d3.js

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float

Visualisations

Animated

Maps

Data

Demos

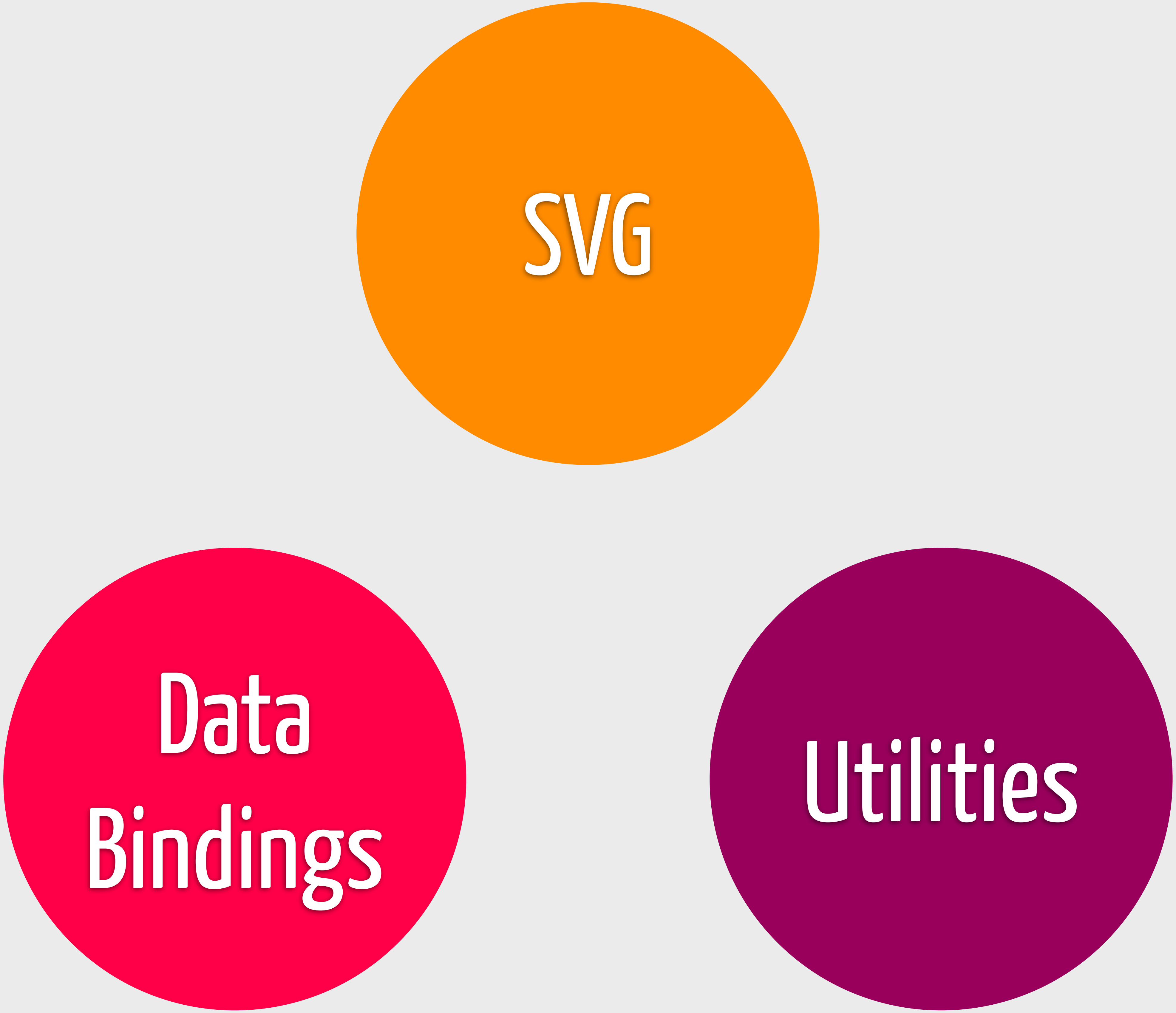
Tech Meetup Demo

Edinburgh Bus Stops

Earthquakes in the last 30 days

Nuclear War

Key Concepts



SVG

Data Bindings

Utilities

<SVG>

Vectors in the browser

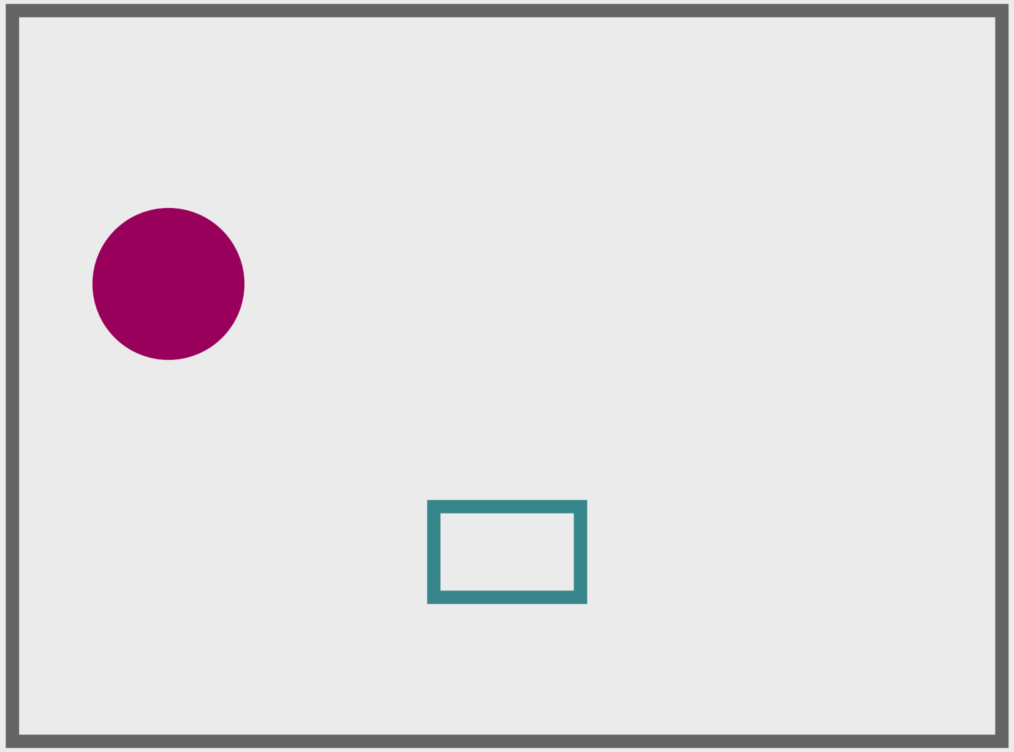
SVG building svg programmatically

D3:

```
svg.append('circle')
  .attr({cx: 20, cy: 50, r: 10, fill:  'purple'})

svg.append('rect')
  .attr({ x: 100, y: 200, width: 20, height: 10 })
  .attr('stroke', 'green')
```

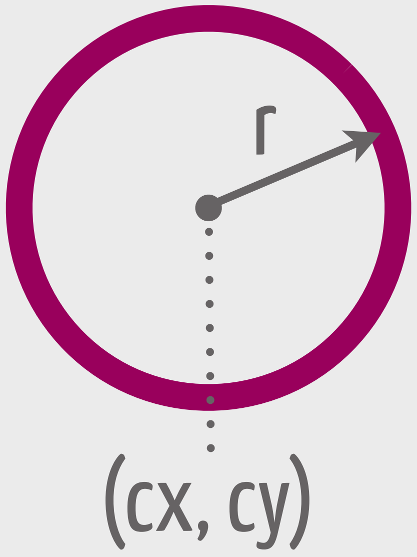
HTML:

```
<svg>
 <circle cx='20' cy='50' r='10' fill='purple' />
 <rect x='100' y='200'
      width='20' height='10' stroke='green' />
</svg>
```



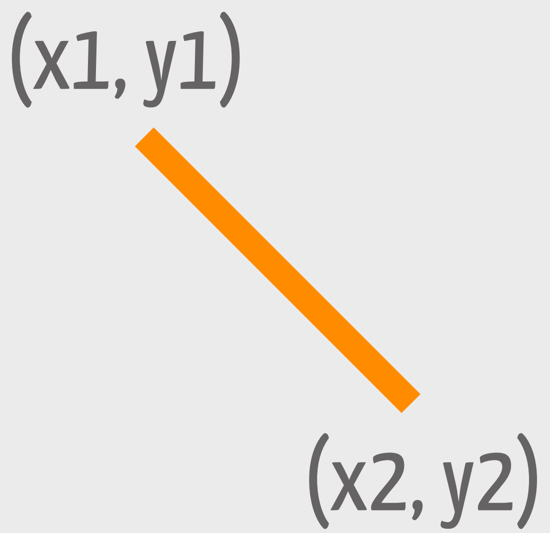
Shapes basic svg elements

<circle />



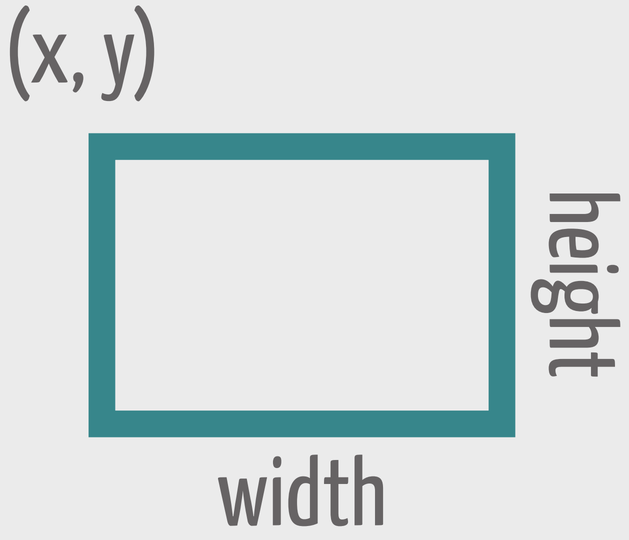
```
svg.append('circle')
   .attr('cx', 10)
   .attr('cy', 20)
   .attr('r', 50)
```

<line />



```
svg.append('line')
   .attr('x1', 10)
   .attr('y2', 10)
   .attr('x2', 20)
   .attr('y2', 20)
```

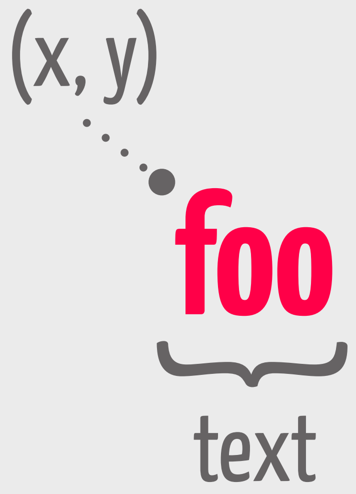
<rect />



```
svg.append('rect')
   .attr('x', 10)
   .attr('y', 10)
   .attr('width', 50)
   .attr('height', 20)
```

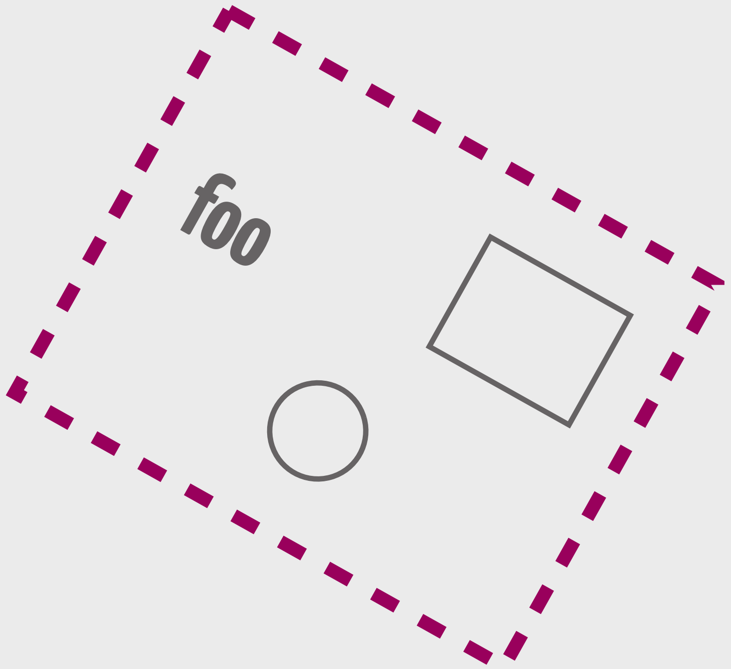
Shapes basic svg elements

<text />



```
svg.append('text')
    .attr('x', 10)
    .attr('y', 20)
    .text('foo')
```

<g>...</g>



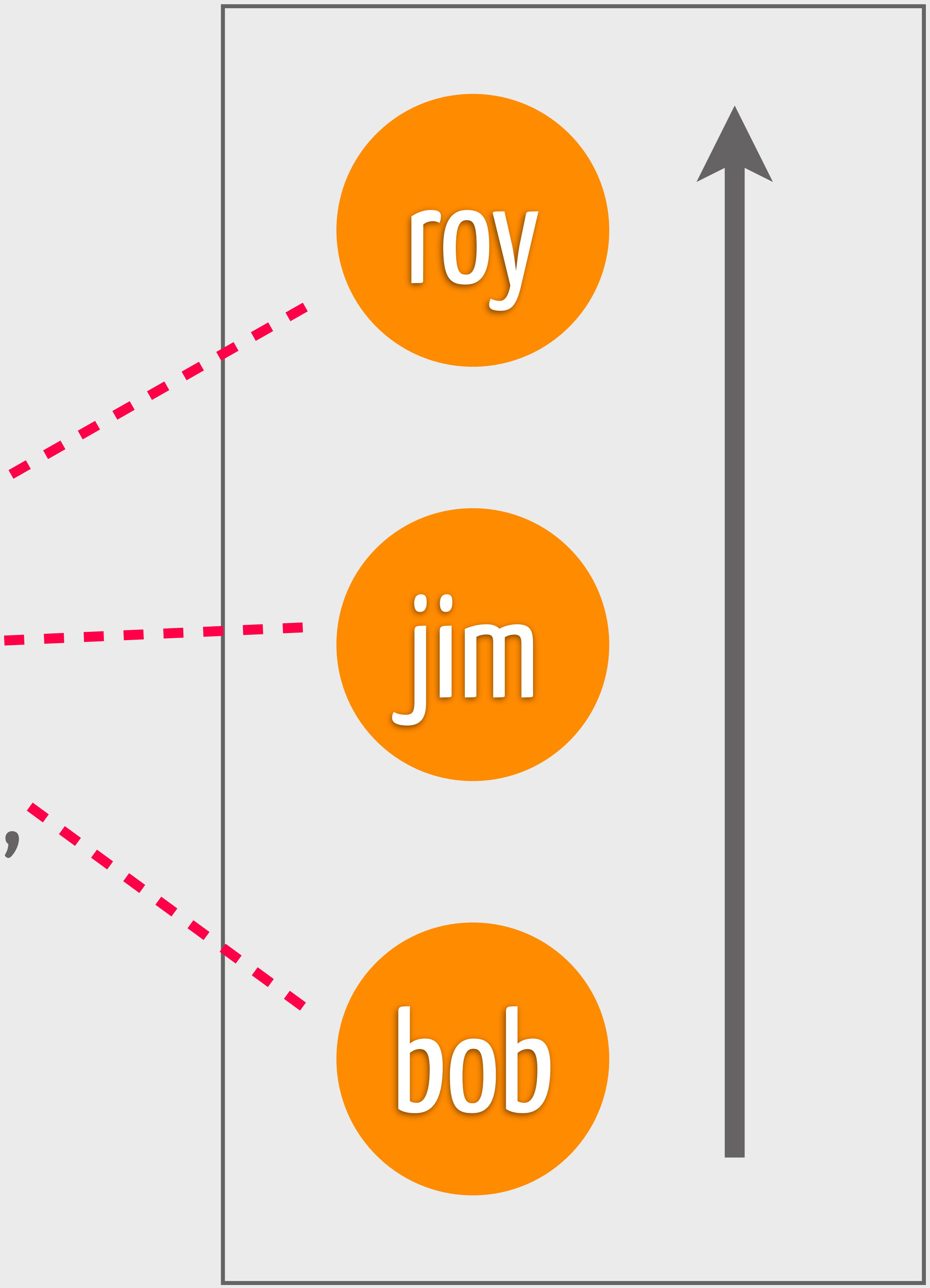
```
group = svg.append('g')
     .attr('transform', 'rotate(30)translate(10,20)')

group.append('rect')...
group.append('text')...
```

Databinding

Adding data

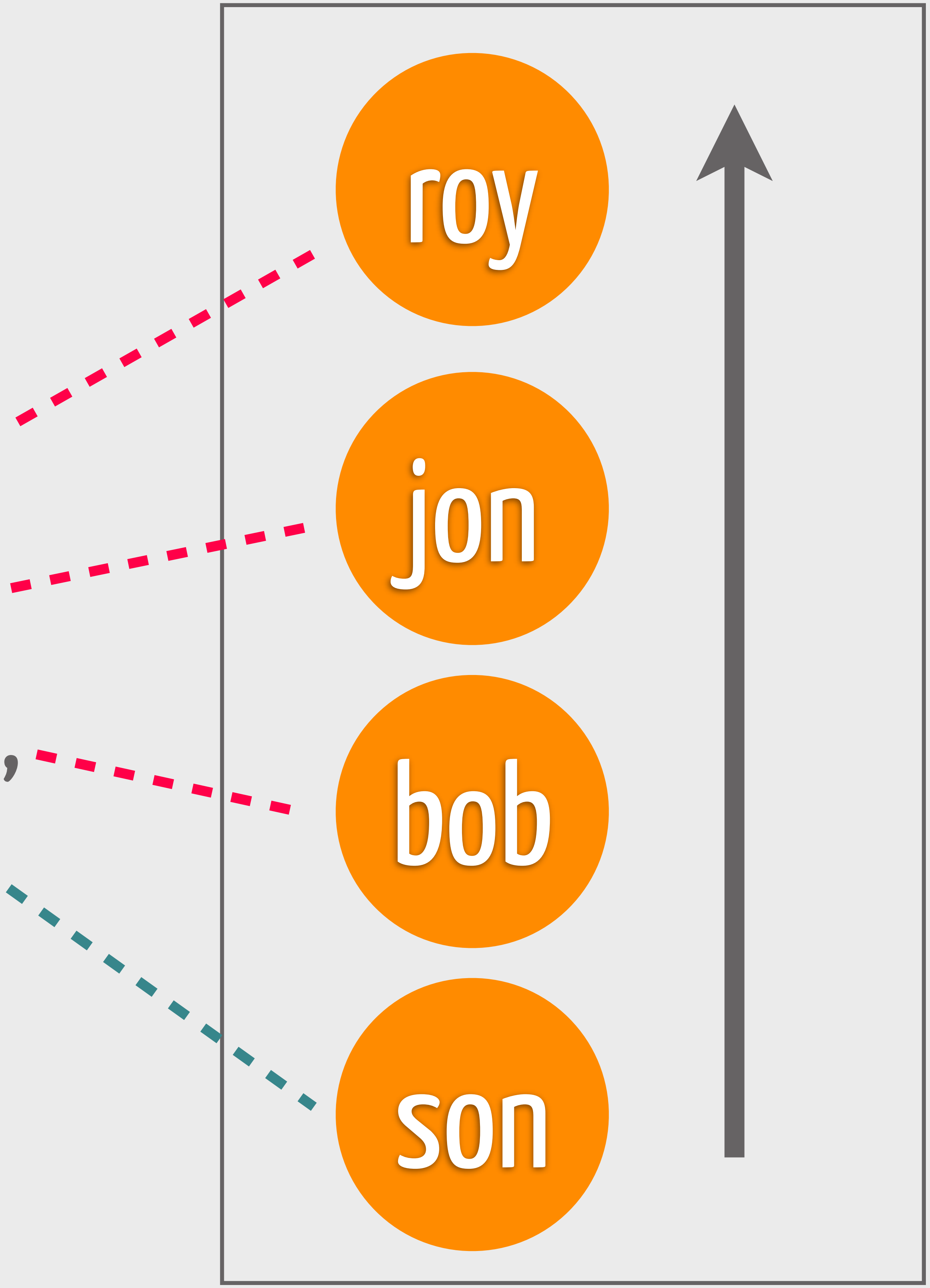
Data Binding binding data to your visualisation

```
people = [
  { name: ‘roy’, age: 60 },
  { name: ‘jim’, age: 40 },
  { name: ‘bob’, age: 25 },
]
```



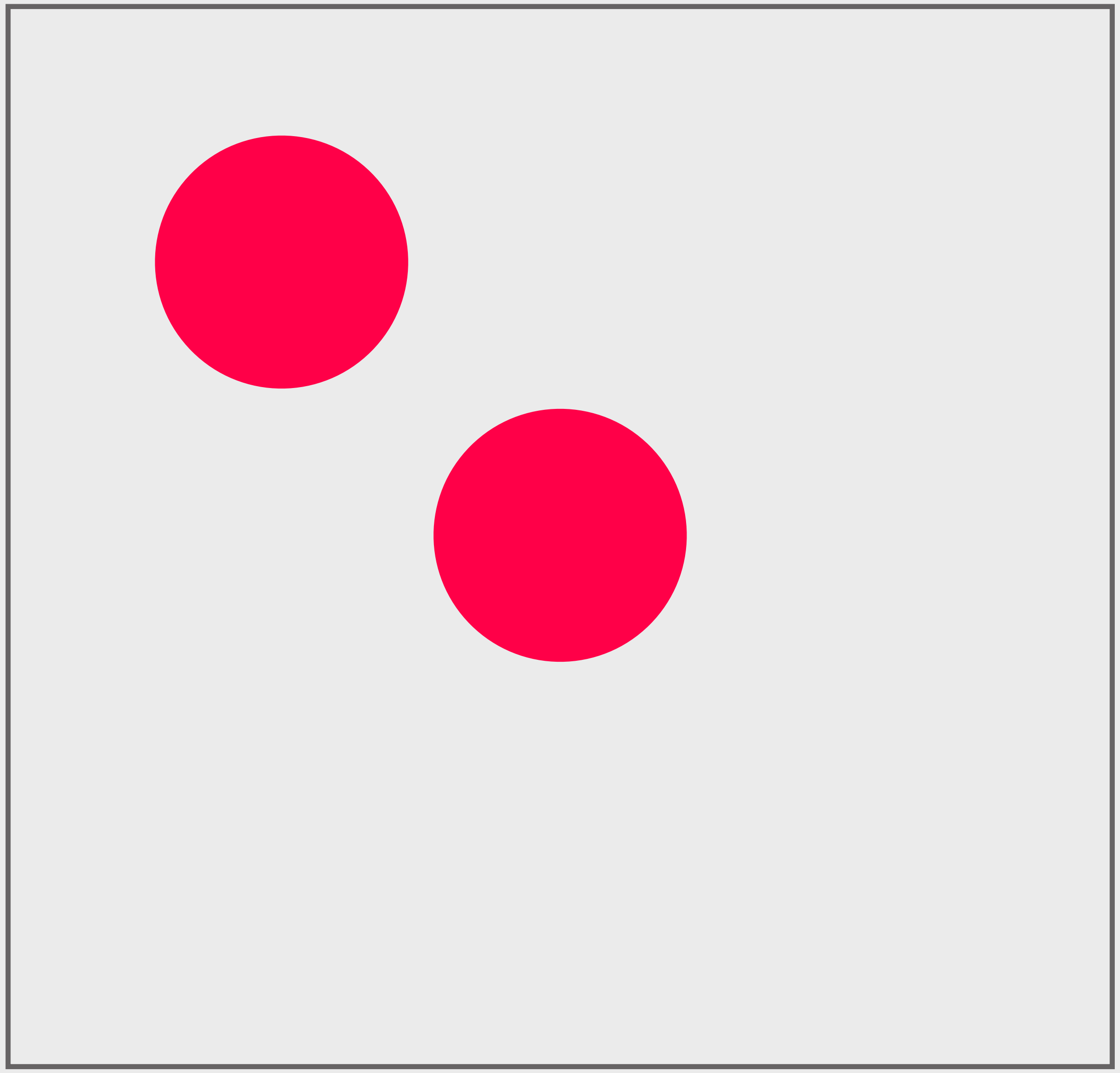
Data Binding binding data to your visualisation

```
people = [
  { name: ‘roy’, age: 60 },
  { name: ‘jon’, age: 40 },
  { name: ‘bob’, age: 25 },
  { name: ‘son’, age: 16 },
]
```



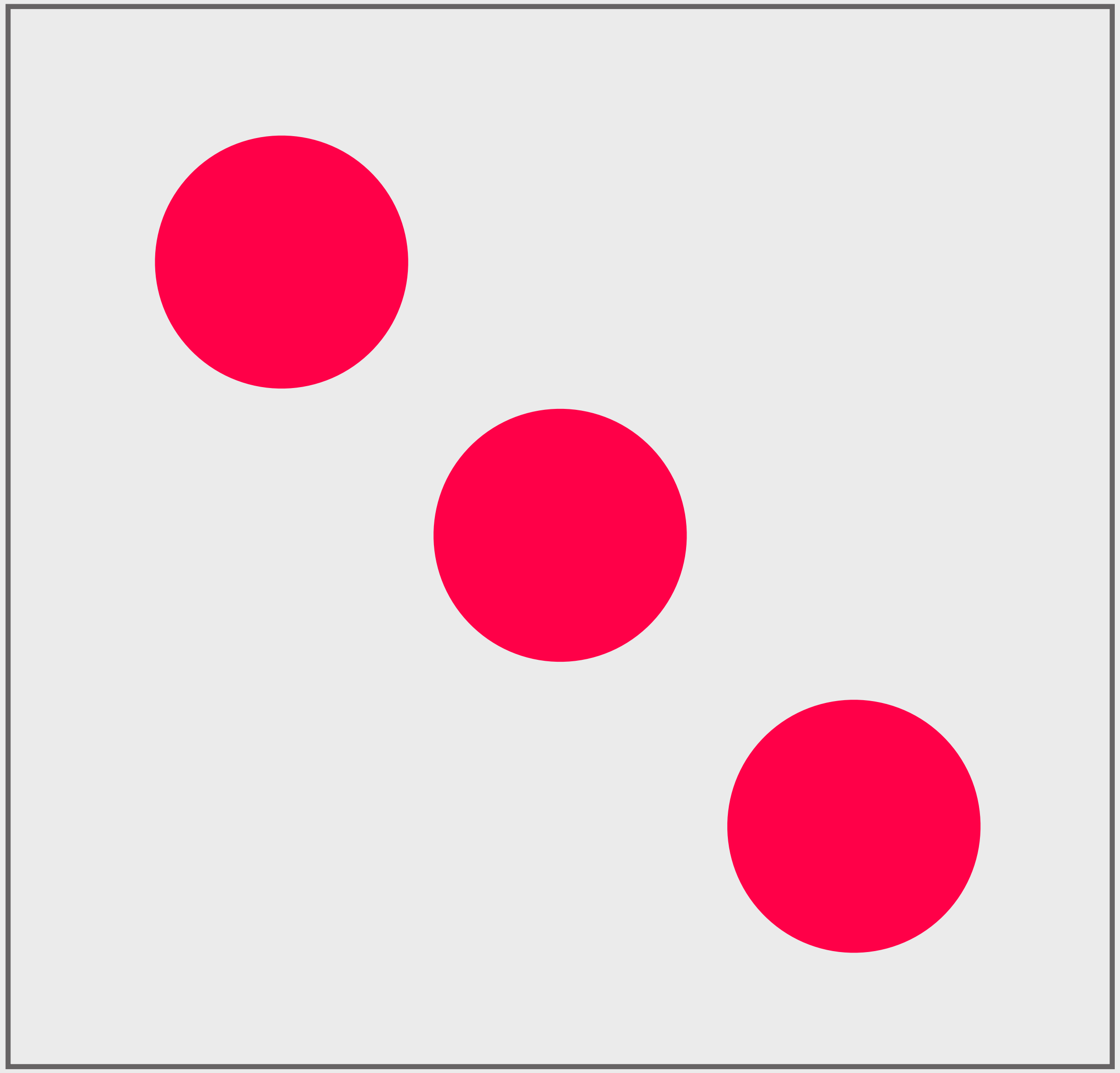
Data Binding enter(): new data being added

```
data = [ {x: 10, y: 10}, {x: 20, y: 20} ]

points = svg.selectAll('circle')
                  .data(data)

points.enter().append('circle')
          .attr('cx', function(p) { return p.x })
          .attr('cy', function(p) { return p.y })
          .attr('r', 10)
```



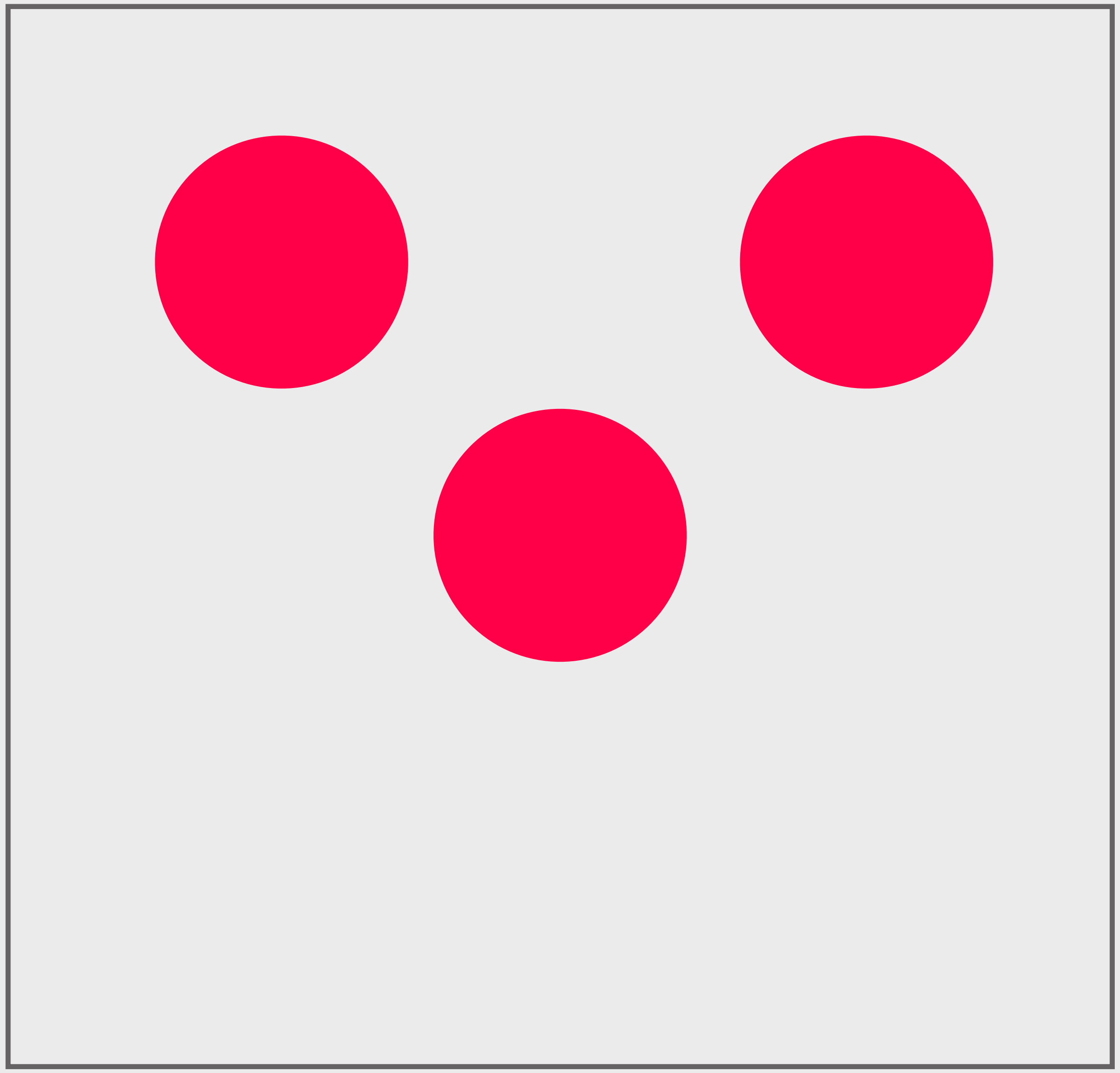
Data Binding enter(): new data being added

```
data = [ {x: 10, y: 10}, {x: 20, y: 20} ]

data.push({x: 30, y: 30})

points = svg.selectAll(‘circle’)
                  .data(data)

points.enter().append(‘circle’)
           .attr(‘cx’, function(p) { return p.x })
           .attr(‘cy’, function(p) { return p.y })
           .attr(‘r’, 10)
```



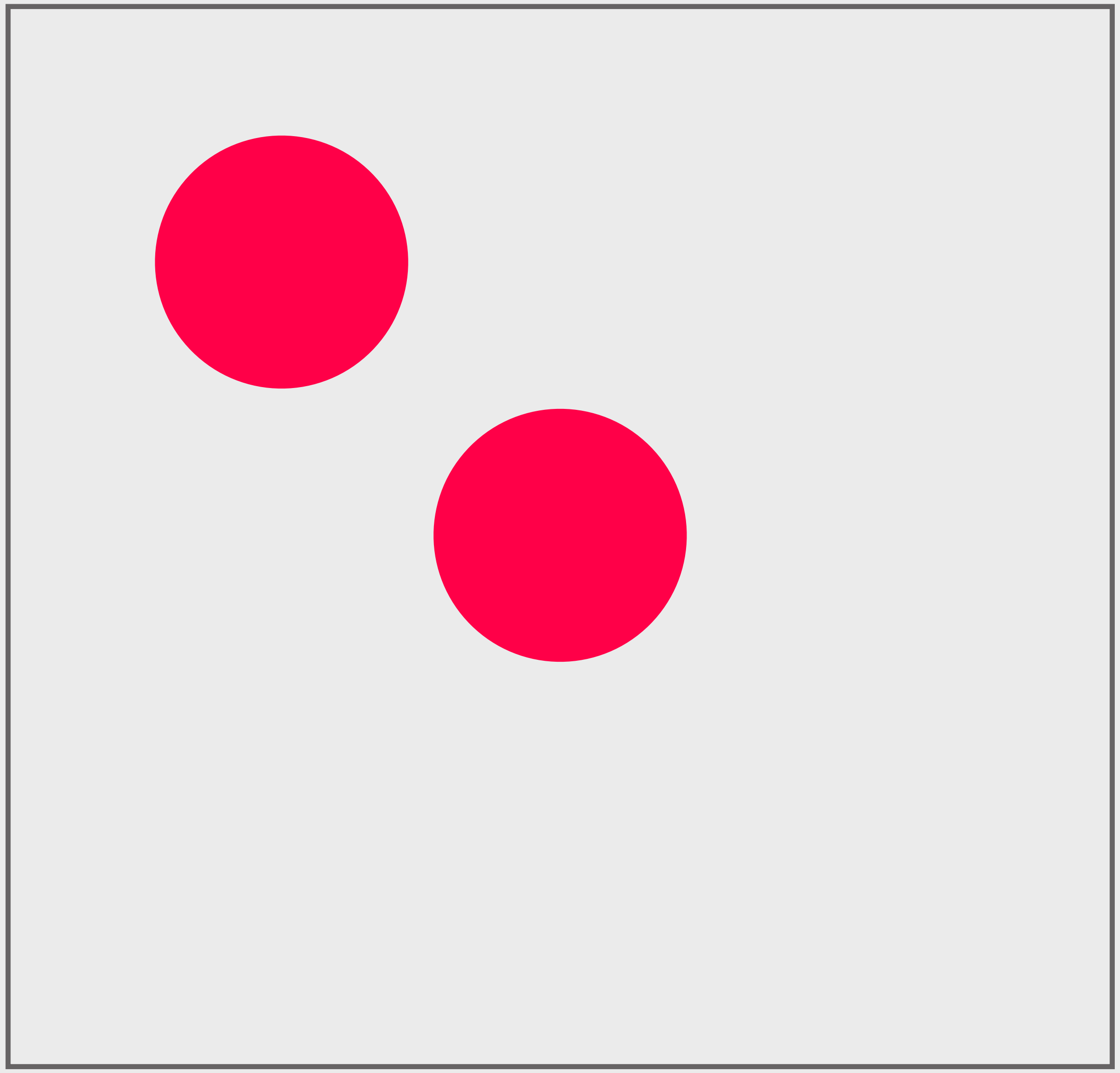
Data Binding data being changed

```
data = [ {x: 10, y: 10},
                     {x: 20, y: 20},
                                  {x: 30, y: 30} ]

data[3].y = 10

points = svg.selectAll(‘circle’)
                .data(data)

points.transition().duration(2000)
          .attr(‘cy’, function(p) { return p.y })
```



Data Binding exit(): data being removed

```
data = [ {x: 10, y: 10},
                   {x: 20, y: 20},
                            {x: 30, y: 30} ]

data.pop() //removes the last one

points = svg.selectAll('circle')
              .data(data)

points.exit().remove()
```



Utilities

Making life easier

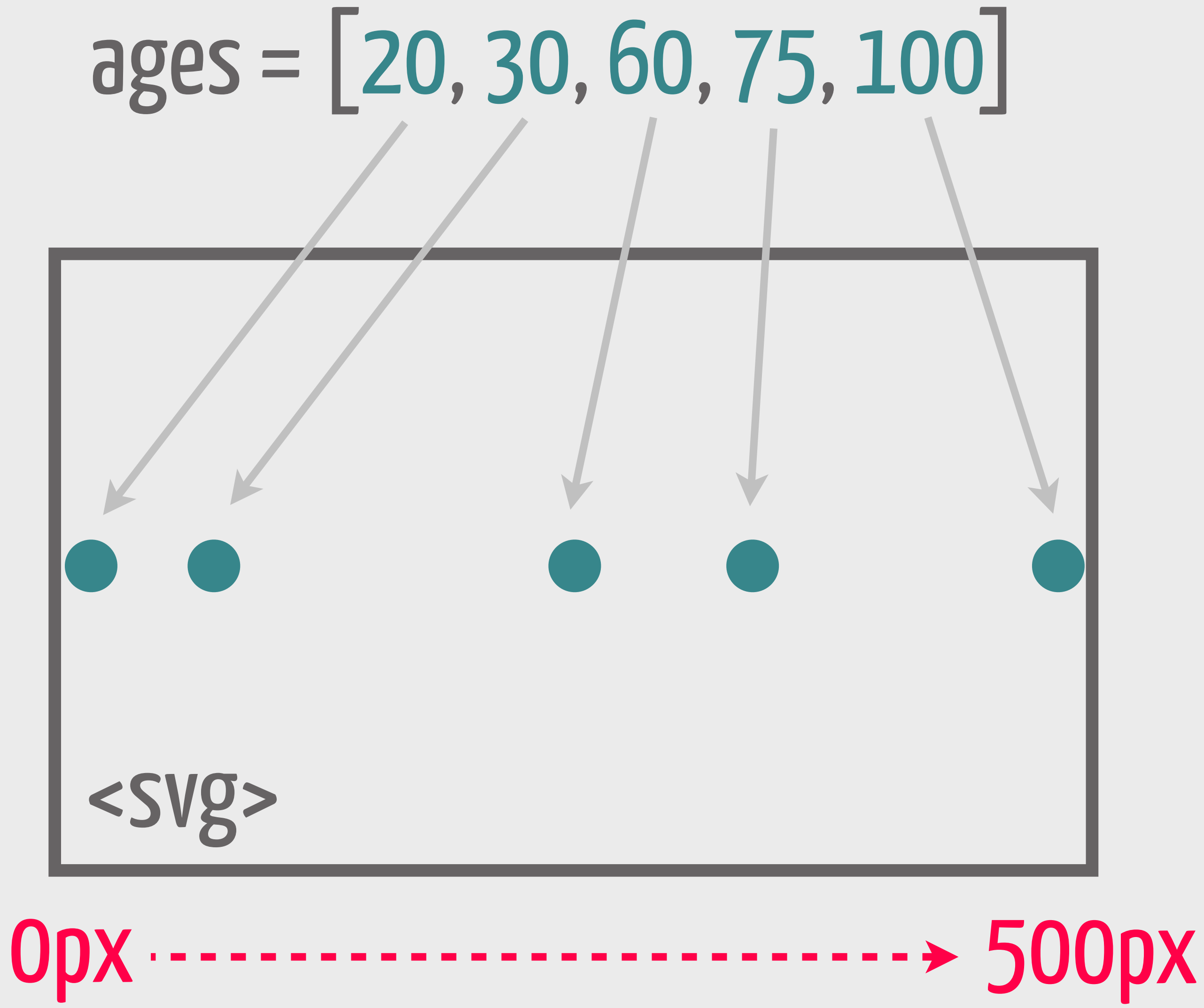
Utilities scales: converting data to pixels

I have a list of adult’s ages that I want to draw on my diagram

The domain is the extent of their ages, in this case 20 – 100

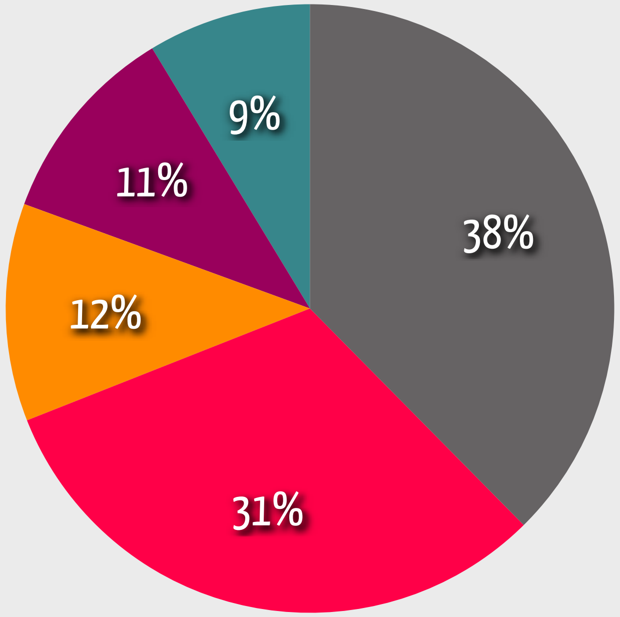
The range is the extent of the axis on which I want to draw (0 – 500px)

```
d3.scale.linear()
        .domain([20, 100])
        .range([0, 500])
```

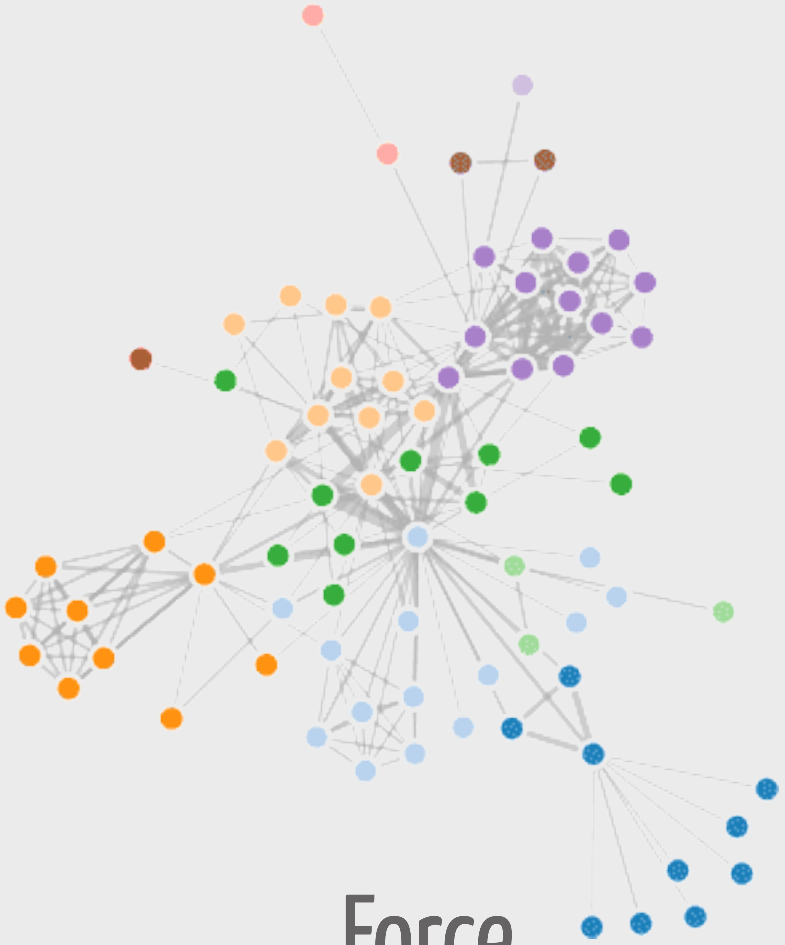


ages = [20, 30, 60, 75, 100]

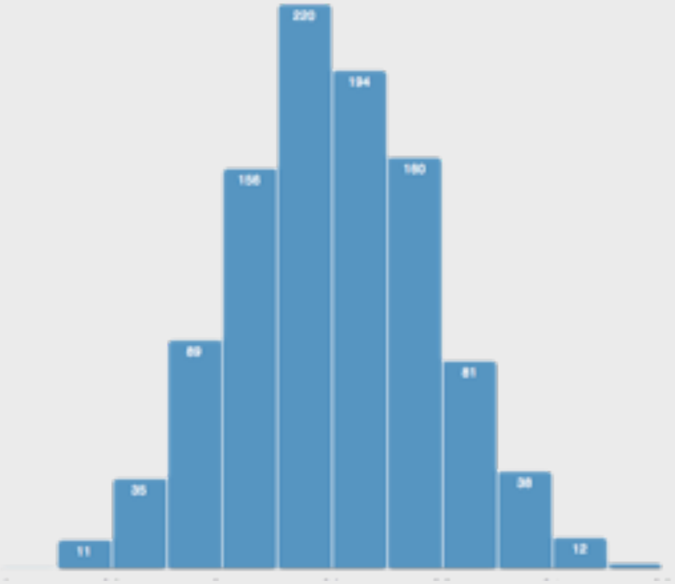
Utilities layouts: common visualisations



Pie



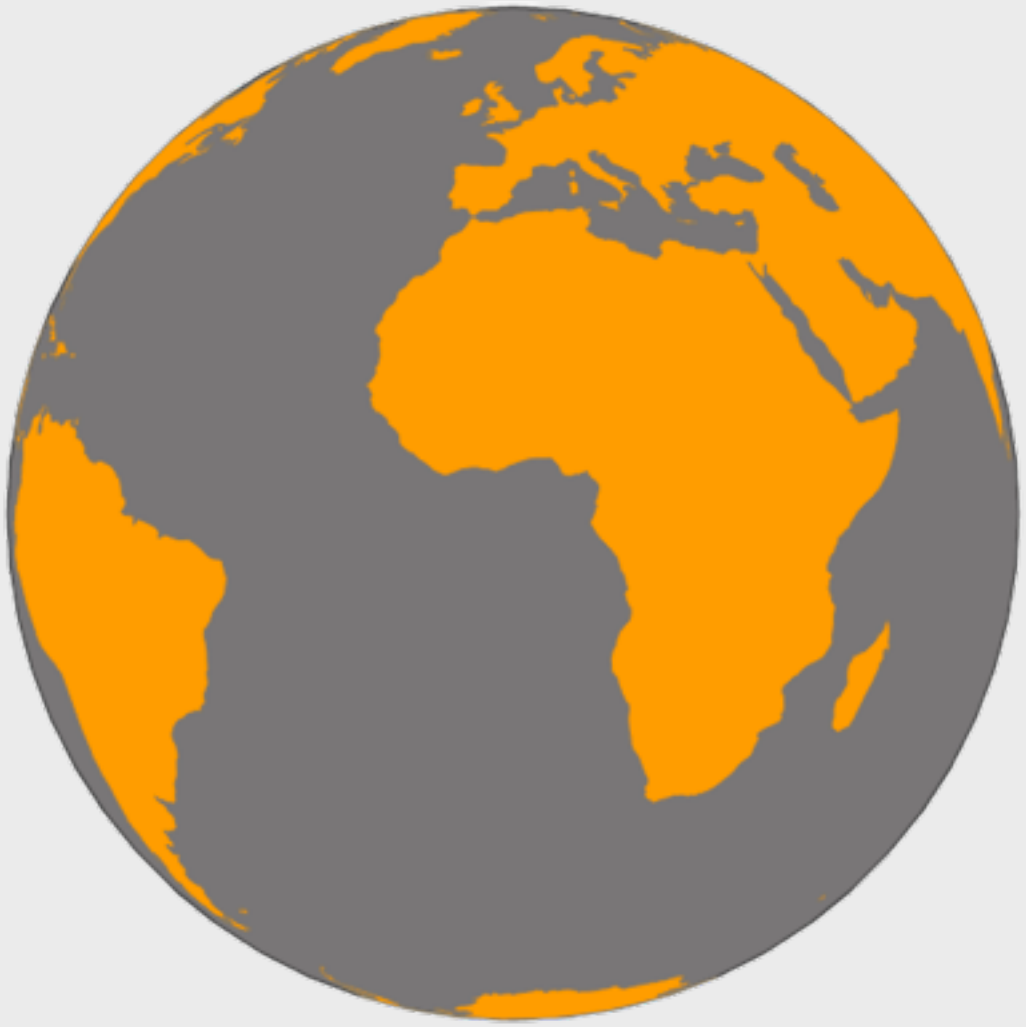
Force



Histogram

Utilities geo: projections

```
var width = 960,
    height = 500;

var projection = d3.geo.orthographic()
    .scale(245)
    .clipAngle(90);

var path = d3.geo.path()
    .projection(projection);

var svg = d3.select("body").append("svg")
    .attr("width", width)
    .attr("height", height);

svg.append("path")
    .datum({type: "Sphere"})
    .attr("class", "background")
    .attr("d", path);

svg.append("path")
    .datum({type: "Sphere"})
    .attr("class", "foreground")
    .attr("d", path);

d3.json("/data/world-countries.json", function(error, world) {
  svg.insert("path", ".graticule")
      .datum(topojson.object(world, world.objects.land))
      .attr("class", "land")
      .attr("d", path);
});
```



Resources

D3 Homepage & Examples

D3 Full Documentation

NVD3: Simple D3 based charts