g")
    .attr("transform",
        "translate(80, "
        + (barHeight + padding)*cities.length + ")")
    .call(xAxis);
```

5. Result

Give a suggested number of ticks