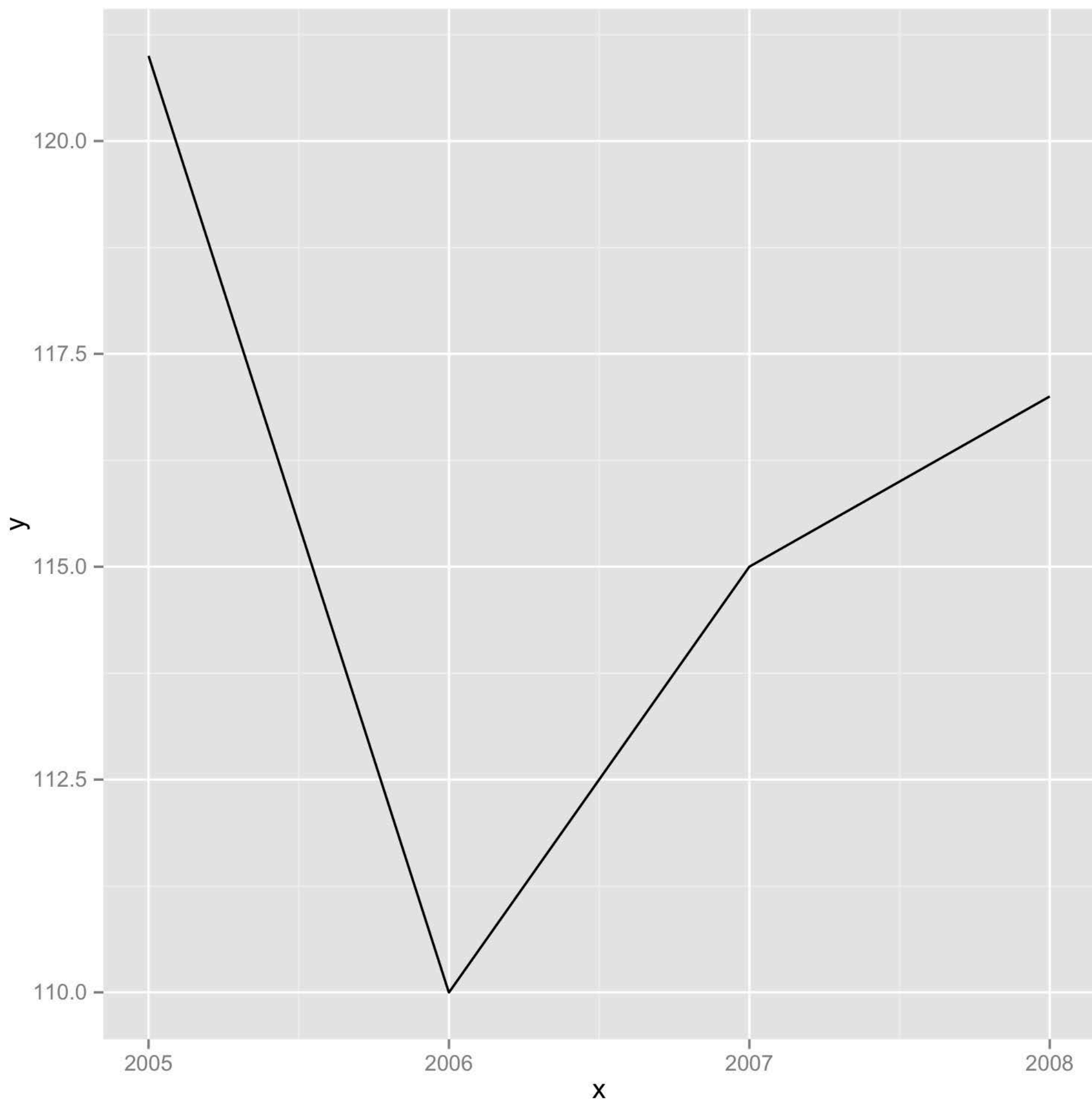


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```
d <- data.frame(x=c(2005, 2006, 2007, 2008), y=c(121, 110, 115, 117))
```

```
qplot(x, y, data=d, geom='line')
```



```
var x = [2005, 2006, 2007, 2008],  
    y = [121, 110, 115, 117];
```

```
d3.chart({  
  x: x,  
  y: y,  
  type: 'line',  
  width: 400,  
  height: 400  
});
```

```

var data = [
  {x: 2005, y: 121},
  {x: 2006, y: 110},
  {x: 2007, y: 115},
  {x: 2008, y: 117},
];

var margin = {top: 20, right: 20, bottom: 30, left: 50},
    width = 400 - margin.right - margin.left,
    height = 400 - margin.top - margin.bottom;

var x = d3.scale.linear()
    .domain(d3.extent(data, function(d) { return d.x; } ))
    .range([0, width]);

var y = d3.scale.linear()
    .domain([0, d3.max(data, function(d) { return d.y ;})])
    .range([height, 0]);

var xAxis = d3.svg.axis()
    .scale(x)
    .orient('bottom');

var yAxis = d3.svg.axis()
    .scale(y)
    .orient('left');

var line = d3.svg.line()
    .x(function(d) { return x(d.x); })
    .y(function(d) { return y(d.y); });

var svg = d3.select('body').append('svg')
    .attr('width', width + margin.left + margin.right)
    .attr('height', height + margin.top + margin.bottom)
    .append('g')
    .attr('transform', 'translate(' + margin.left + ',' + margin.top + ')');

svg.append('g')
    .attr('transform', 'translate(0,' + height + ')')
    .call(xAxis);

svg.append('g')
    .call(yAxis);

svg.append('path')
    .datum(data)
    .attr('d', line);

```

Easy to use

Powerful and flexible

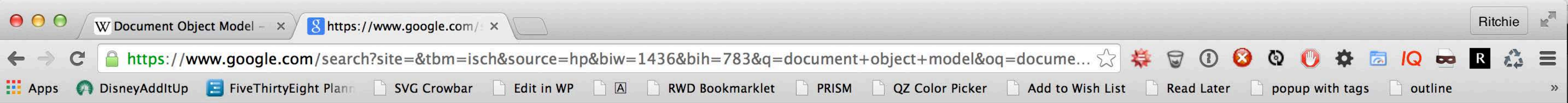


D3

D3 = Data-Driven Documents

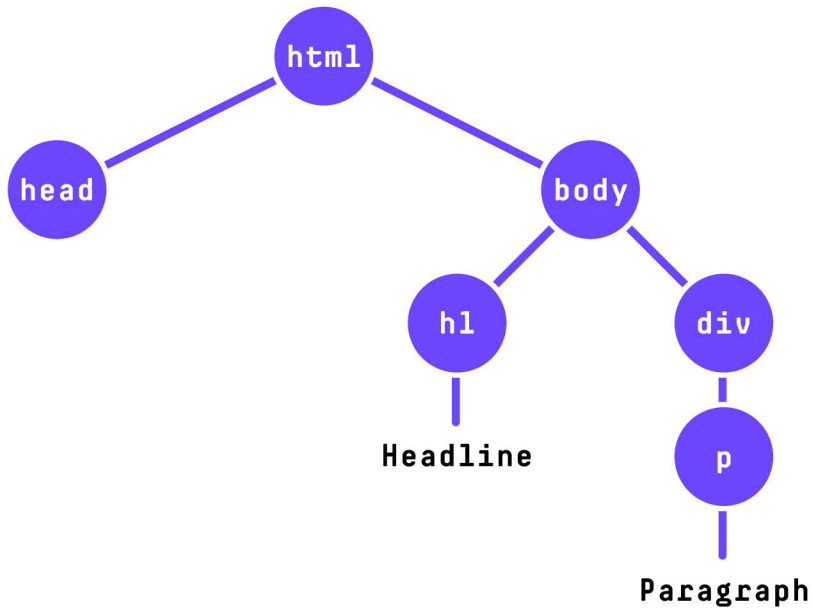
DOM = Document Object Model


```
<html>
  <head>
</head>
  <body>
    <h1>Headline</h1>
    <div>
      <p>Paragraph</p>
    </div>
  </body>
</html>
```



Headline

Paragraph



```
<!DOCTYPE html>
```

```
▼ <html>
```

```
    <head></head>
```

```
▼ <body>
```

```
    <h1>Headline</h1>
```

```
▼ <div>
```

```
    <p>Paragraph</p>
```

```
  </div>
```

```
  </body>
```

```
</html>
```

D3 lets you shape
the DOM tree — with data!

Data-join



d3js.org



d3js.org

Paragraph 1

Paragraph 2

Paragraph 3

Paragraph 4

Paragraph 5

```
var data = [  
    'Paragraph 1',  
    'Paragraph 2',  
    'Paragraph 3',  
    'Paragraph 4',  
    'Paragraph 5'  
];
```

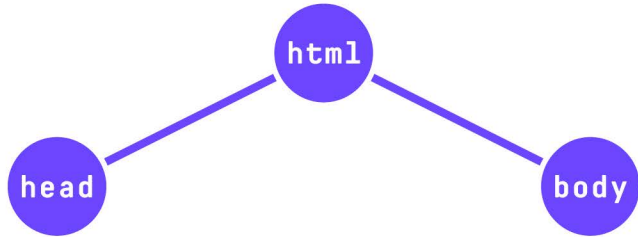

'Paragraph 1'

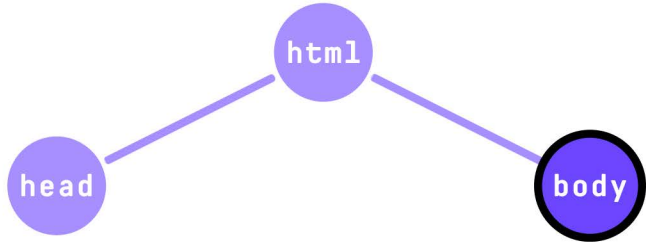
'Paragraph 2'

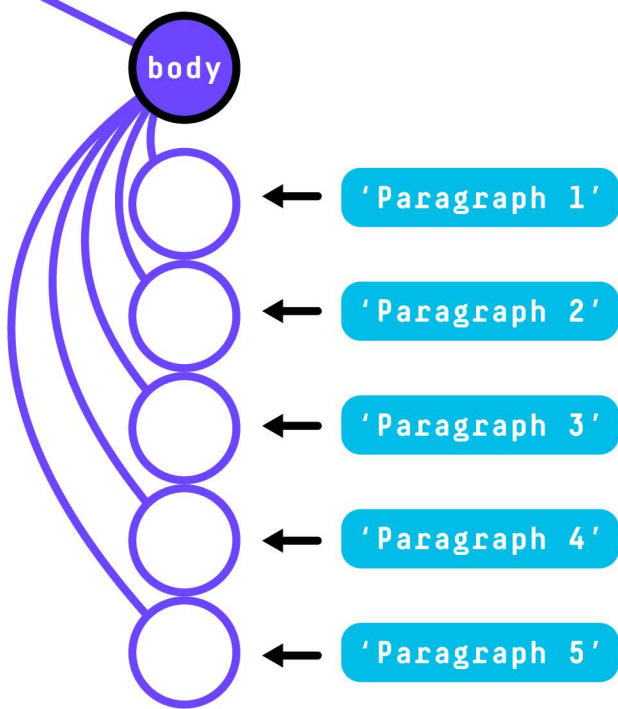
'Paragraph 3'

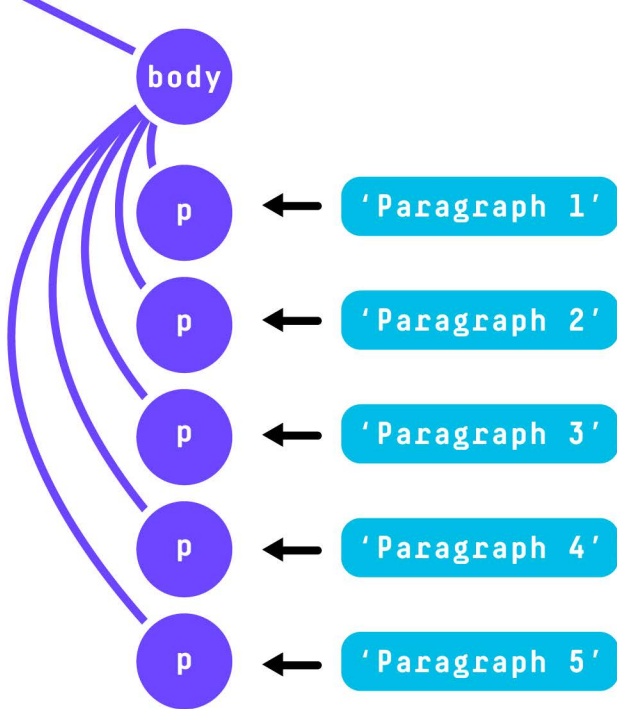
'Paragraph 4'

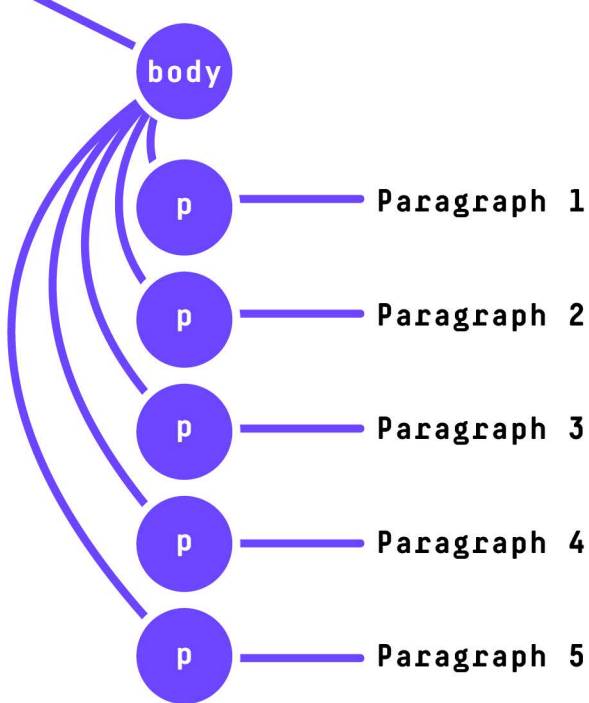
'Paragraph 5'





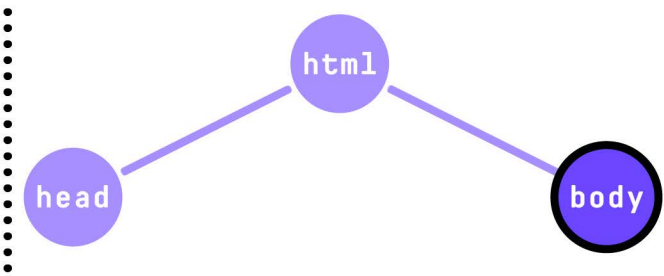




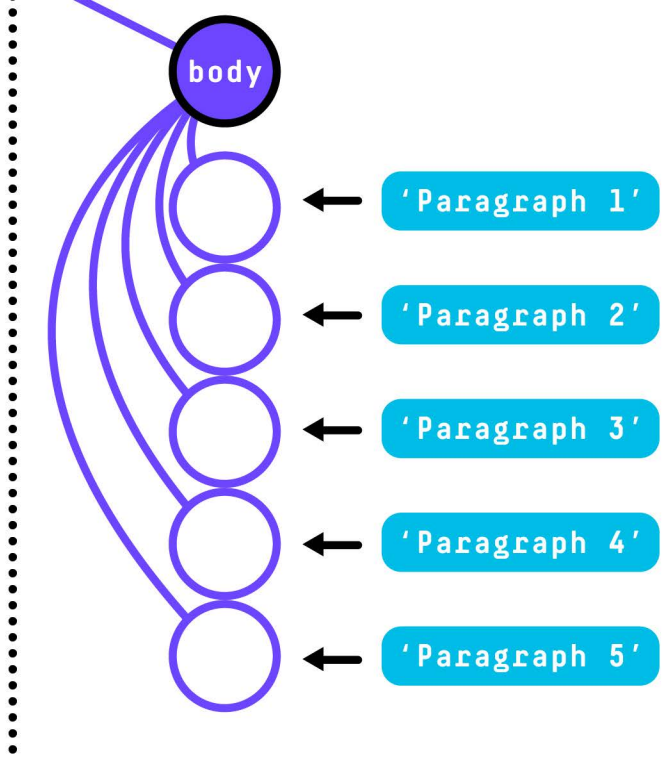


```
d3.select('body')  
  .selectAll('p')  
  .data(data)  
  .enter().append('p')  
    .text(function(d) {  
      return d;  
    }));
```

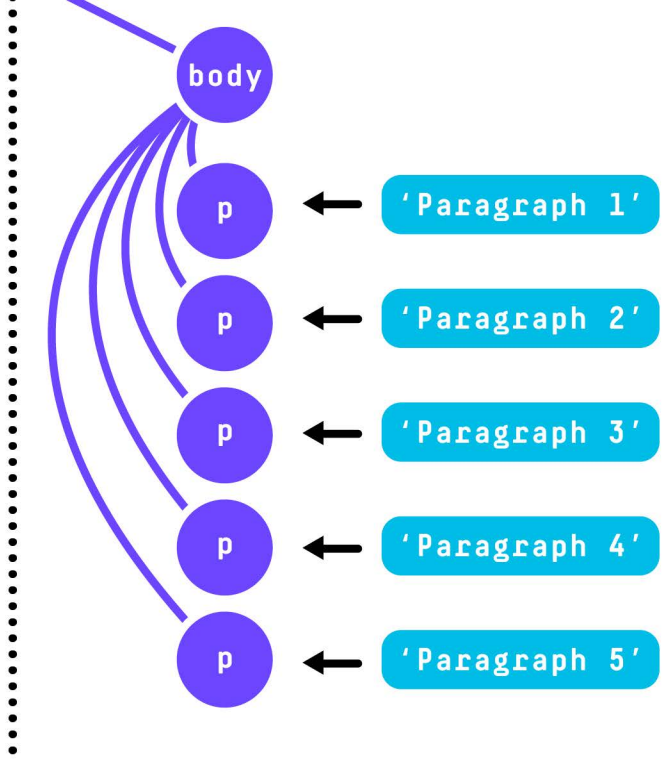
```
d3.select('body')
```



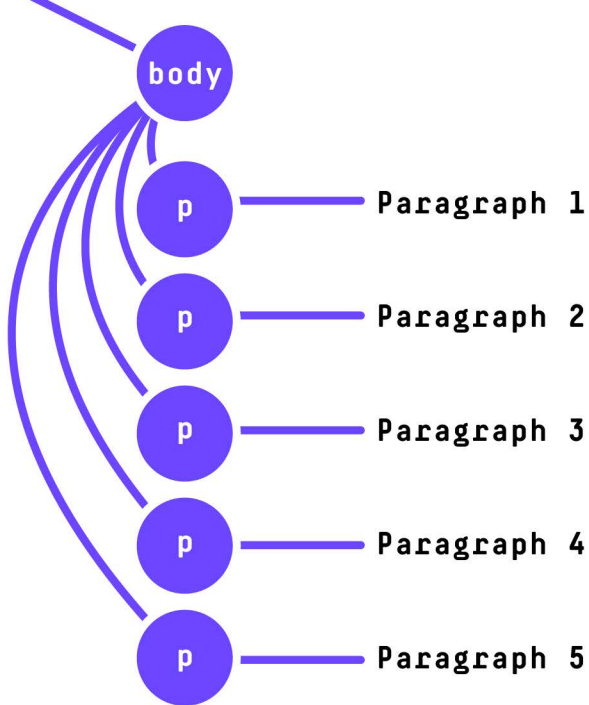

```
d3.select('body')  
  .selectAll('p')  
  .data(data)
```



```
d3.select('body')  
  .selectAll('p')  
  .data(data)  
  .enter().append('p')
```

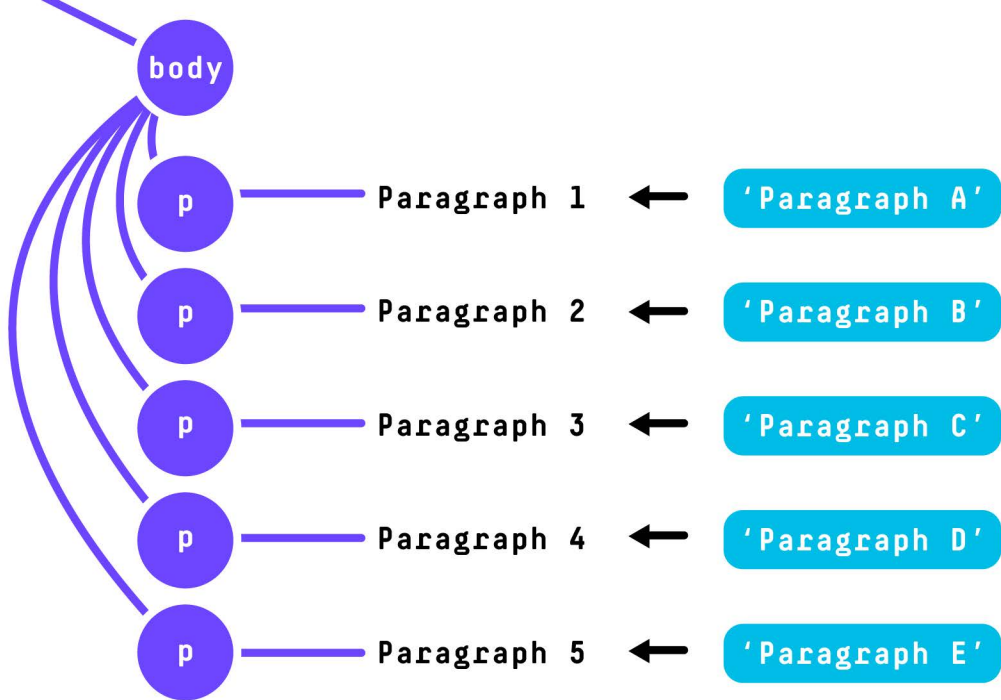


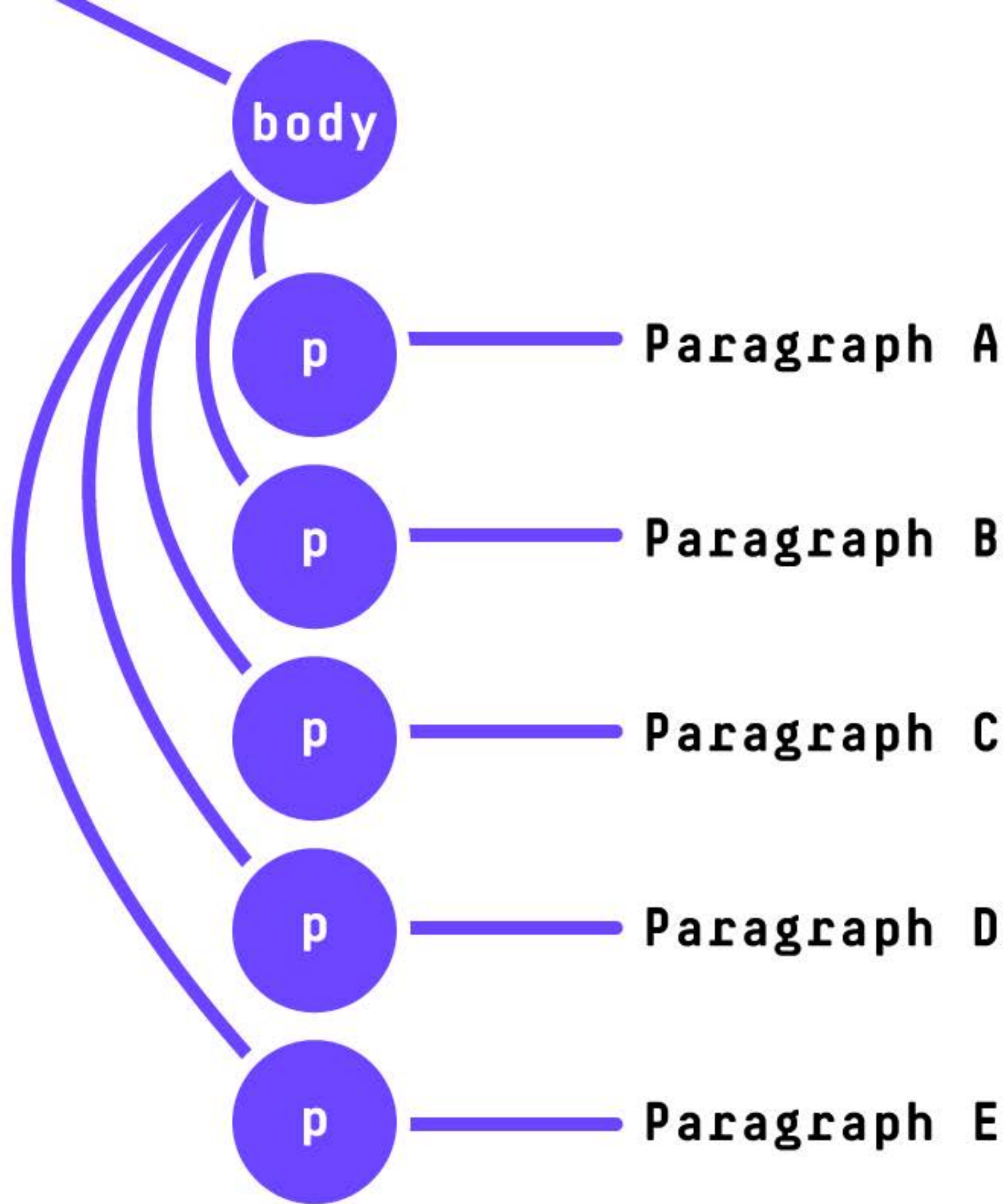
```
d3.select('body')  
  .selectAll('p')  
  .data(data)  
  .enter().append('p')  
  .text(function(d){  
    return d;  
  }));
```



```
var data2 = [  
    'Paragraph A',  
    'Paragraph B',  
    'Paragraph C',  
    'Paragraph D',  
    'Paragraph E'  
];
```

```
d3.select('body')  
  .selectAll('p')  
  .data(data2)  
  .text(function(d) {  
    return d;  
  });
```

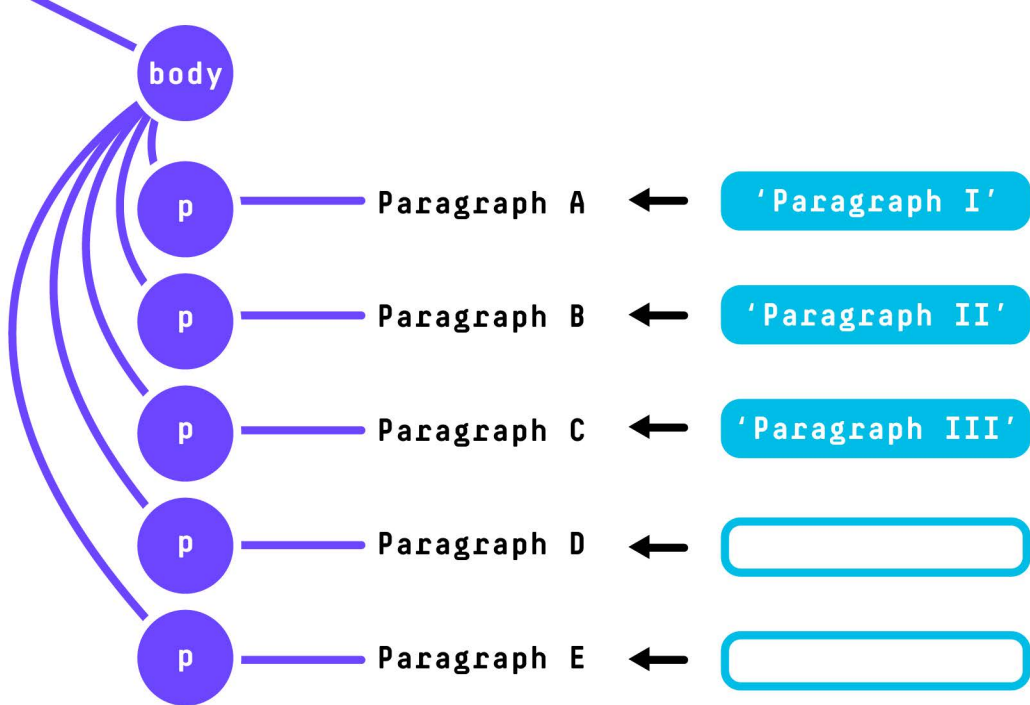


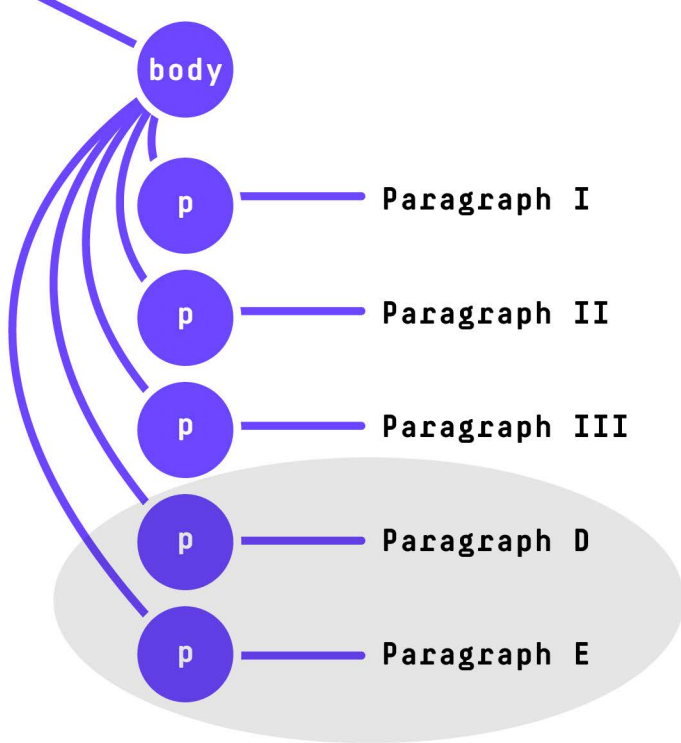


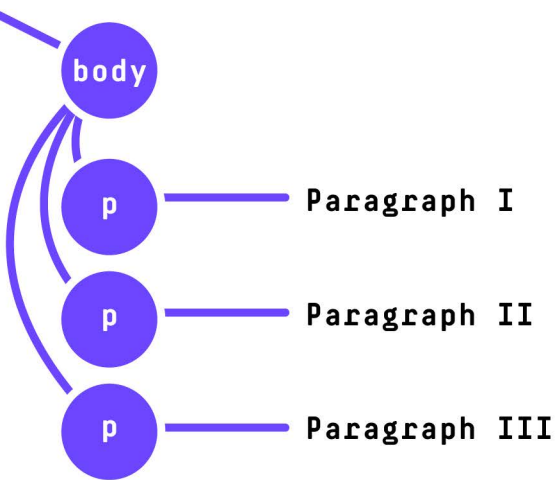
```
var data3 = [  
    'Paragraph I',  
    'Paragraph II',  
    'Paragraph III'  
];
```



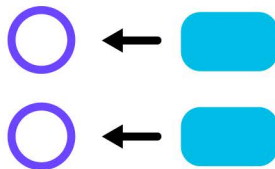
```
d3.select('body')  
  .selectAll('p')  
  .data(data3)  
  .text(function(d) {  
    return d;  
  });  
.exit().remove();
```



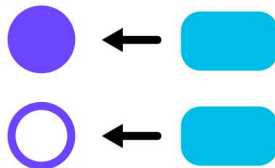




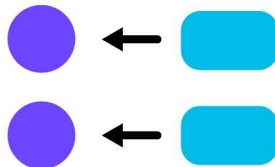
Enter



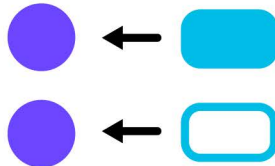
Enter + Update



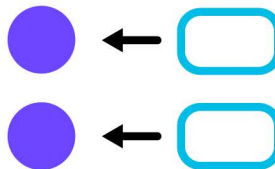
Update



Update + Exit

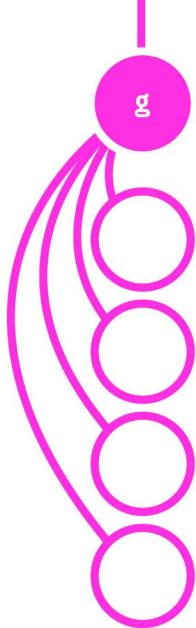


Exit



SVG and scales

```
▼ <body>
  <!-- -->
  <script src="http://d3js.org/d3.v3.min.js"></script>
  ▶ <script>...</script>
  <h2>Age distribution of the world</h2>
  <div class="play-button">▶ PLAY ALL YEARS</div>
  ▶ <div class="buttons-container">...</div>
  <div class="clearfix"></div>
  ▶ <div class="top-label age-label">...</div>
  ▶ <div class="top-label">...</div>
  <div class="clearfix"></div>
  ▼ <svg width="400" height="450">
    ▼ <g transform="translate(100,30)">
      ▼ <g class="bar">
        <rect x="0" y="0" width="31.98915873266561" height="20"></rect>
        <rect x="0" y="25" width="29.978938783615984" height="20"></rect>
        <rect x="0" y="50" width="42.472190164745925" height="20"></rect>
        <rect x="0" y="75" width="52.18772751844965" height="20"></rect>
        <rect x="0" y="100" width="69.18840097581722" height="20"></rect>
        <rect x="0" y="125" width="91.56715630054028" height="20"></rect>
        <rect x="0" y="150" width="104.10013172479633" height="20"></rect>
        <rect x="0" y="175" width="121.67341090782855" height="20"></rect>
        <rect x="0" y="200" width="135.60510105067053" height="20"></rect>
        <rect x="0" y="225" width="144.32162466356755" height="20"></rect>
        <rect x="0" y="250" width="148.55685046582514" height="20"></rect>
        <rect x="0" y="275" width="165.18730110948158" height="20"></rect>
```

2010

← age: '80 and up'
pop: 0.016

← age: '75 - 79'
pop: 0.015

← age: '70 - 74'
pop: 0.021

← age: '65 - 69'
pop: 0.026

