

D3: Diving into the library

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Scales

"Scales are functions that map from an input domain to an output range"

- Mike Bostock

Items and Pixels

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- ▶ Requires bigger display to view bars
- ▶ How do we scale these values?

Linear Scales

Linear scales is nothing more than normalization, in which we map a numeric value to a new value between 0 and 1, based on the possible minimum and maximum values. For example, 365 days in a year, day 310 maps to 0.85.

With linear scales, the input value is normalized according to the domain, and then the normalized value is scaled to the output range.

Constructing a Scale

```
var scale = d3.scale.linear()  
              .domain([100, 500])  
              .range([10, 350]);  
  
scale(100); // Returns 10  
scale(300); // Returns 180  
scale(500); // Returns 350
```


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The SVG Element

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- ▶ Can be included directly within any HTML document
- ▶ Supported by all web browsers except IE8 or higher

SVG Shapes

► rect

SVG Shapes

- ▶ rect
- ▶ circle

SVG Shapes

- ▶ rect
- ▶ circle
- ▶ ellipse

SVG Shapes

- ▶ rect
- ▶ circle
- ▶ ellipse
- ▶ line

SVG Shapes

- ▶ rect
- ▶ circle
- ▶ ellipse
- ▶ line
- ▶ text

SVG Shapes

- ▶ rect
- ▶ circle
- ▶ ellipse
- ▶ line
- ▶ text
- ▶ path

rect

```
<rect x="0" y="0" width="500" height="50"/>
```

circle

```
<circle cx="250" cy="25" r="25"/>
```

ellipse

```
<ellipse cx="250" cy="25" rx="100" ry="25"/>
```


line

```
<line x1="0" y1="0" x2="500" y2="50" stroke="black"/>
```