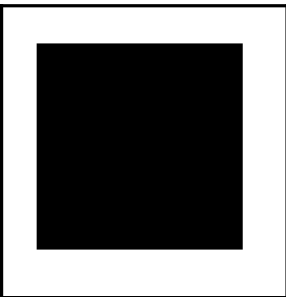
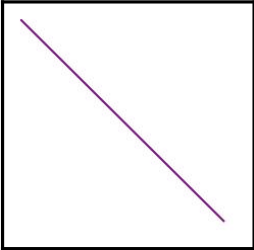
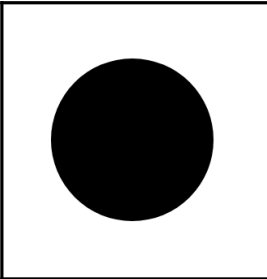
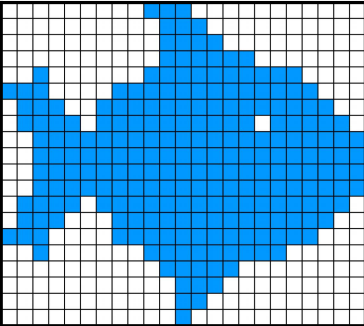
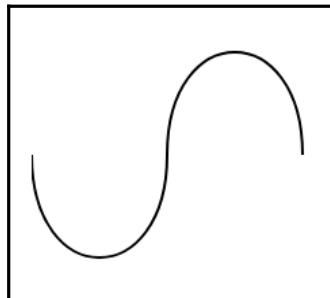
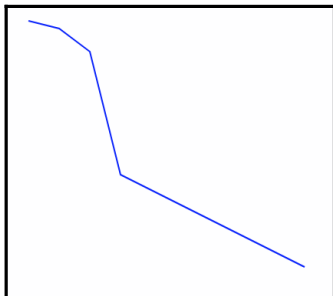
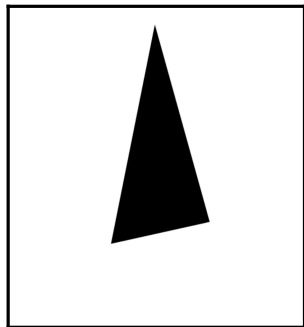
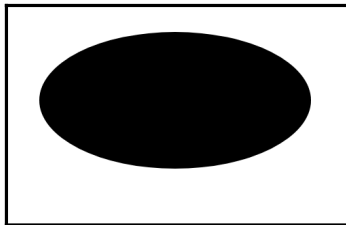
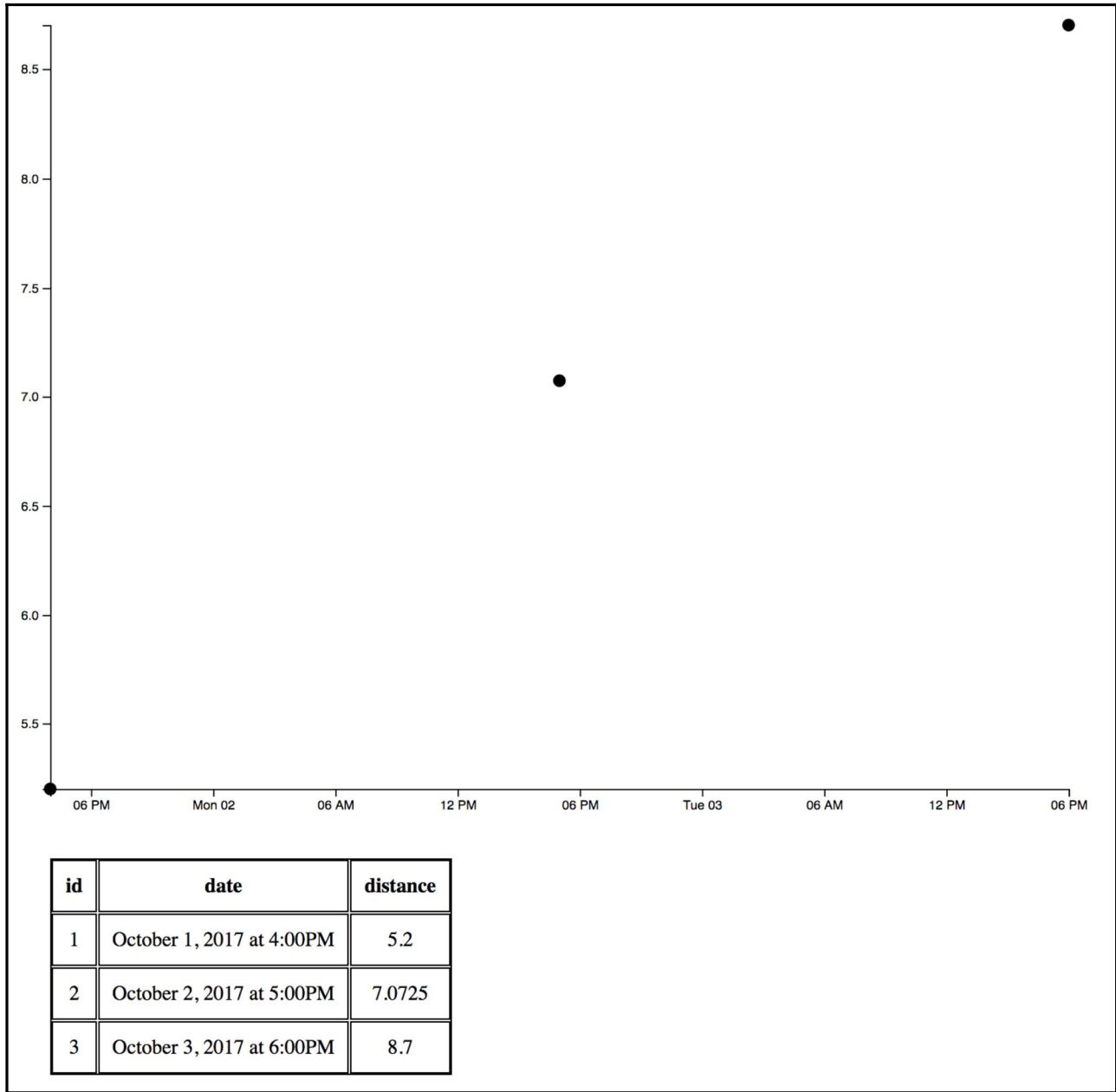
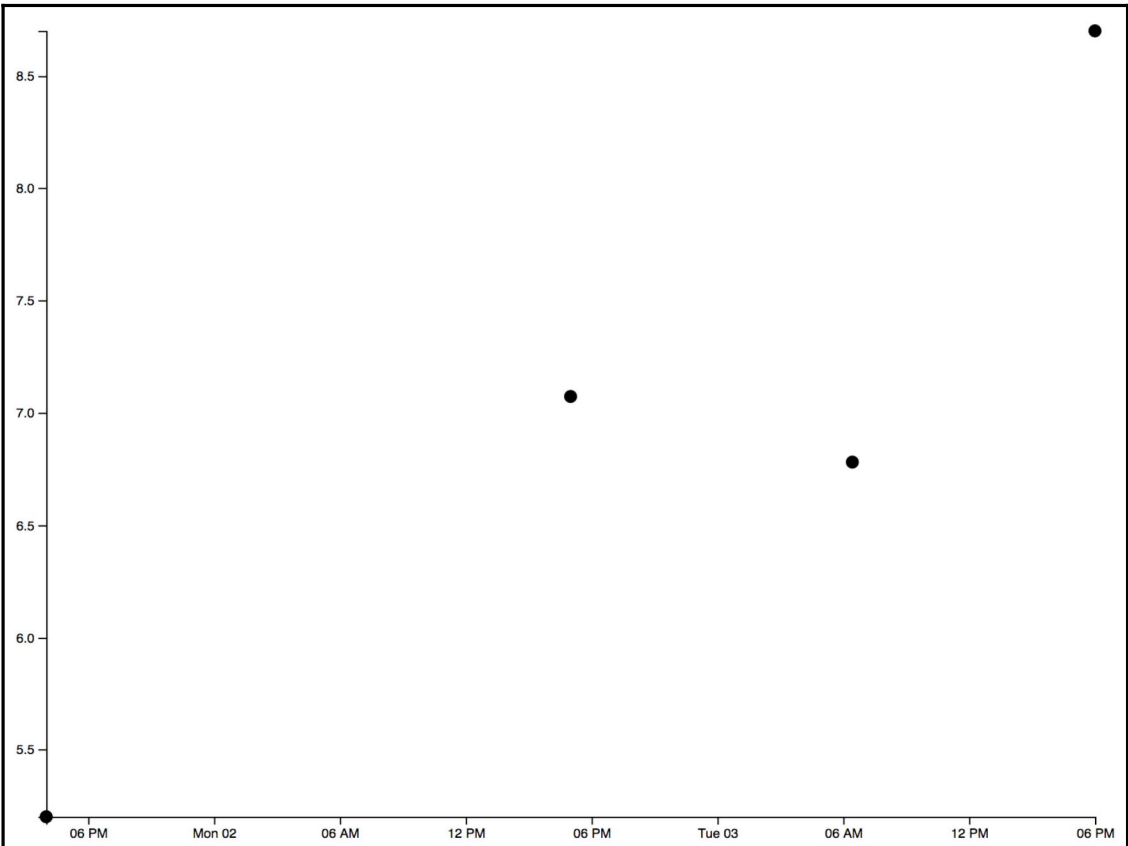


# Chapter 1: Getting Started with D3.js

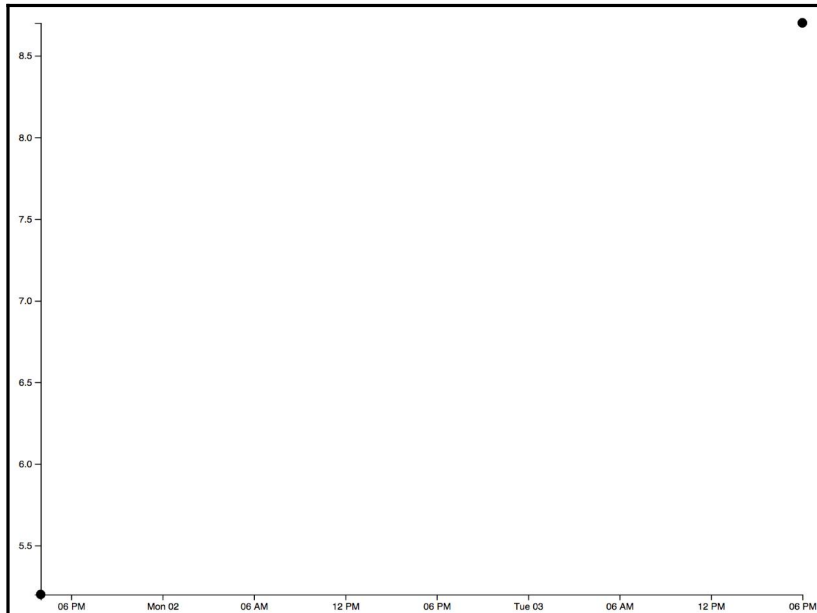








<b>id</b>	<b>date</b>	<b>distance</b>
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7
4	October 3, 2017 at 6:26AM	6.780833333333333



id	date	distance
1	October 1, 2017 at 4:00PM	5.2
3	October 3, 2017 at 6:00PM	8.7

Elements Console Sources Network Perform

```

<!DOCTYPE html>
<html>
  <head>_</head>
  <body>
    <svg style="width: 800px; height: 600px;">
      <circle cy="600" cx="0"></circle>
      <circle cy="0" cx="800"></circle> == $0
      <circle cy="0" cx="800"></circle>
      <g fill="none" font-size="10" font-family="sans-se
        transform="translate(0,600)">_</g>
      <g fill="none" font-size="10" font-family="sans-se
    </svg>
    <table>_</table>
    <script src="d3.v5.min.js"></script>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>

```

html body svg circle

Styles Event Listeners DOM Breakpoints Properties Accessibility

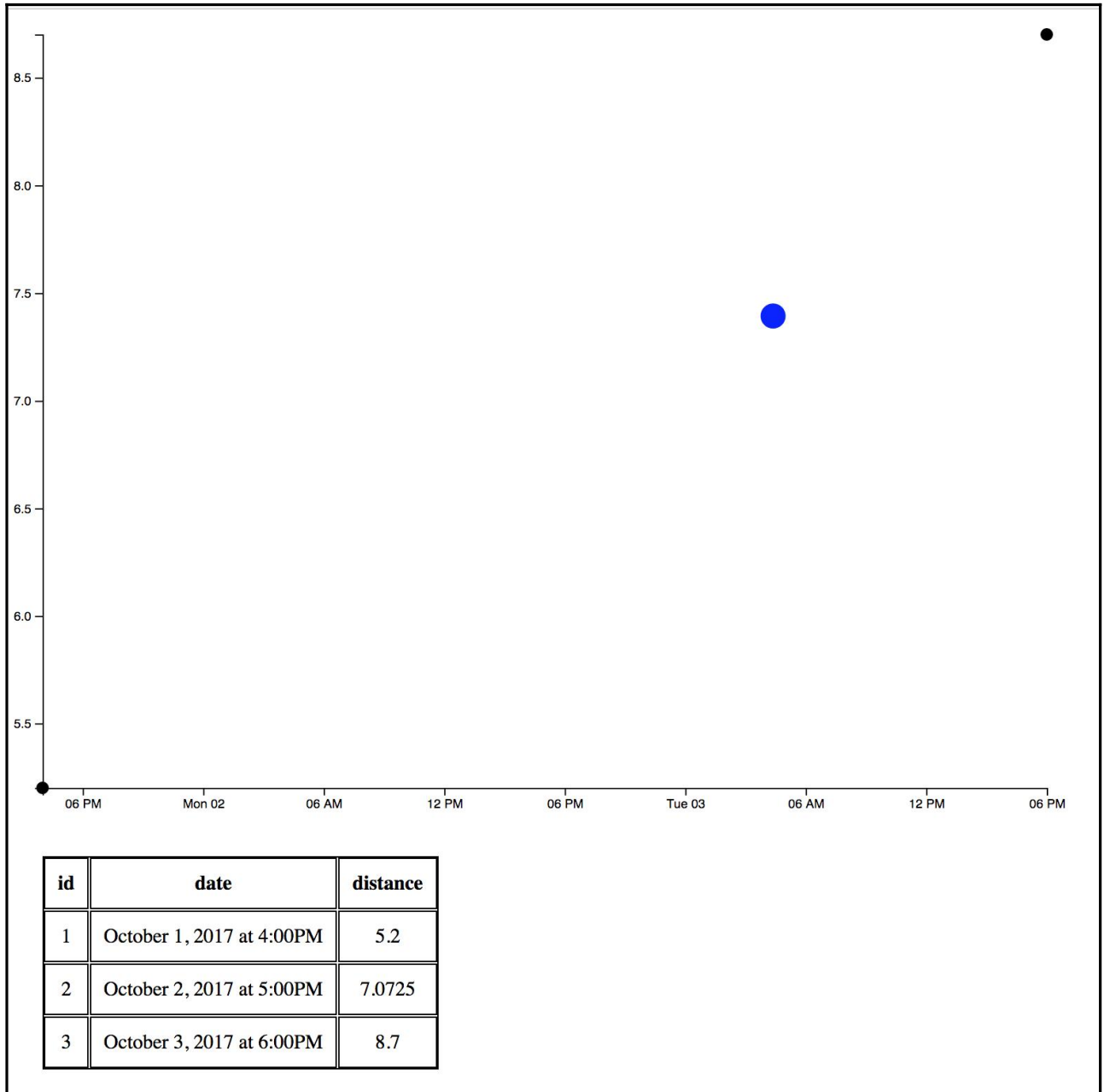
Filter :hov .cls +

element.style { }

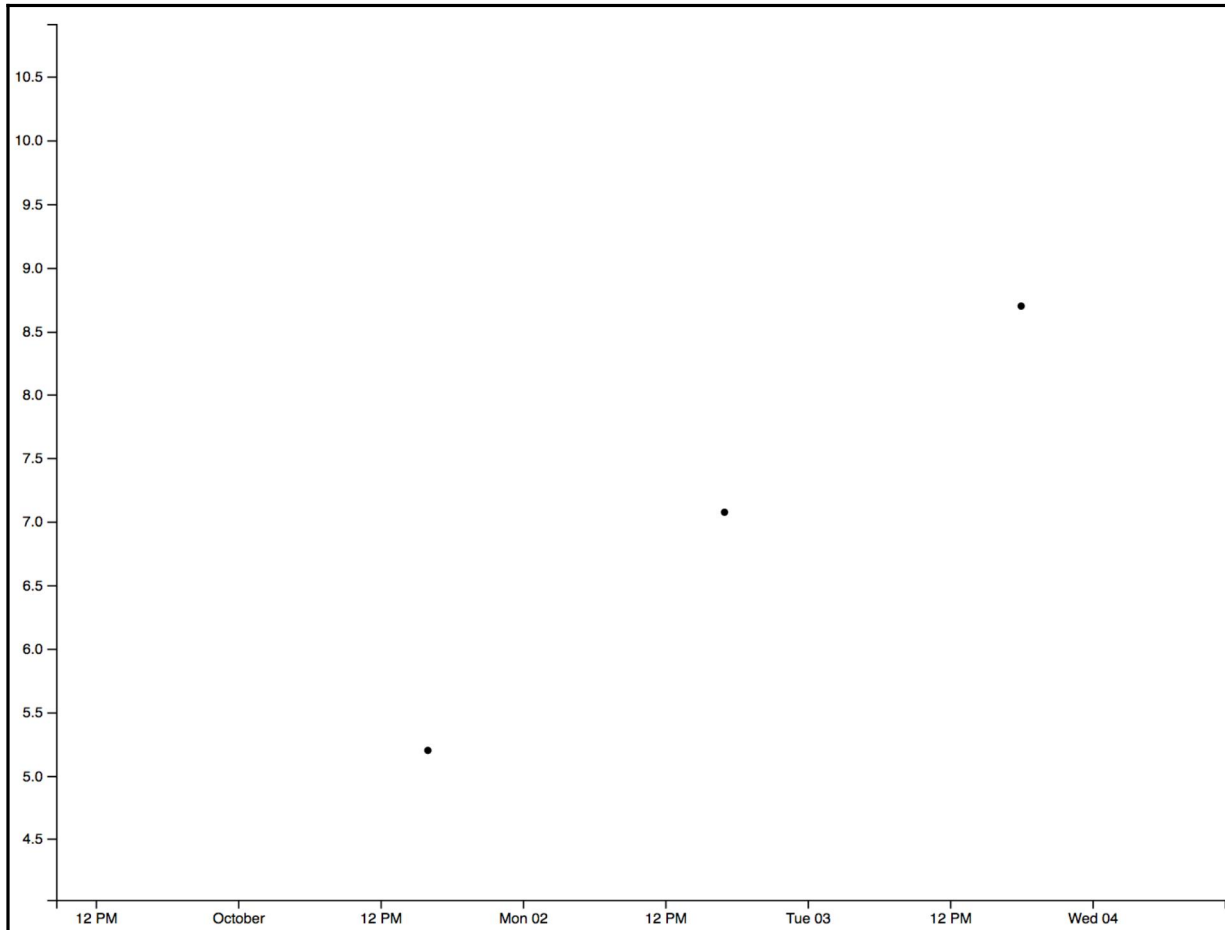
```

circle {
  r: 5;
  fill: black;
}

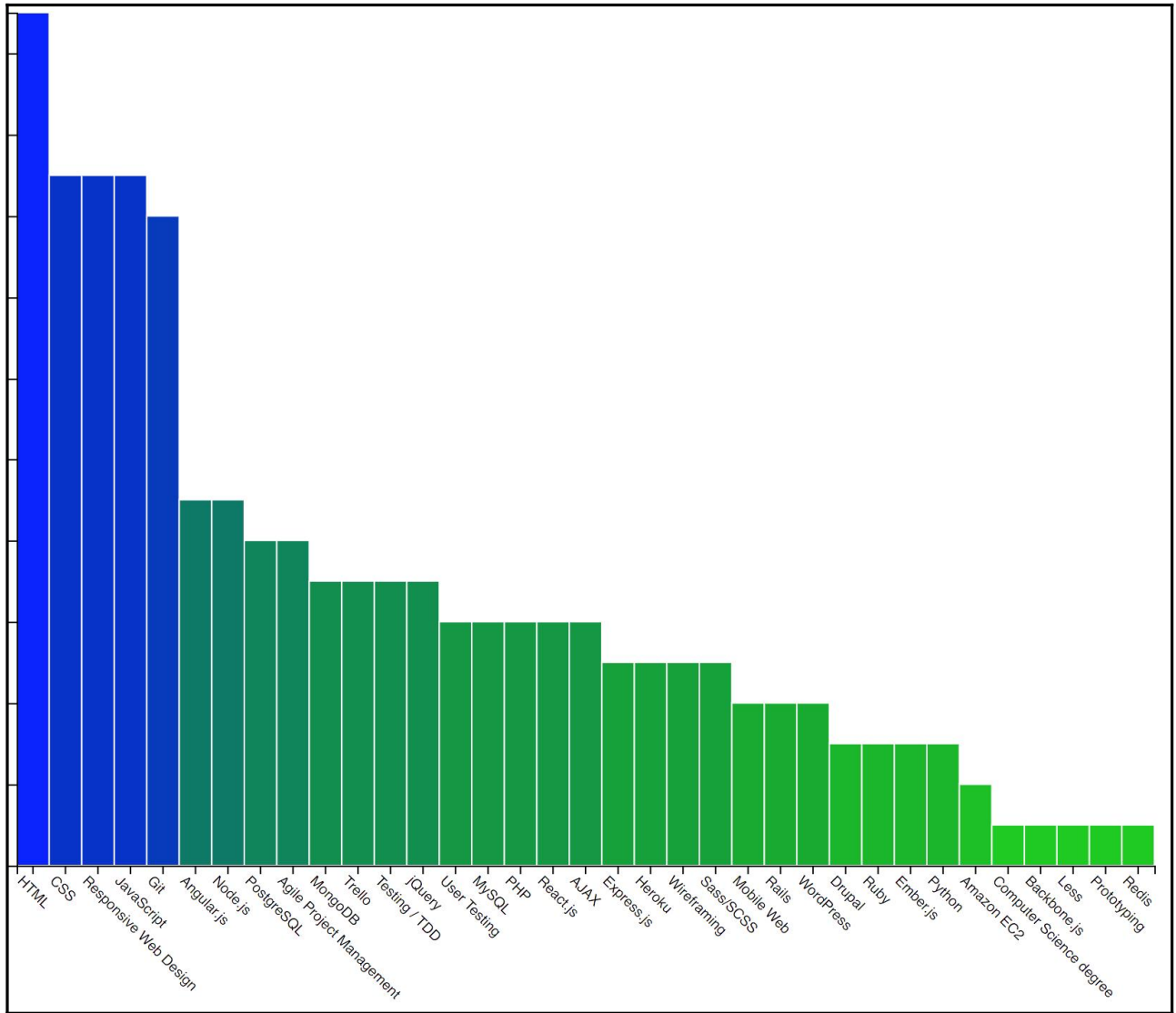
```



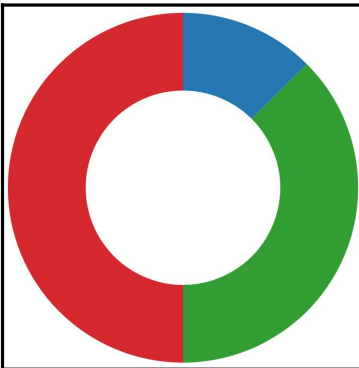
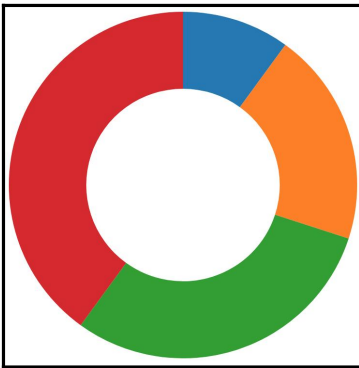
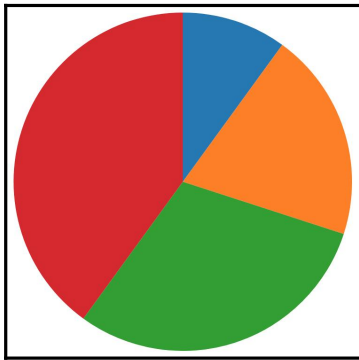
id	date	distance
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7

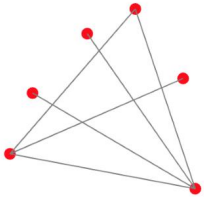


<b>id</b>	<b>date</b>	<b>distance</b>
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7










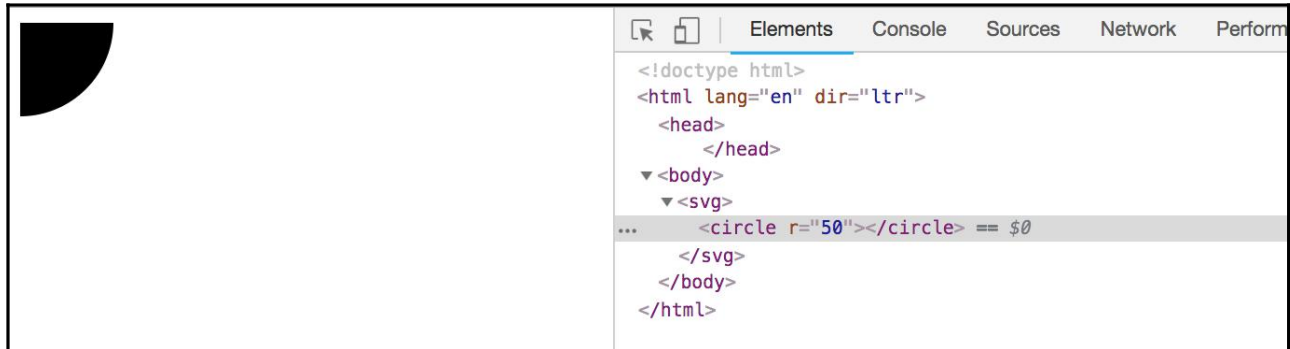
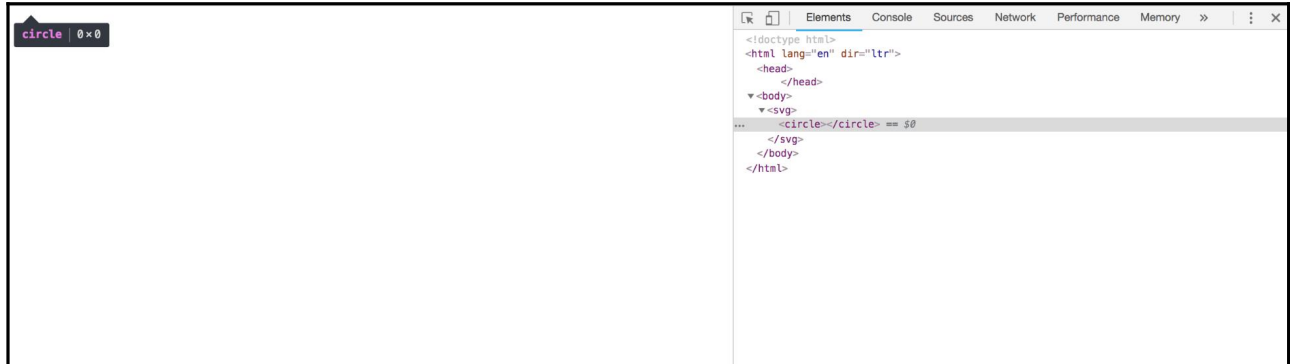
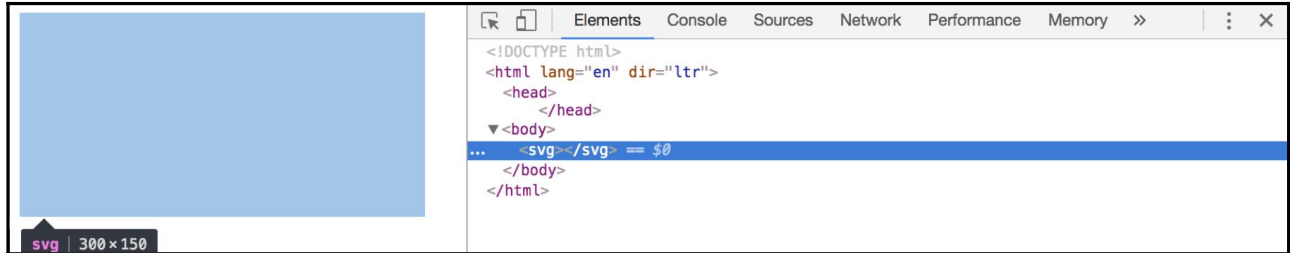
```
<!DOCTYPE html>
<html>
<head>...</head>
<body>
  <svg width="300" height="200">
    <g id="nodes">...</g>
    <g id="links">...</g>
    <script src="app.js" charset="utf-8"></script>
  </svg>
</body>
</html>
```

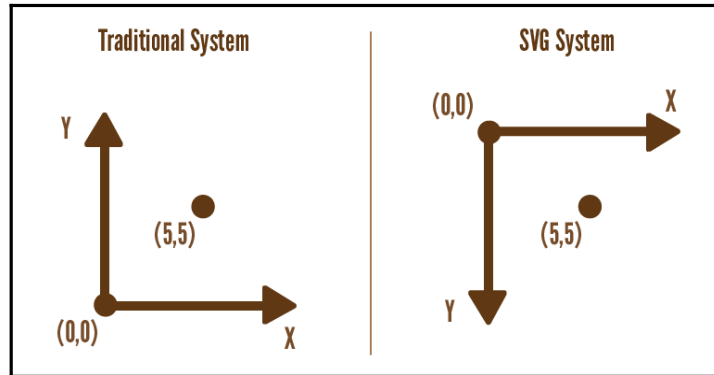


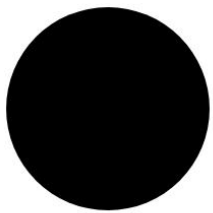
```
<svg width="960" height="490">...</svg>
```

Filter	Computed	Event Listeners
Filter	:hov .cls	
element.style	{	
svg[Attributes Style]	{	
width	960;	
height	490;	
	}	

# Chapter 2: Using SVG to Create Images Using Code





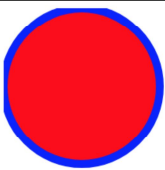


🔍 📄 | Elements | Console | Sources | Network

```

<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>
    </head>
  <body>
    <svg>
      <circle r="50" cx="50" cy="50">
...
        <circle>
          </circle> == $0
        </circle>
      </svg>
    </body>
  </html>

```

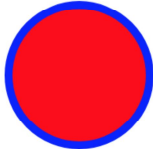


🔍 📄 | Elements | Console | Sources | Network | Performance | Memory | Application

```


<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>
    </head>
  <body>
    <svg>
      <circle r="50" cx="50" cy="50" fill="red" stroke="blue" stroke-width="5">
...
        <circle>
          </circle> == $0
        </circle>
      </svg>
    </body>
  </html>

```



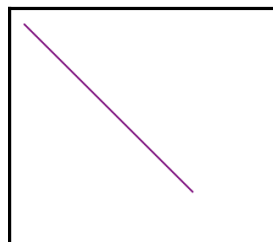
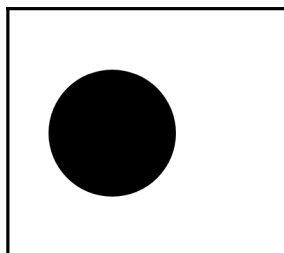
Elements Console Sources Network Performance Memory Application

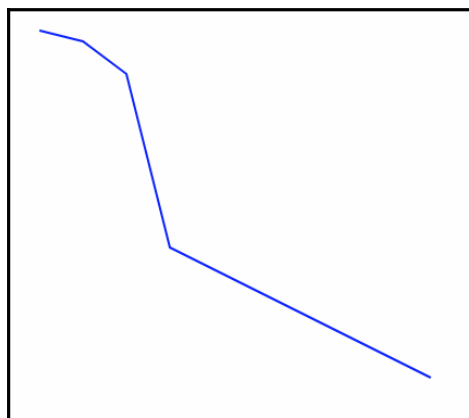
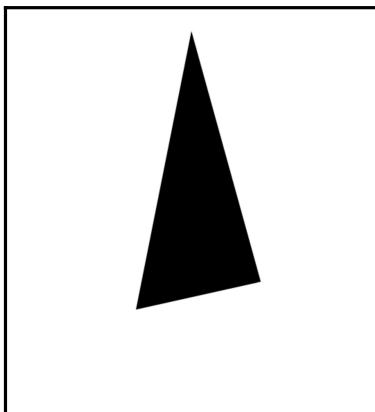
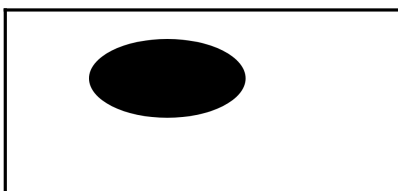
```
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>
  </head>
  <body>
    <svg>
      <circle r="45" cx="50" cy="50" fill="red" stroke="blue" stroke-width="5">
    </circle>
  </svg>
</body>
</html>
```

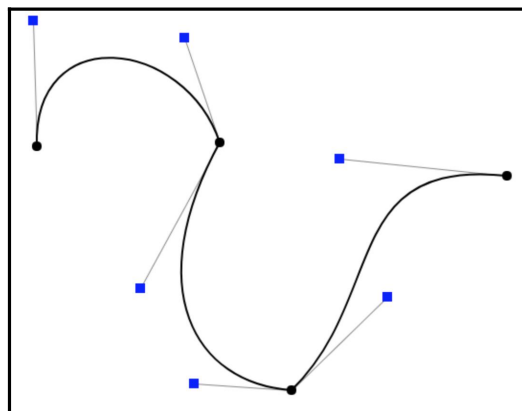
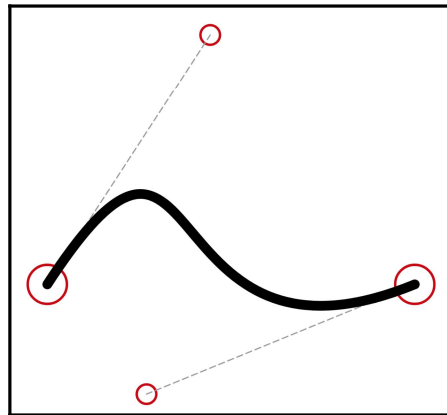
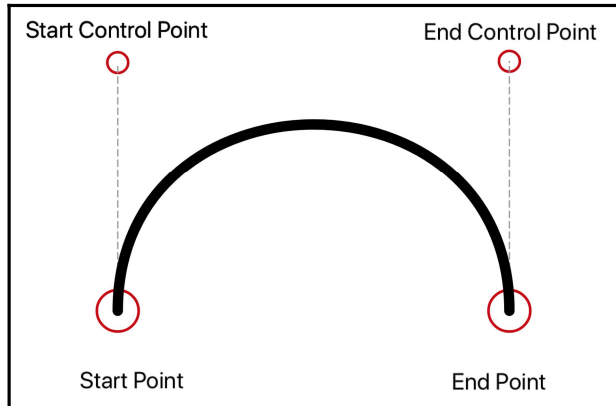


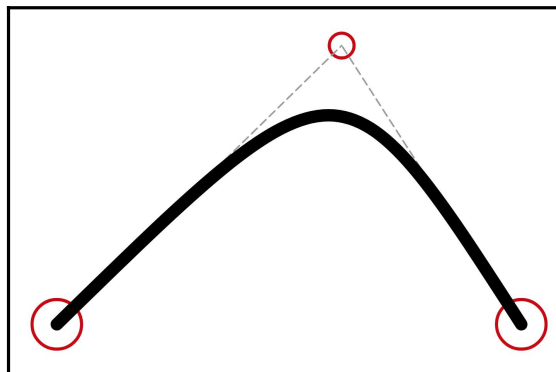
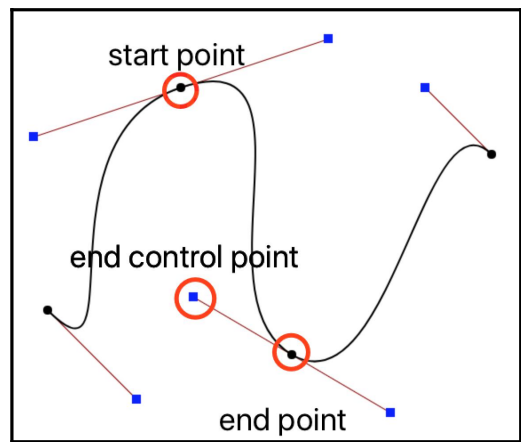
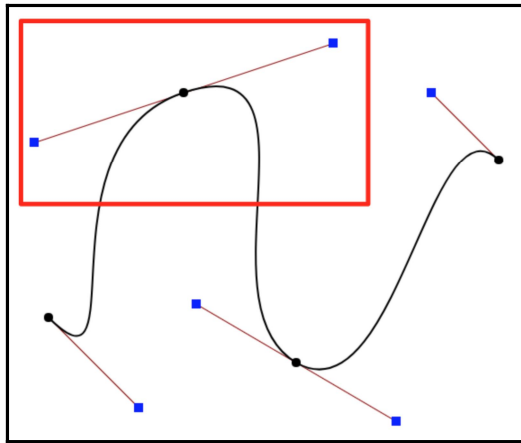
Elements Console Sources Network

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>...</head>
  <body>
    <svg>
      <circle></circle>
    </svg>
  </body>
</html>
```

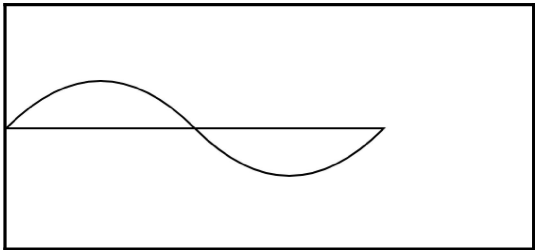
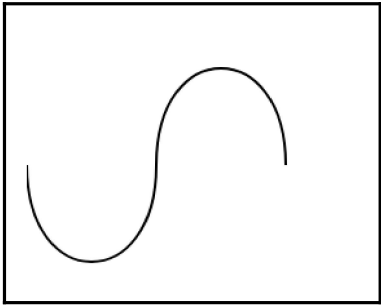
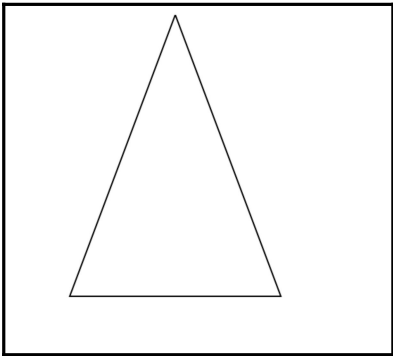
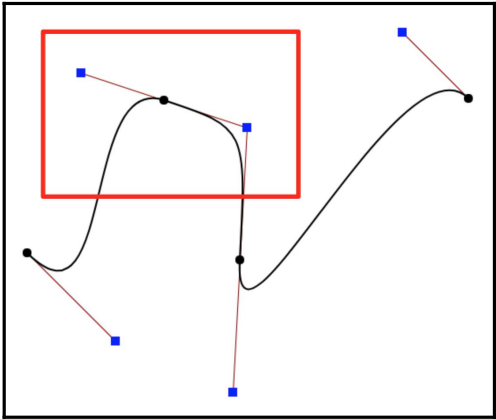


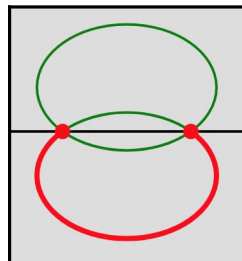
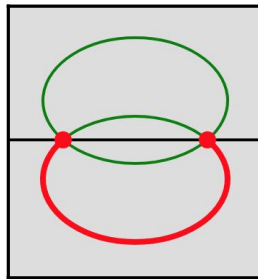
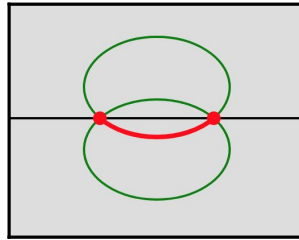
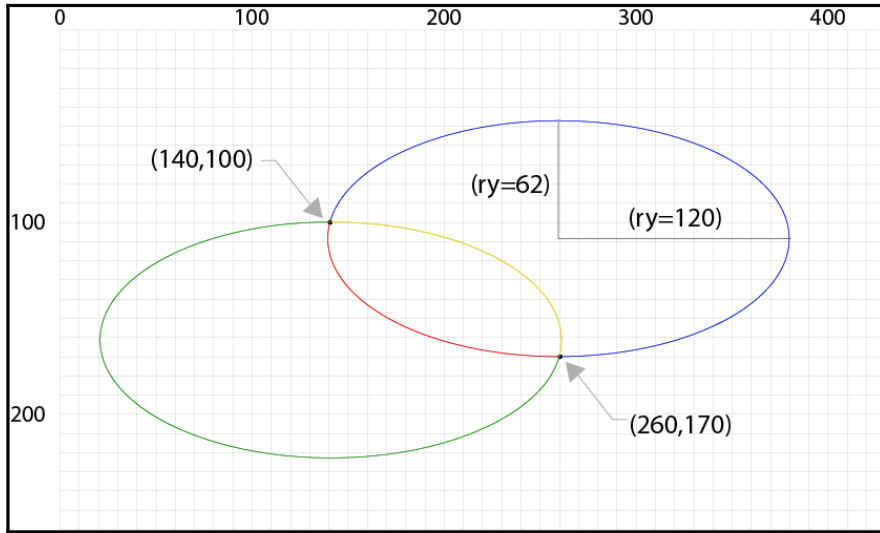


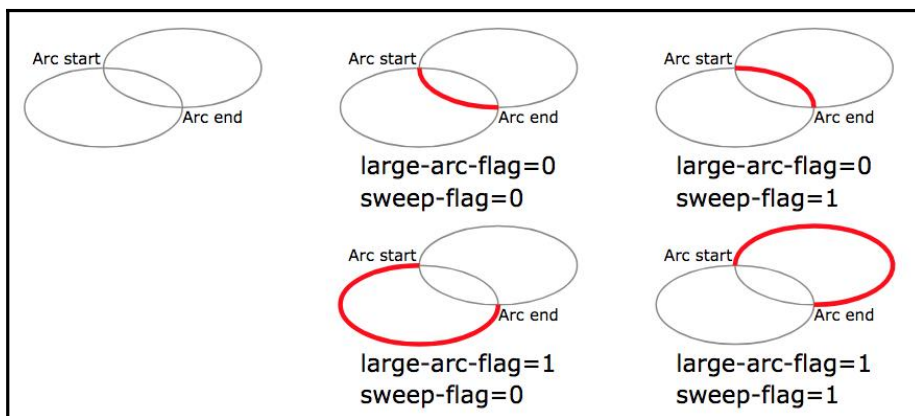
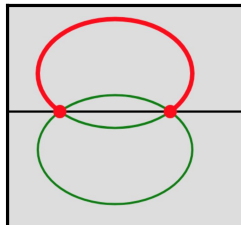






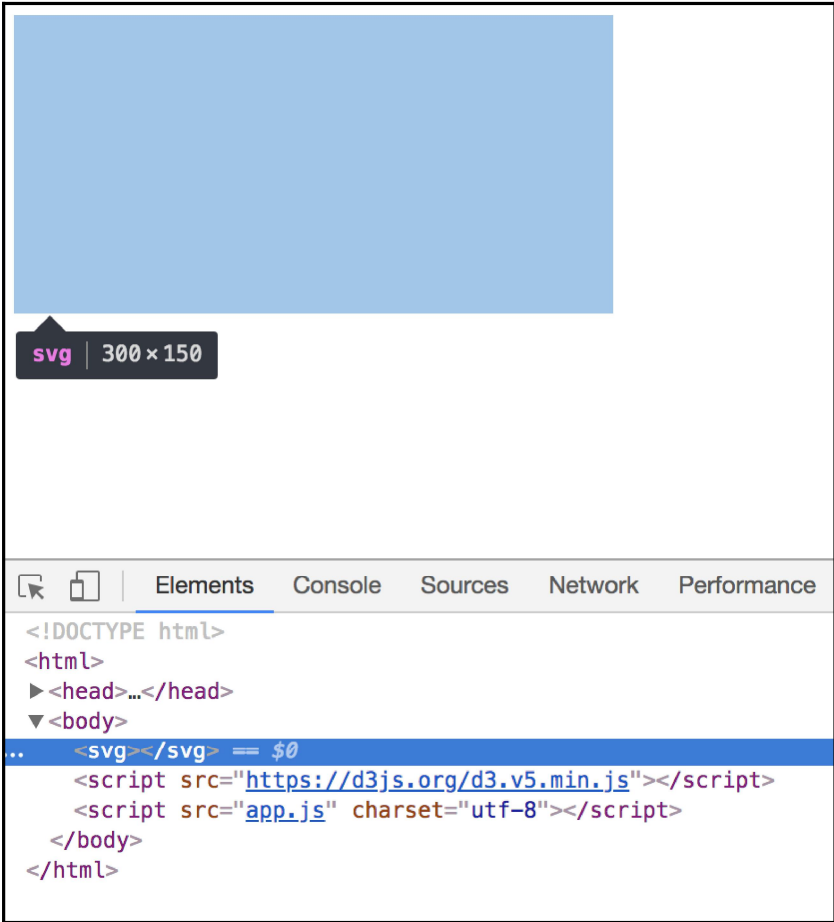






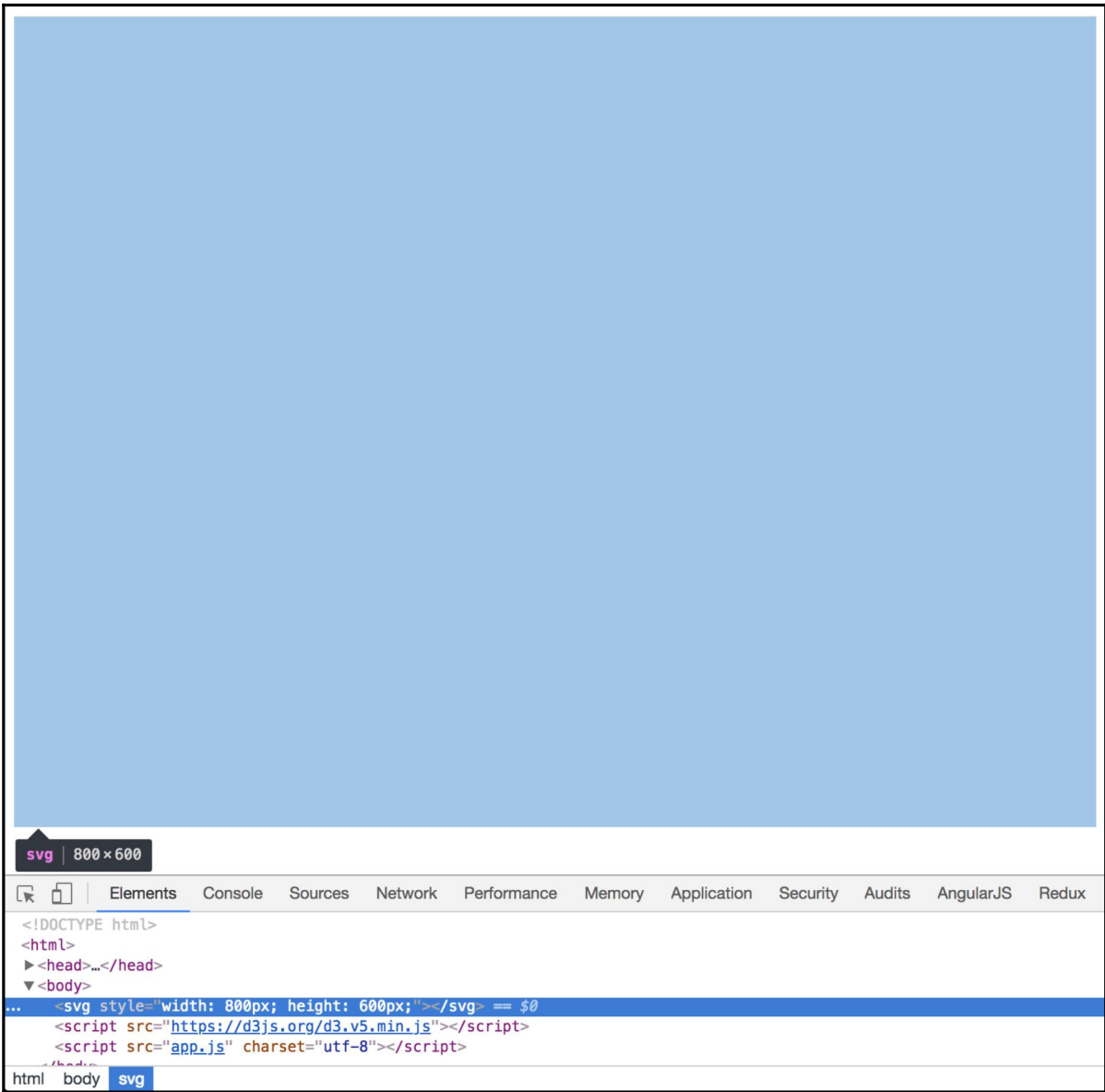
# Chapter 3: Building an Interactive Scatter Plot

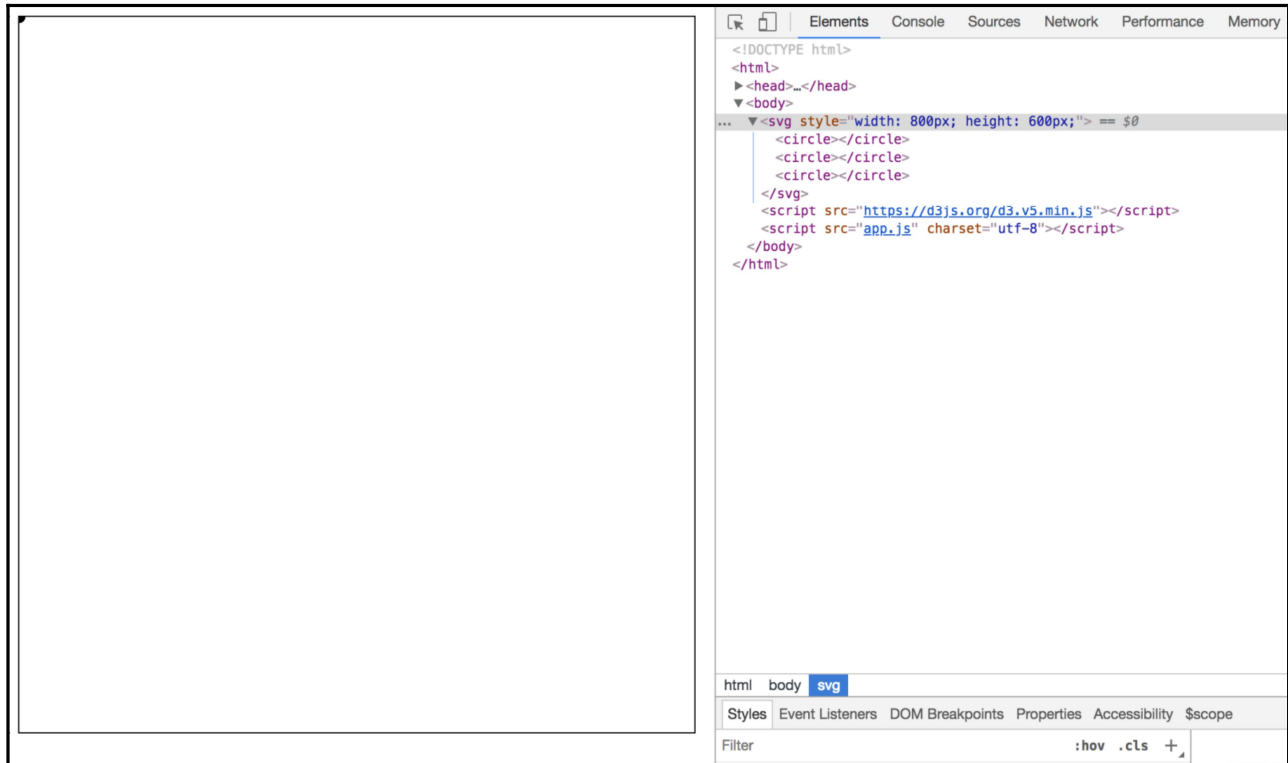
```
this works app.js:1  
app.js:2  
▼ Object 3  
▶ active: f (t,n)  
▶ arc: f ()  
▶ area: f Mf()  
▶ areaRadial: f Cf()  
▶ ascending: f n(t,n)  
▶ axisBottom: f (t)  
▶ axisLeft: f (t)  
▶ axisRight: f (t)  
▶ axisTop: f (t)  
▶ bisect: f (n,e,r,i)  
▶ bisectLeft: f (n,e,r,i)  
▶ bisectRight: f (n,e,r,i)  
▶ bisector: f e(t)  
▶ blob: f (t,n)  
▶ brush: f ()  
▶ brushSelection: f (t)  
▶ brushX: f ()  
▶ brushY: f ()  
▶ buffer: f (t,n)  
▶ chord: f ()  
▶ clientPoint: f dt(t,n)  
▶ cluster: f ()  
▶ color: f kt(t)  
▶ contourDensity: f ()  
▶ contours: f Me()  
▶ create: f (t)  
▶ creator: f C(t)  
▶ cross: f (t,n,e)  
▶ csv: f (n,e,r)  
▶ csvFormat: f (n,e)  
▶ csvFormatRows: f (t)  
▶ csvParse: f (t,e)  
▶ csvParseRows: f n(t,n)  
▶ cubehelix: f Zt(t,n,e,r)
```



The image displays a browser's developer tool interface. At the top, a blue rectangular element is visible on the page. A tooltip points to this element, showing the text "svg | 300 x 150". Below the page view, the developer tool's "Elements" panel is open, showing the following HTML structure:

```
<!DOCTYPE html>
<html>
  <head>...</head>
  <body>
    .. <svg></svg> == $0
      <script src="https://d3js.org/d3.v5.min.js"></script>
      <script src="app.js" charset="utf-8"></script>
    </body>
  </html>
```

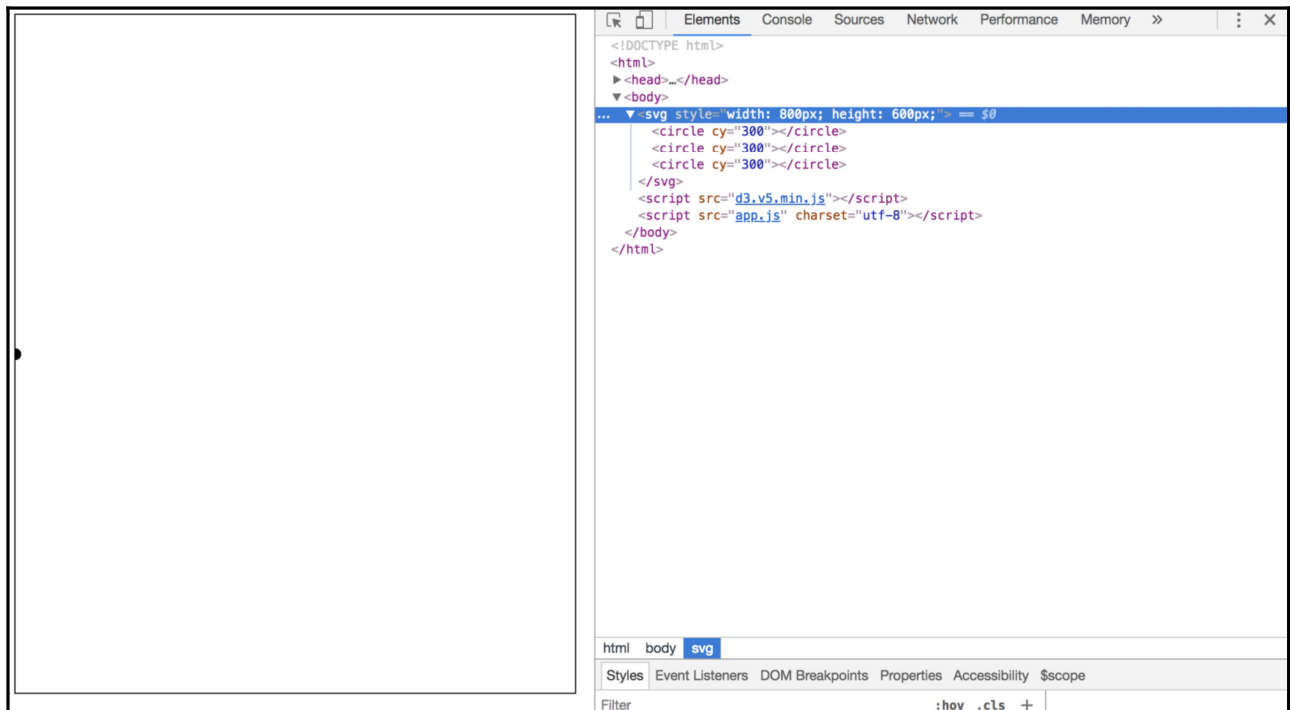
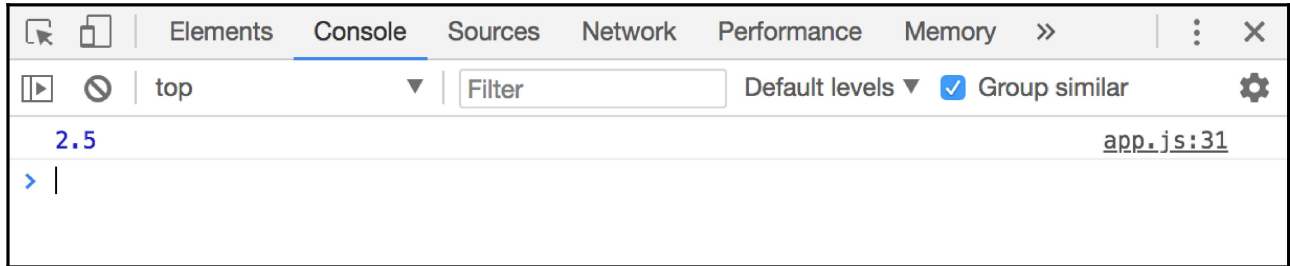
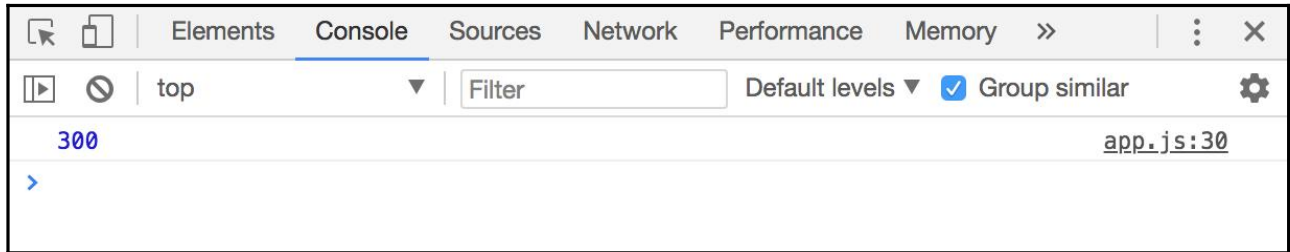




```
var yScale = d3.scaleLinear(); //
yScale.range([HEIGHT, 0]); //set
yScale.domain([0, 10]); //set the
```

```
var yScale = d3.scaleLinear(); //create the scale
yScale.range([HEIGHT, 0]); //set the visual range (e.g. 600 to 0)
yScale.domain([0, 10]); //set the data domain (e.g. 0 to 10)
```

- ▶ (2) [0, 10]
- ▶ (2) [600, 0]

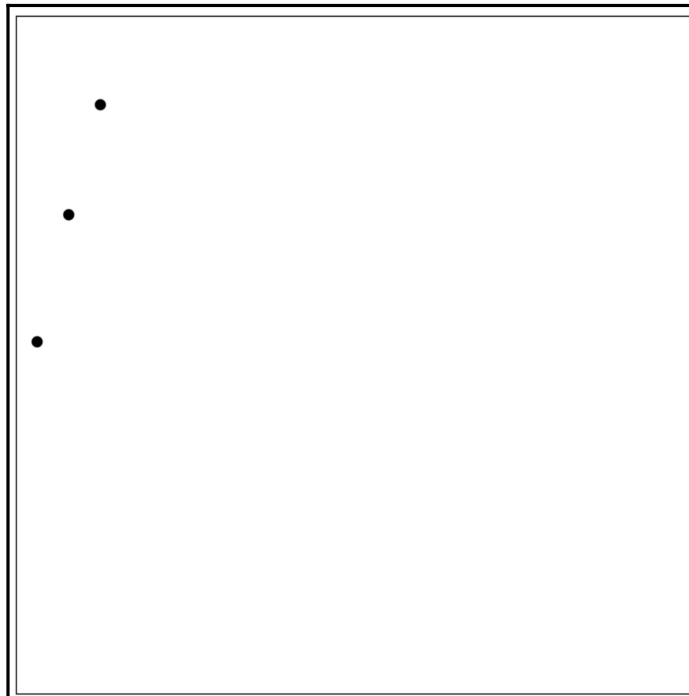




```
<!DOCTYPE html>
<html>
  <head>_</head>
  <body>
    <svg style="width: 800px; height: 600px;"> == $0
      <circle cy="288"></circle>
      <circle cy="175.65000000000003"></circle>
      <circle cy="78.00000000000011"></circle>
    </svg>
    <script src="d3.v5.min.js"></script>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>
```

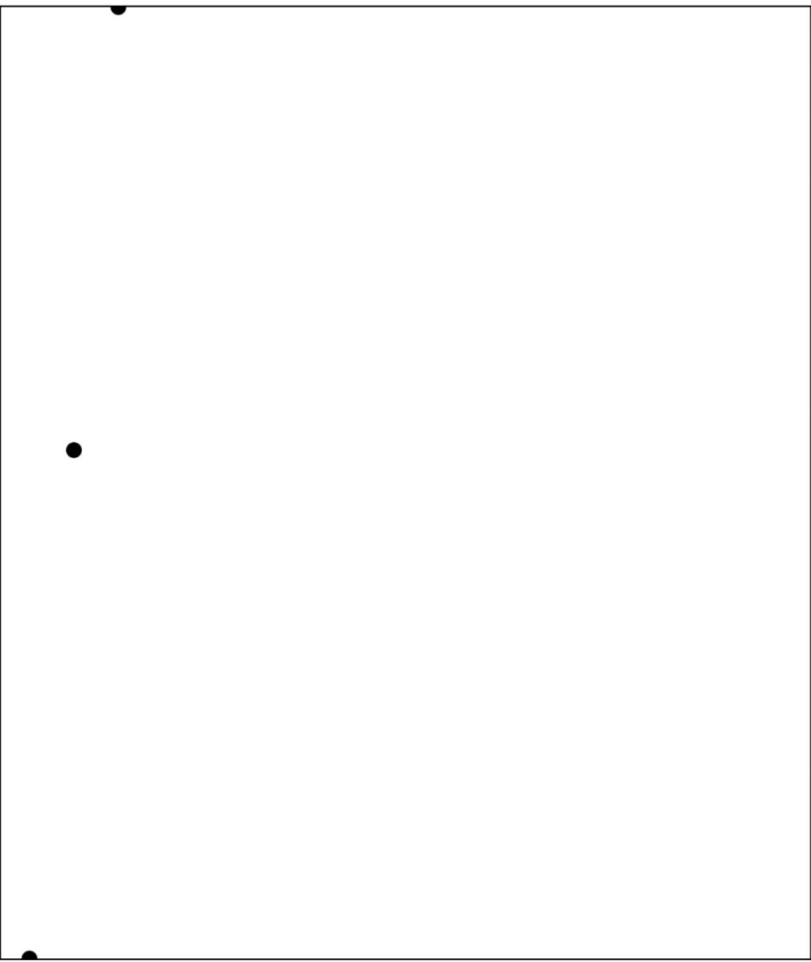
[719.2145862552595](#)  
Sun Oct 15 2017 20:30:00 GMT-0700 (PDT)  
> |

Tue Oct 03 2017 18:00:00 GMT-0700 (PDT)  
May24, 2018 at 3:54PM  
> |



```
Elements Console Sources Network Performance Memory >>
<!DOCTYPE html>
<html>
  <head>_</head>
  <body>
    ... ▼ svg style="width: 800px; height: 600px;" == $0
      <circle cy="288" cx="17.952314165497896"></circle>
      <circle cy="175.65000000000003" cx="46.00280504908836"></circle>
      <circle cy="78.00000000000011" cx="74.05329593267882"></circle>
    </svg>
    <script src="d3.v5.min.js"></script>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>

html body svg
  Styles Event Listeners DOM Breakpoints Properties Accessibility $scope
```

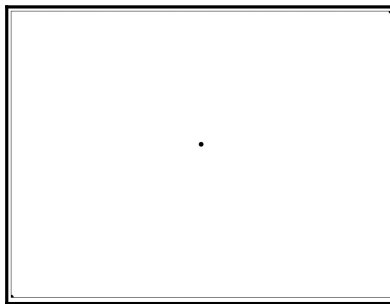


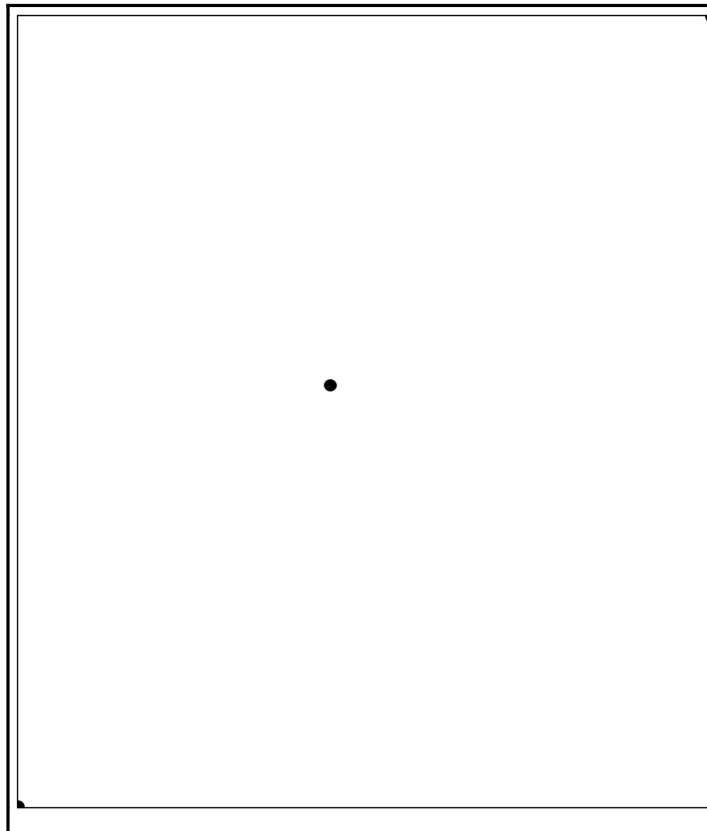
Elements Console Sources

top Filter

```
▼ (2) [5.2, 8.7] ⓘ  
  0: 5.2  
  1: 8.7  
  length: 2  
  ▶ __proto__: Array(0)
```

>



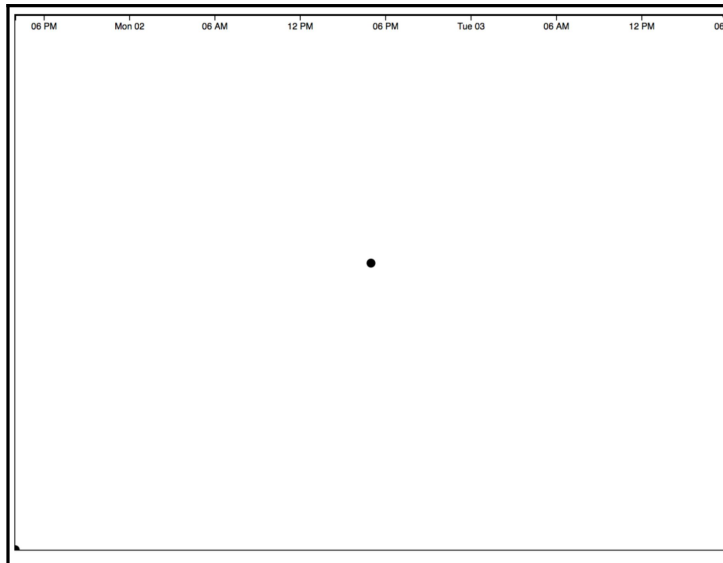


```
Elements Console Sources Network Performance
<!DOCTYPE html>
<html>
  <head>...</head>
  <body>
    ... <svg style="width: 800px; height: 600px;" == $0
      <circle cy="600" cx="0"></circle>
      <circle cy="279" cx="400"></circle>
      <circle cy="0" cx="800"></circle>
    </svg>
    <script src="d3.v5.min.js"></script>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>
```

html body **svg**

Styles Event Listeners DOM Breakpoints Properties Accessibility \$scope

Filter :hov .cls +



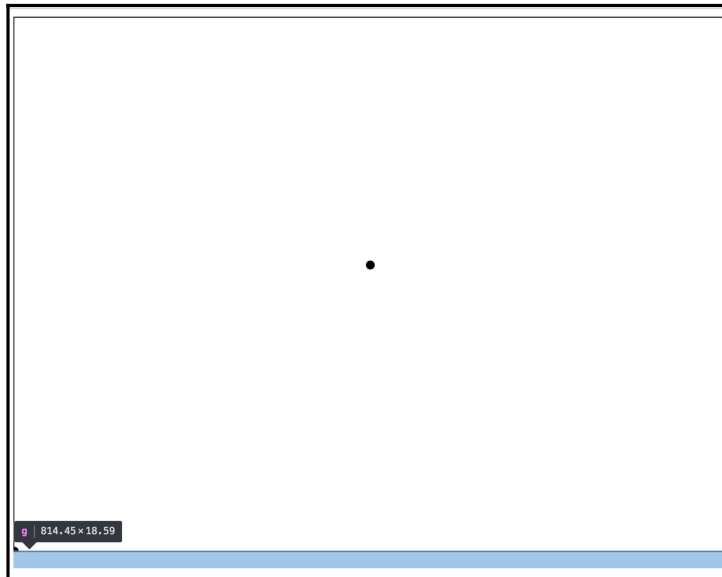
```
Elements Console Sources Network Performance Memory >>
<head>...</head>
<body>
  ... <svg style="width: 800px; height: 600px;" == $0
    <circle cy="600" cx="0"></circle>
    <circle cy="279" cx="400"></circle>
    <circle cy="0" cx="800"></circle>
    <g fill="none" font-size="10" font-family="sans-serif" text-anchor="middle">
      <path class="domain" stroke="#000" d="M0,5.6V0.5H800,5V6"></path>
      <g class="tick" opacity="1" transform="translate(32.5,0)">
        <line stroke="#000" y2="6"></line>
        <text fill="#000" y="9" dy="0.71em">06 PM</text>
      </g>
      <g class="tick" opacity="1" transform="translate(128.5,0)">
        <line stroke="#000" y2="6"></line>
        <text fill="#000" y="9" dy="0.71em">Mon 02</text>
      </g>
      <g class="tick" opacity="1" transform="translate(224.50000000000003,0)">
        <line stroke="#000" y2="6"></line>
        <text fill="#000" y="9" dy="0.71em">06 AM</text>
      </g>
      <g class="tick" opacity="1" transform="translate(320.5,0)">
        <line stroke="#000" y2="6"></line>
        <text fill="#000" y="9" dy="0.71em">12 PM</text>
      </g>
      <g class="tick" opacity="1" transform="translate(416.5,0)">
        <line stroke="#000" y2="6"></line>
        <text fill="#000" y="9" dy="0.71em">06 PM</text>
      </g>
      <g class="tick" opacity="1" transform="translate(512.5,0)"></g>
      <g class="tick" opacity="1" transform="translate(608.5,0)"></g>
      <g class="tick" opacity="1" transform="translate(704.5,0)"></g>
      <g class="tick" opacity="1" transform="translate(800.5,0)"></g>
    </g>
  </svg>
  <script src="d3.v5.min.js"></script>
  <script src="app.js" charset="utf-8"></script>
</body>
html body svg

Styles Event Listeners DOM Breakpoints Properties Accessibility $scope



Filter :hov .cls +


```

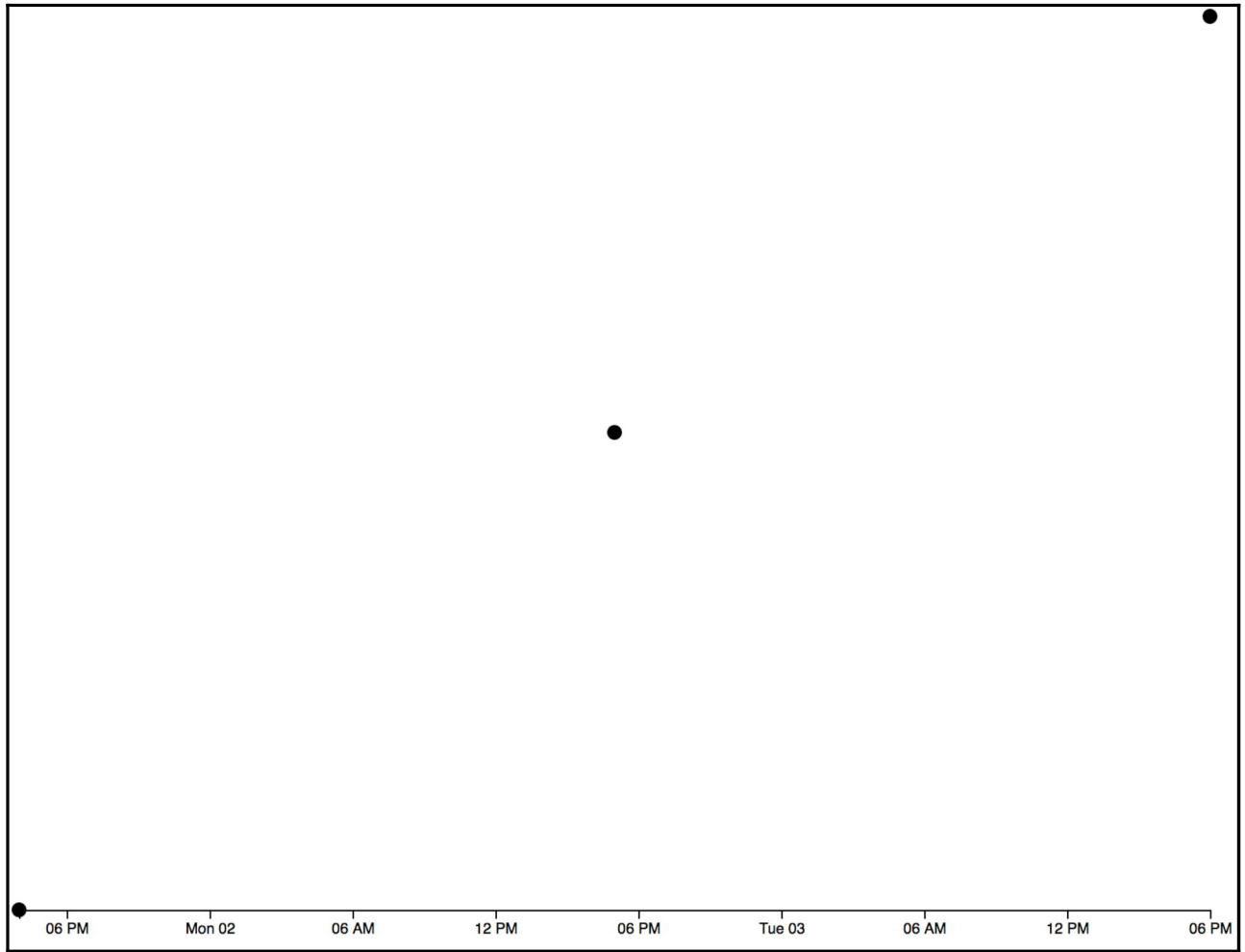


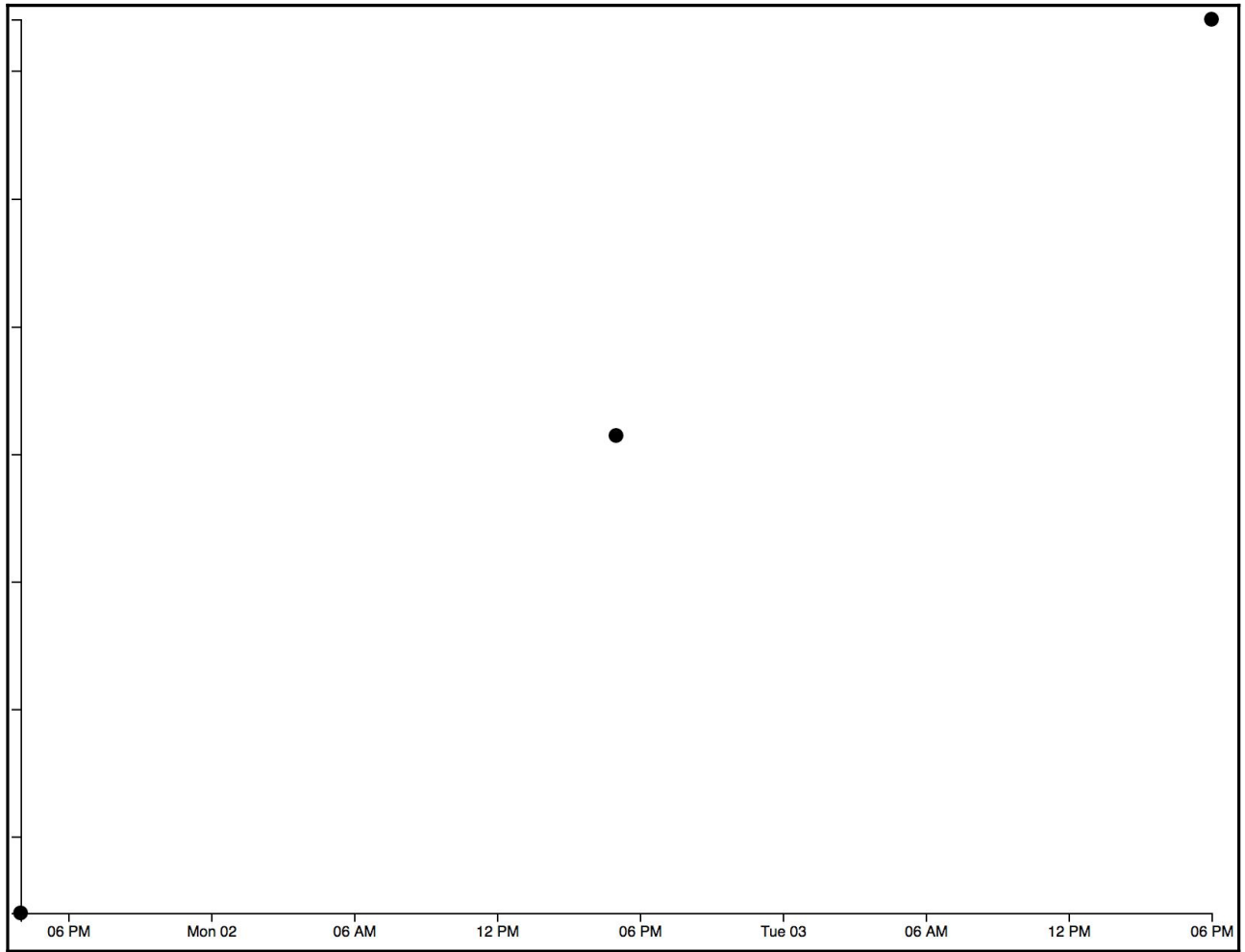
```
Elements Console Sources Network Performance Memory >>
<!DOCTYPE html>
<html>
  <head>...</head>
  <body>
    <svg style="width: 800px; height: 600px;">
      <circle cy="600" cx="0"></circle>
      <circle cy="279" cx="400"></circle>
      <circle cy="0" cx="800"></circle>
      <g fill="none" font-size="10" font-family="sans-serif" text-anchor="middle"
        transform="translate(0,600)">...</g>
        <path class="domain" stroke="#000" d="M0,5.6V0.5H800.5V6"></path>
        <g class="tick" opacity="1" transform="translate(32.5,0)">...</g>
        <g class="tick" opacity="1" transform="translate(128.5,0)">...</g>
        <g class="tick" opacity="1" transform="translate(224.50000000000003,0)">...</g>
        <g class="tick" opacity="1" transform="translate(320.5,0)">...</g>
        <g class="tick" opacity="1" transform="translate(416.5,0)">...</g>
        <g class="tick" opacity="1" transform="translate(512.5,0)">...</g>
        <g class="tick" opacity="1" transform="translate(608.5,0)">...</g>
        <g class="tick" opacity="1" transform="translate(704.5,0)">...</g>
        <g class="tick" opacity="1" transform="translate(800.5,0)">...</g>
      </g>
    </svg>
    <script src="d3.v5.min.js"></script>
    <script src="800.js" charset="utf-8"></script>
  </body>
</html>
```

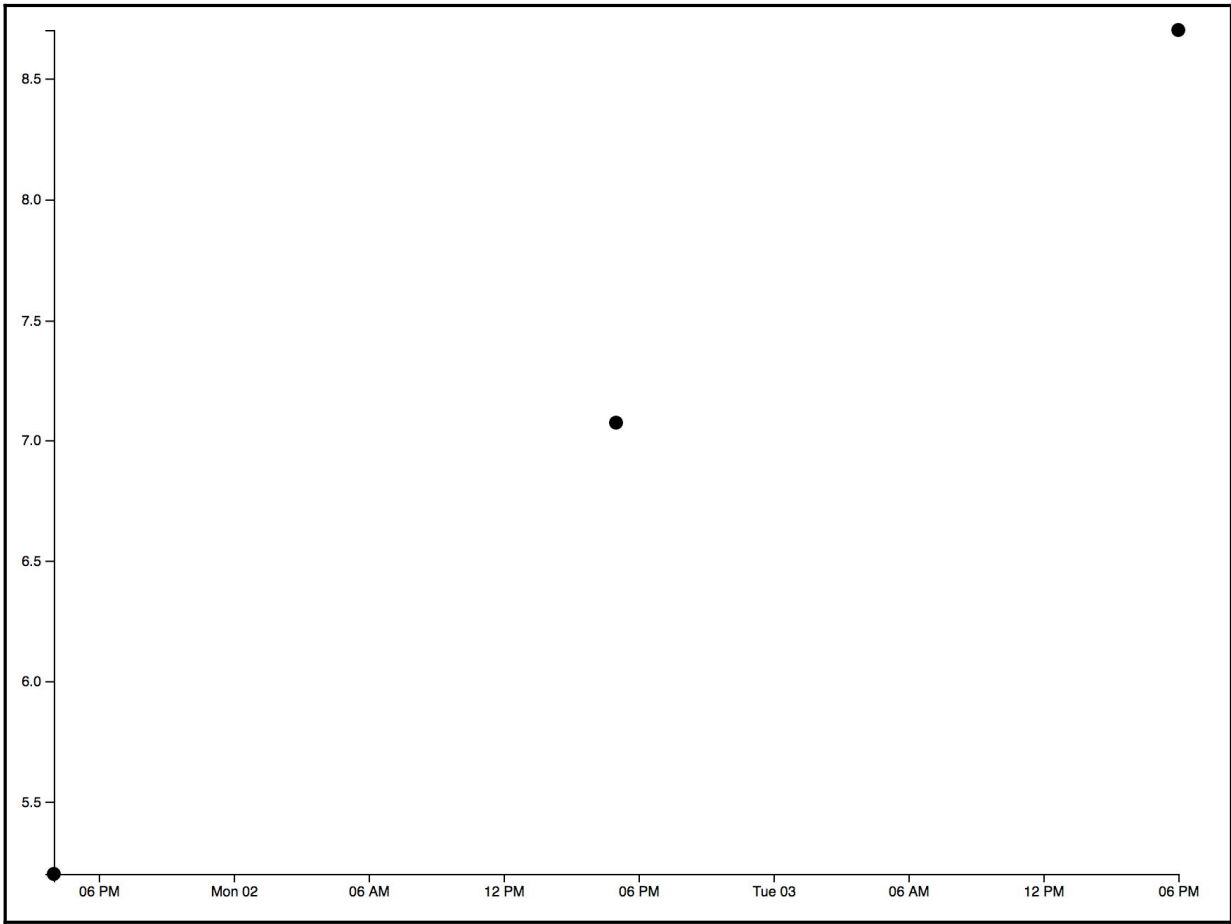
html body svg g

Styles Event Listeners DOM Breakpoints Properties Accessibility Scope

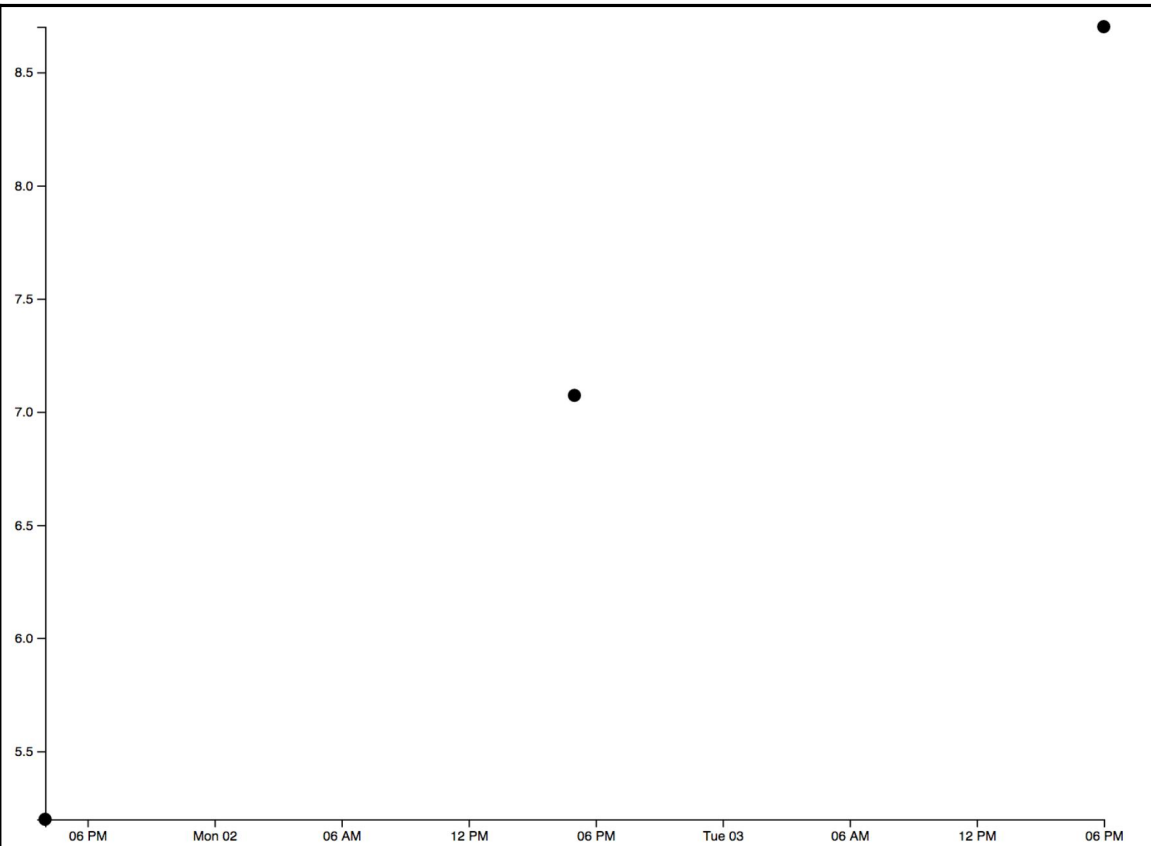
Filter :hov .cls +









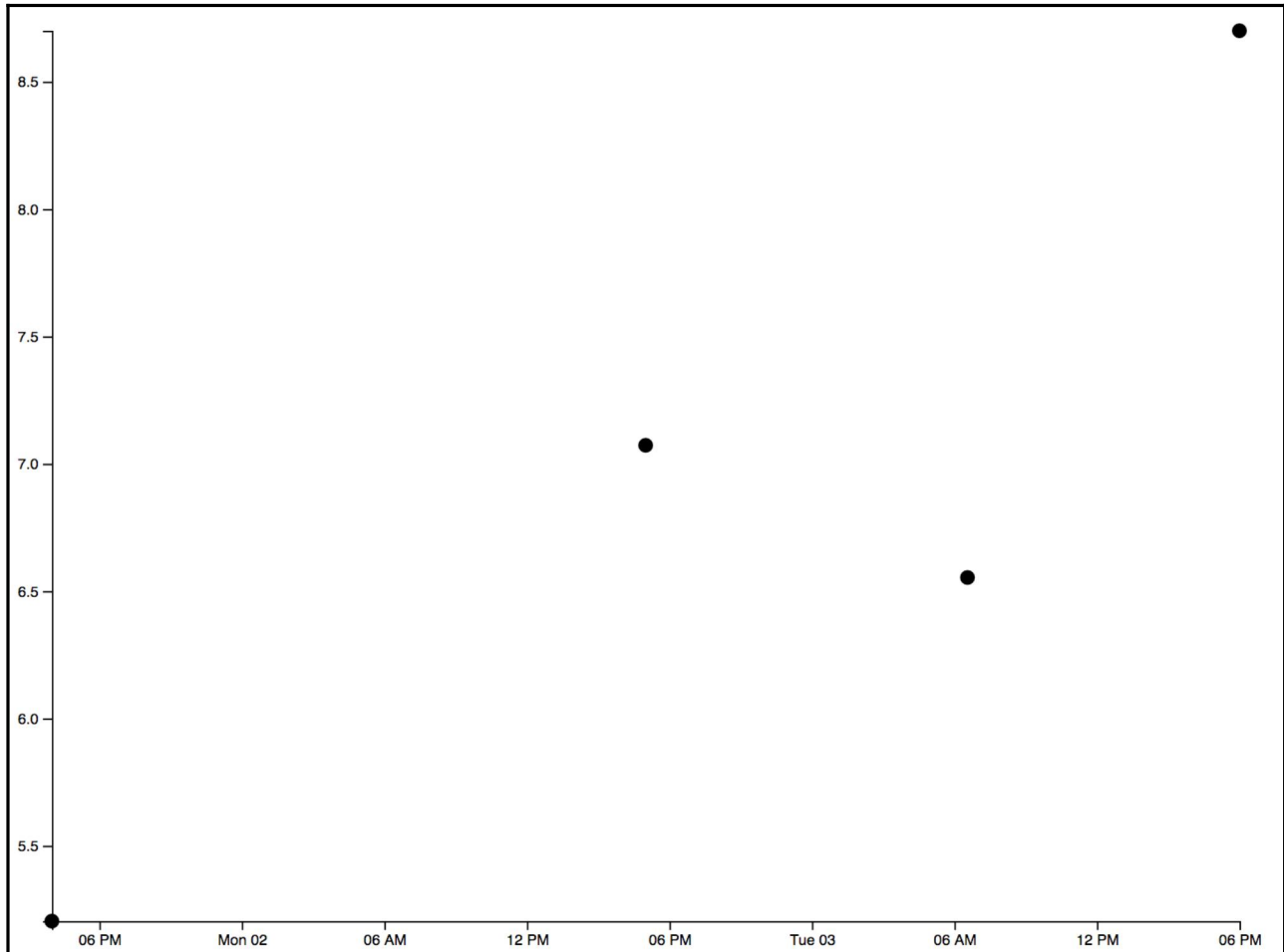


<b>id</b>	<b>date</b>	<b>distance</b>
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7

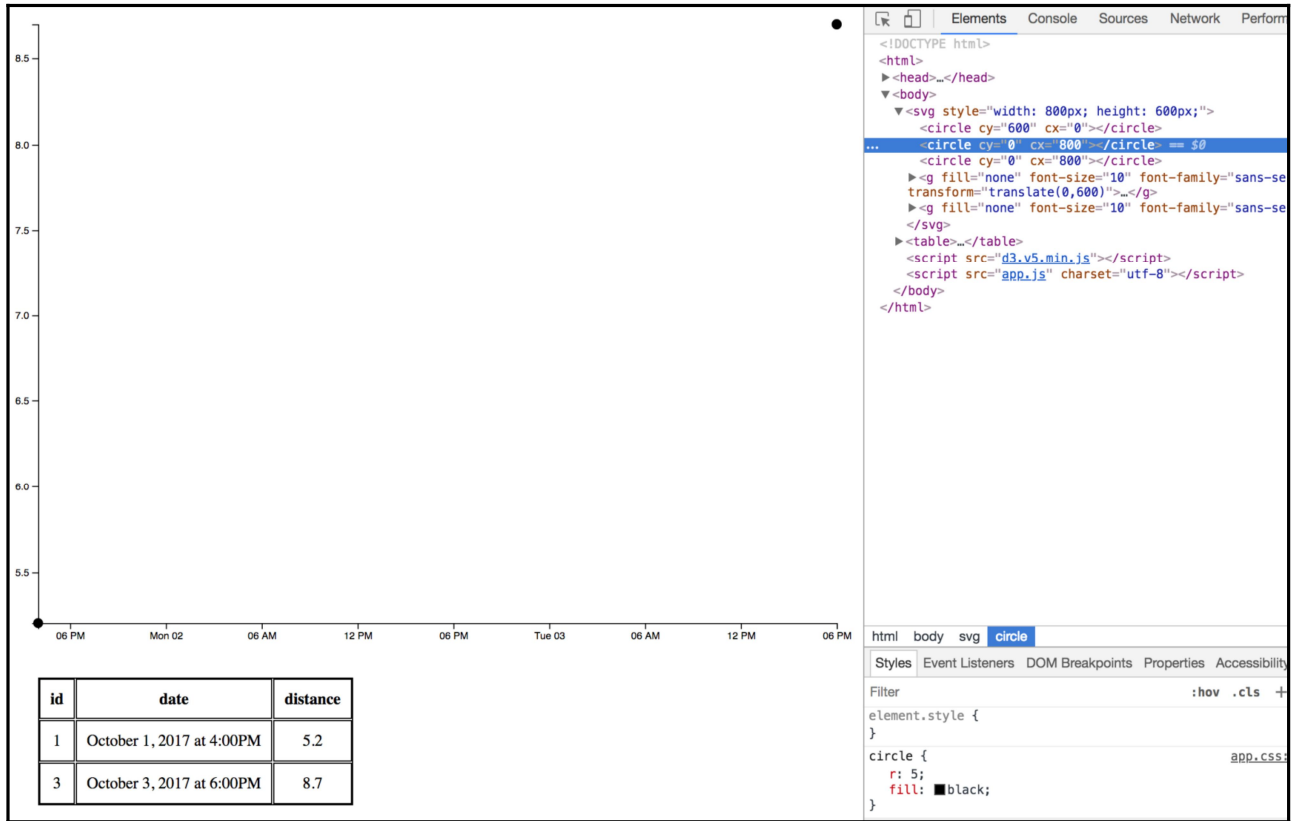
# Chapter 4: Making a Basic Scatter Plot Interactive

<b>id</b>	<b>date</b>	<b>distance</b>
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7
4	October 3, 2017 at 3:15AM	7.5625

<b>id</b>	<b>date</b>	<b>distance</b>
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7
4	October 3, 2017 at 4:22AM	7.352499999999999



<b>id</b>	<b>date</b>	<b>distance</b>
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7
4	October 3, 2017 at 6:33AM	6.553333333333333



id	date	distance
1	October 1, 2017 at 4:00PM	5.2
3	October 3, 2017 at 6:00PM	8.7

```

<!DOCTYPE html>
<html>
<head></head>
<body>
  <svg style="width: 800px; height: 600px;">
    <g id="points">
      <circle cy="600" cx="0"></circle>
      <circle cy="0" cx="800"></circle>
    </g>
    <g fill="none" font-size="10" font-family="sans-serif" text-anchor="
      transform="translate(0,600)"></g>
    <g fill="none" font-size="10" font-family="sans-serif" text-anchor="
    </svg>
    <table></table>
    <script src="d3.v5.min.js"></script>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>
  
```

html body svg g#points

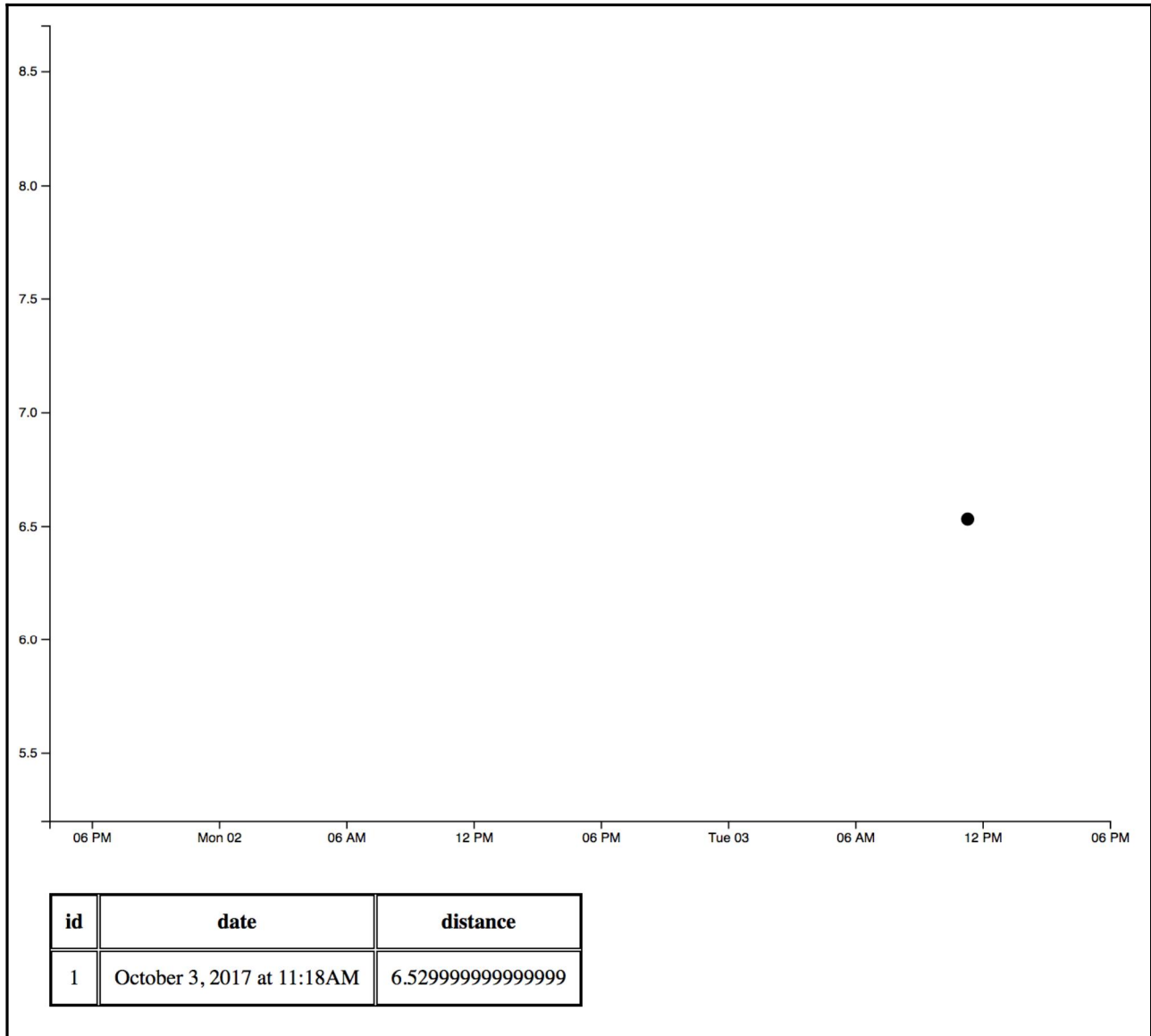
```

element.style {
}
:not(svg), :not(foreignObject) > svg user agent stylesheet {
  transform-origin: 0px 0px 0px;
}
  
```

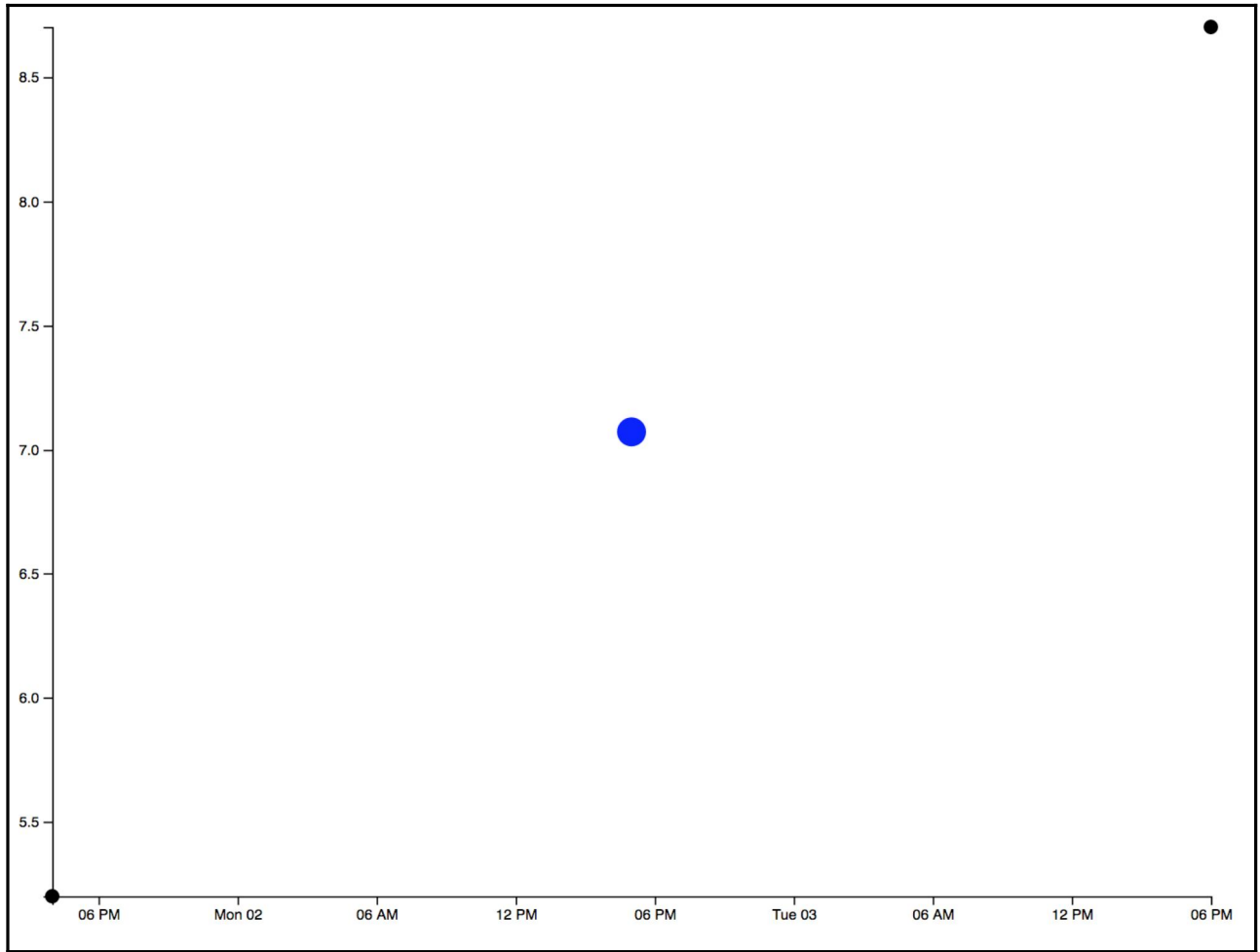
id	date	distance

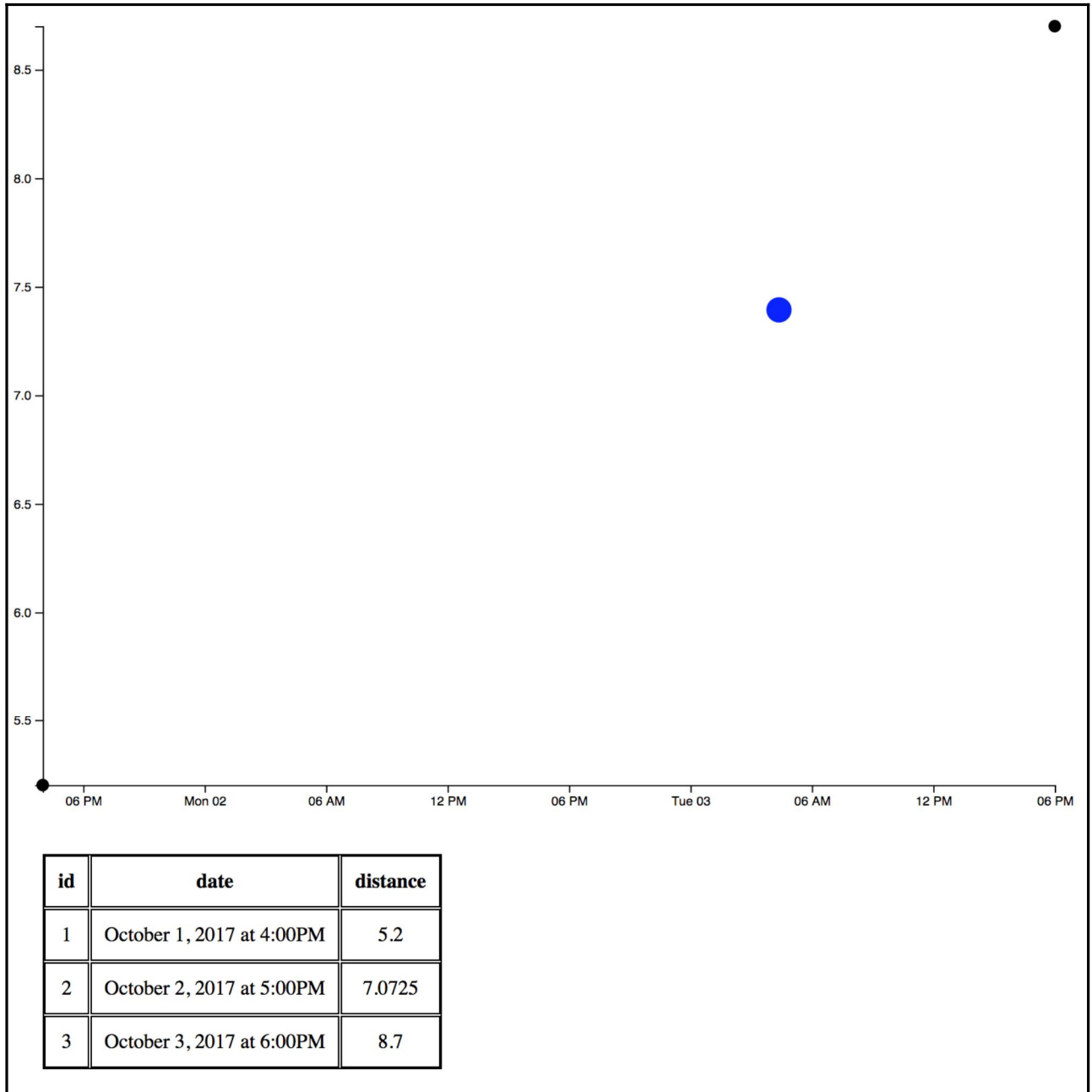
```

> Uncaught TypeError: Cannot read property 'id' of undefined
    at SVGSVGElement.<anonymous> (app.js:105)
    at SVGSVGElement.<anonymous> (d3.v5.min.js:12)
  
```



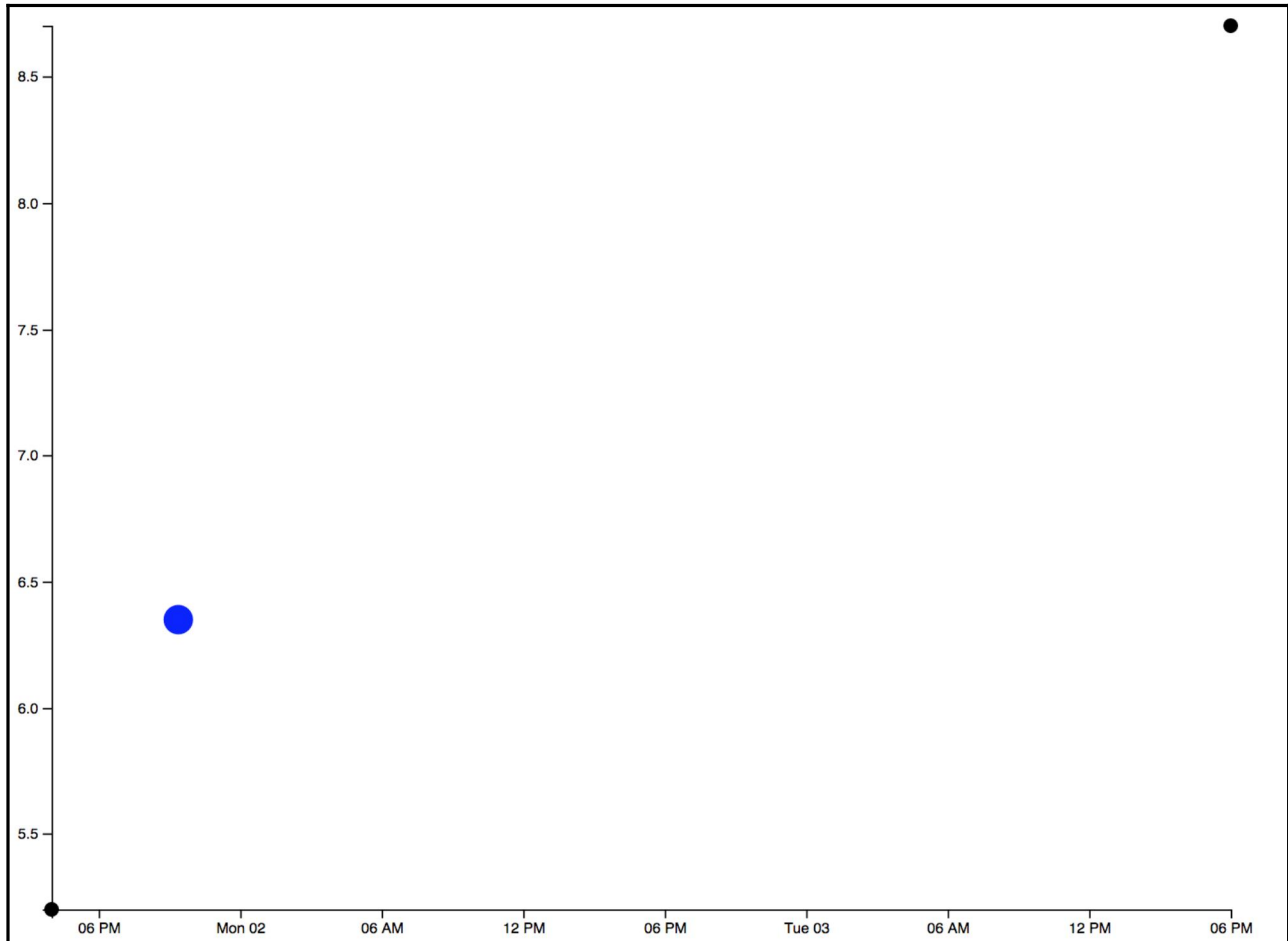
<b>id</b>	<b>date</b>	<b>distance</b>
1	October 3, 2017 at 11:18AM	6.529999999999999



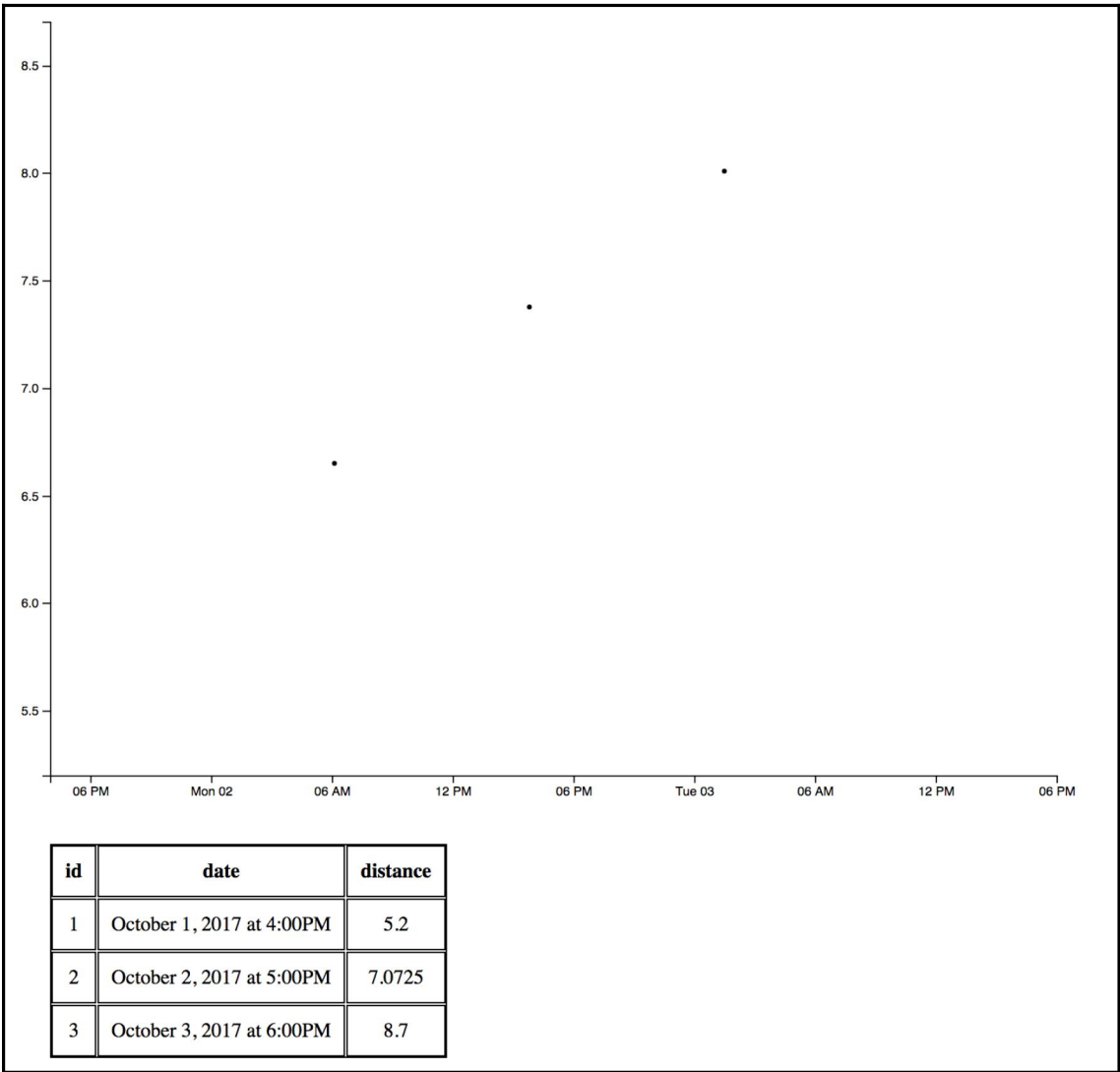


<b>id</b>	<b>date</b>	<b>distance</b>
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7

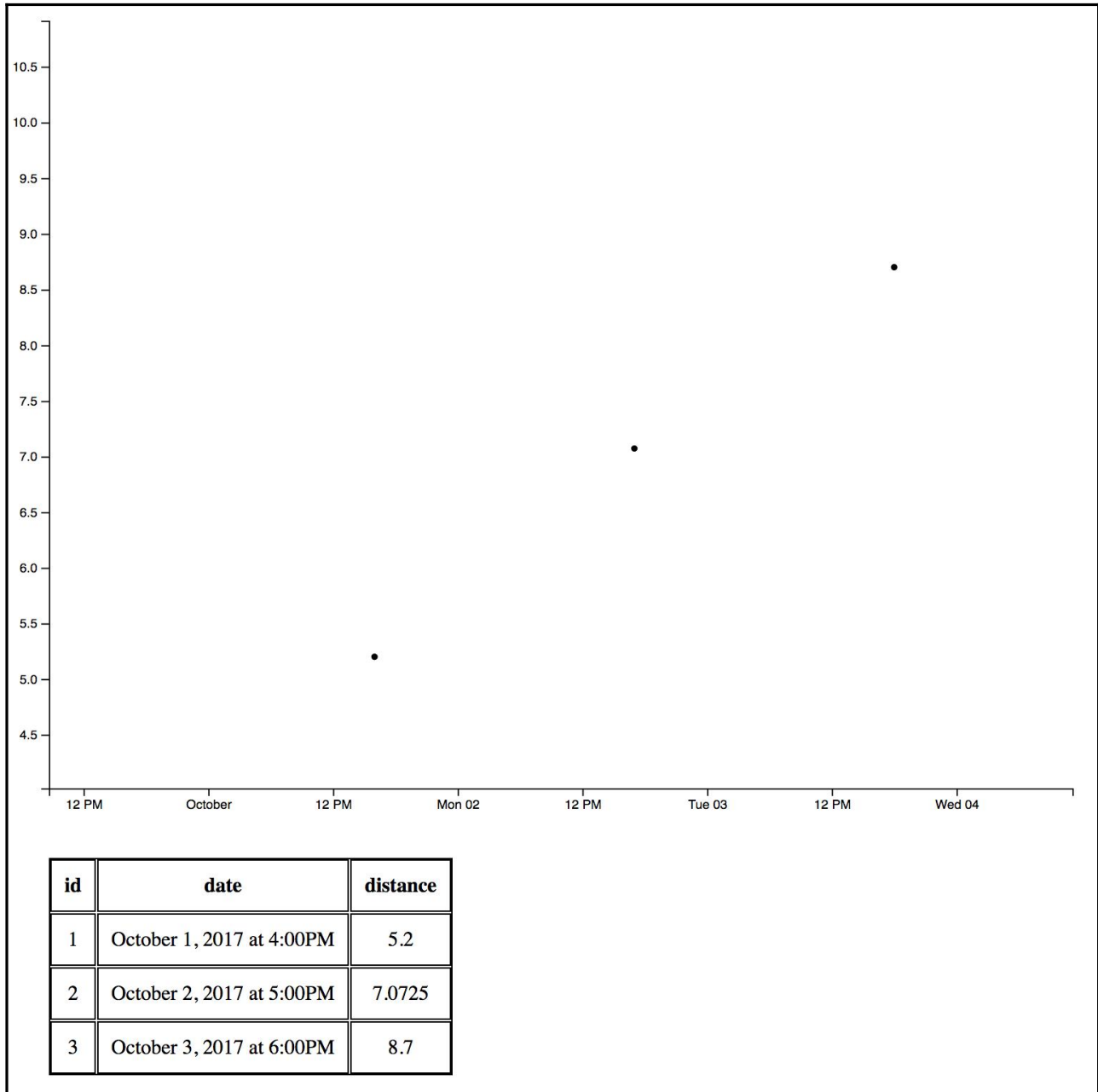




id	date	distance
1	October 1, 2017 at 4:00PM	5.2
2	October 1, 2017 at 9:22PM	6.349166666666667
3	October 3, 2017 at 6:00PM	8.7

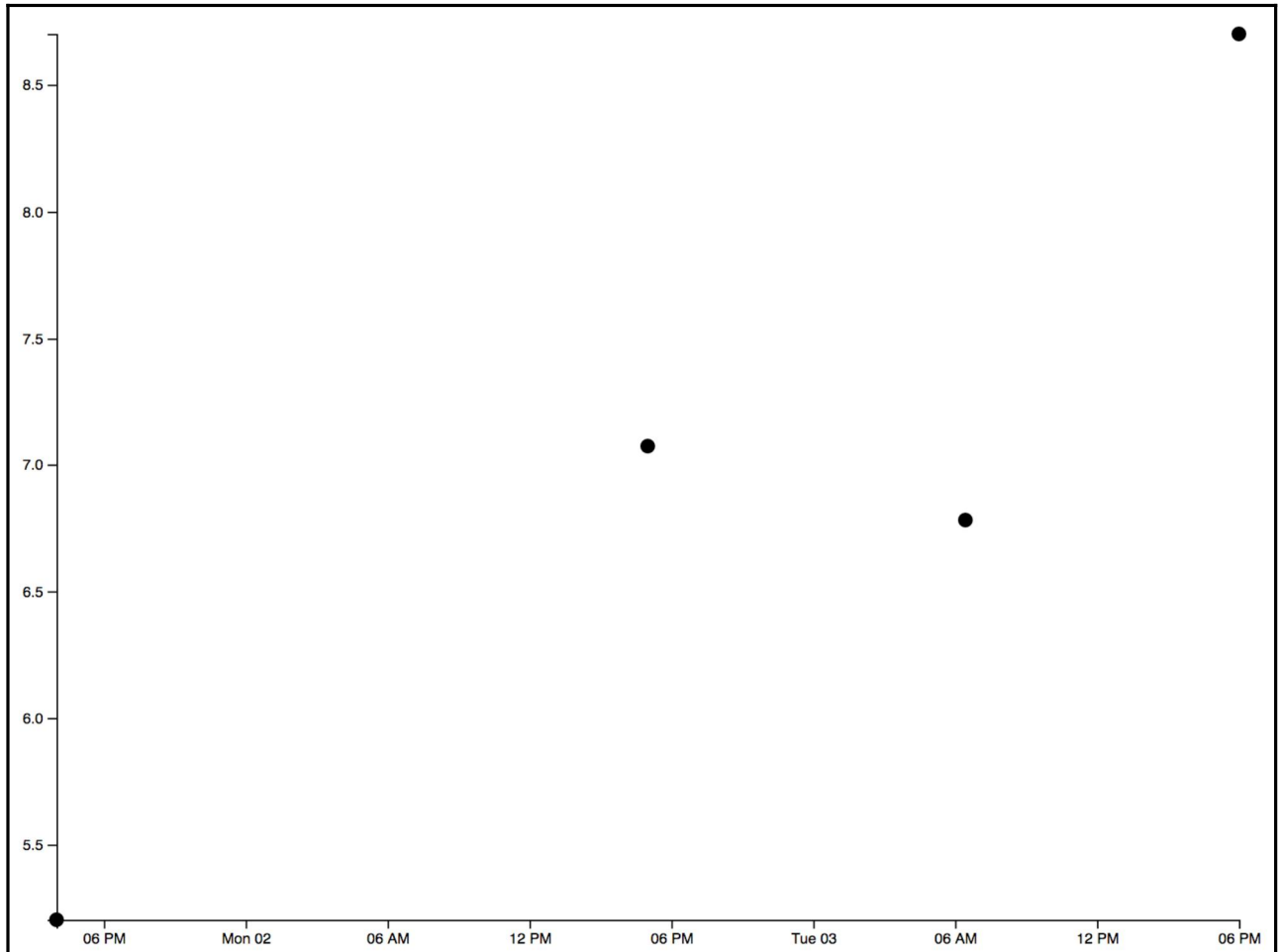


id	date	distance
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7

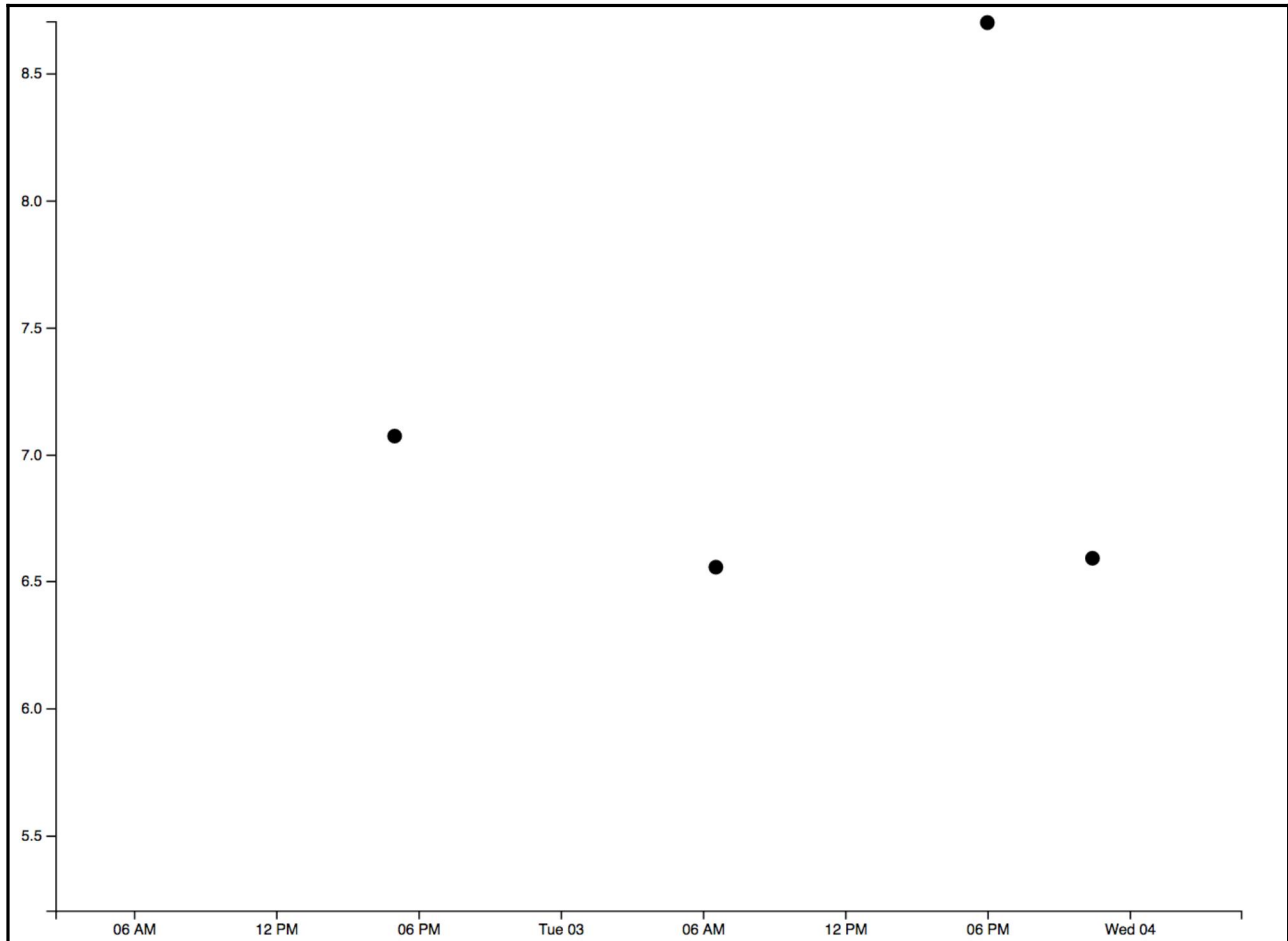


```

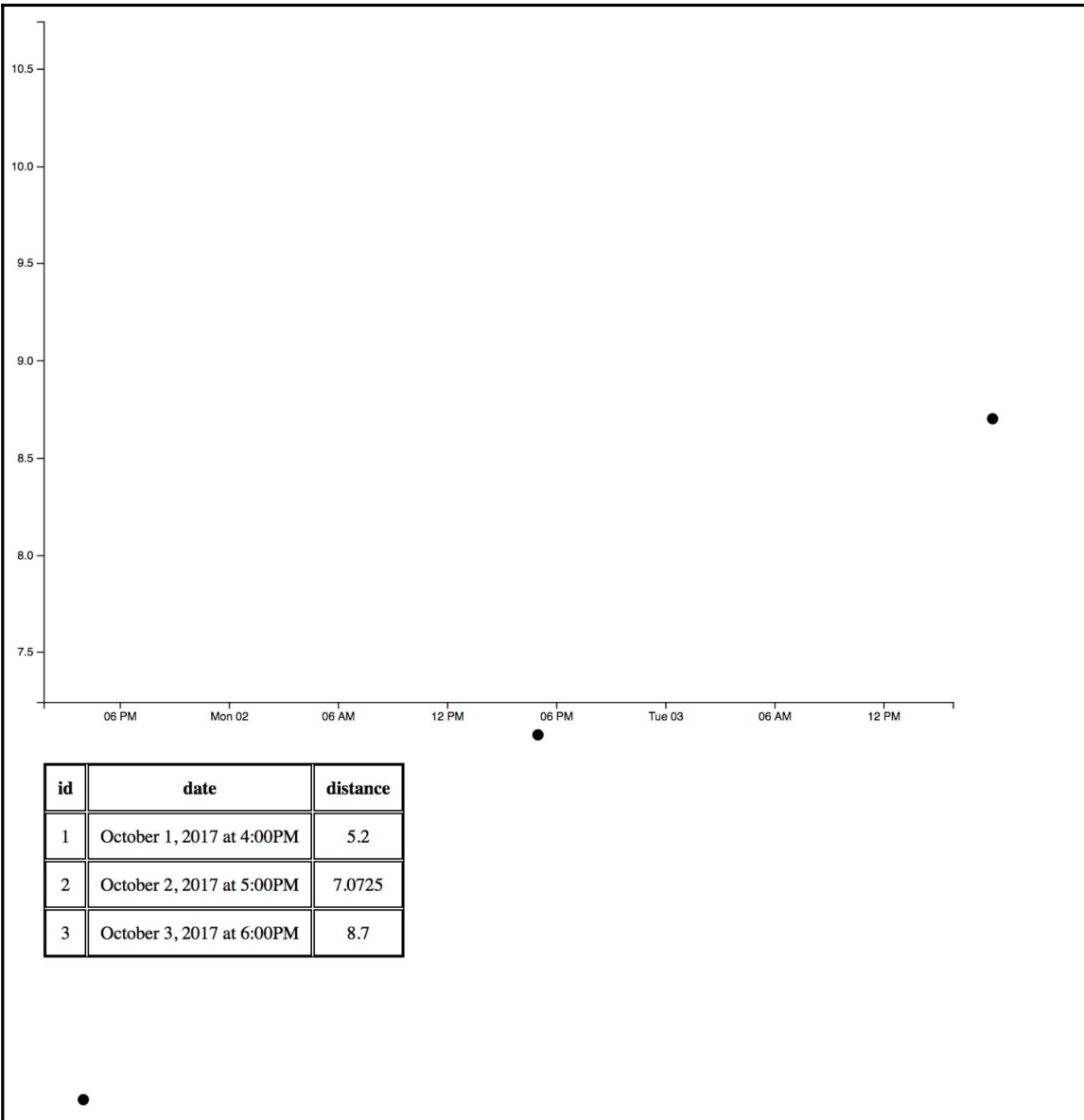
top
Filter
Default levels
Group similar 1 hidden
Uncaught TypeError: Cannot read property 'invertX' of null
    at SVGSVGElement.<anonymous> (app.js:125)
    at SVGSVGElement.<anonymous> (d3.v5.min.js:2)
  
```



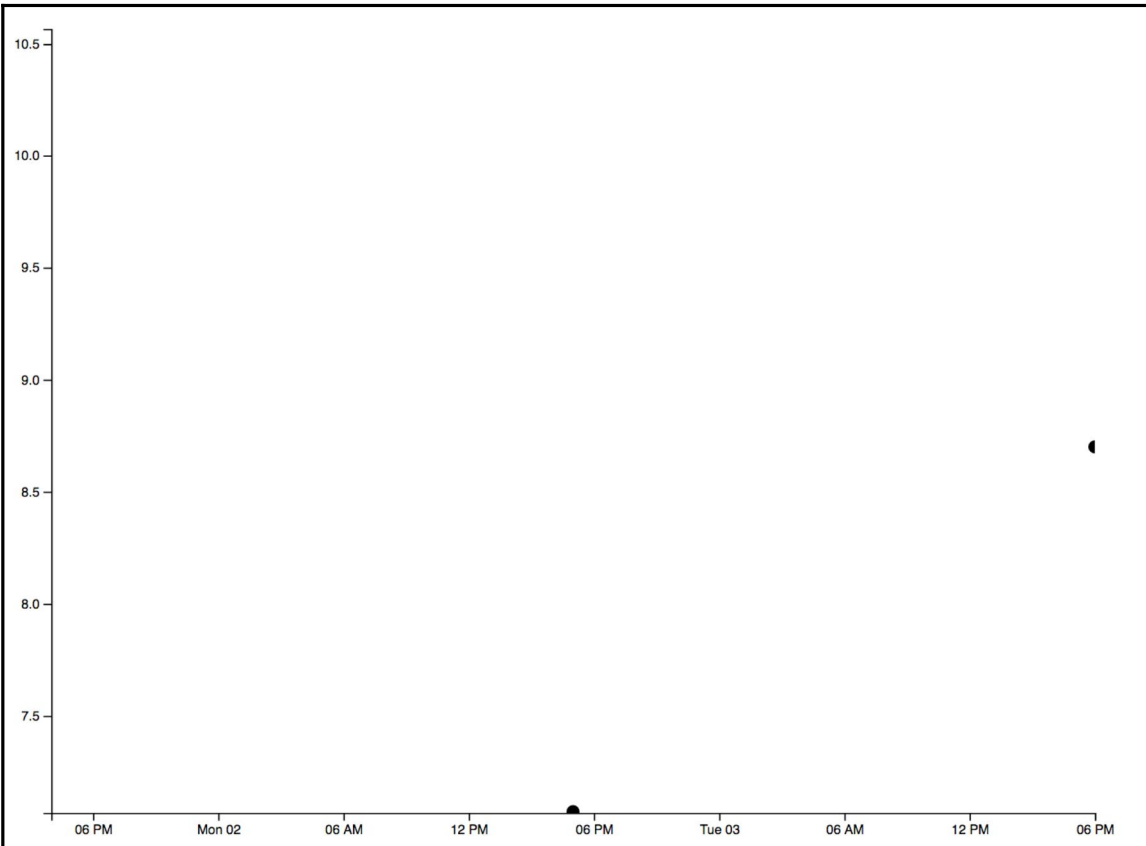
id	date	distance
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7
4	October 3, 2017 at 6:26AM	6.780833333333333



<b>id</b>	<b>date</b>	<b>distance</b>
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7
4	October 3, 2017 at 6:33AM	6.55333333333333
5	October 3, 2017 at 10:26PM	6.58833333333333

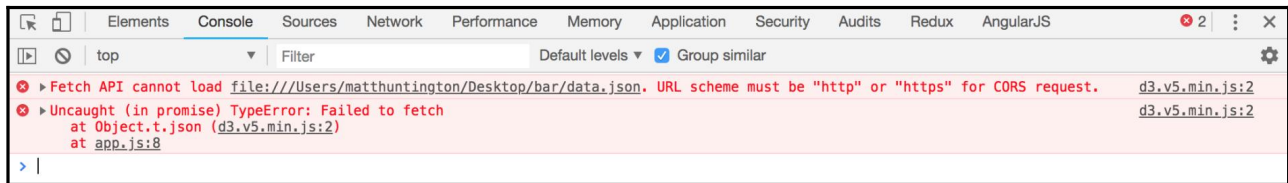
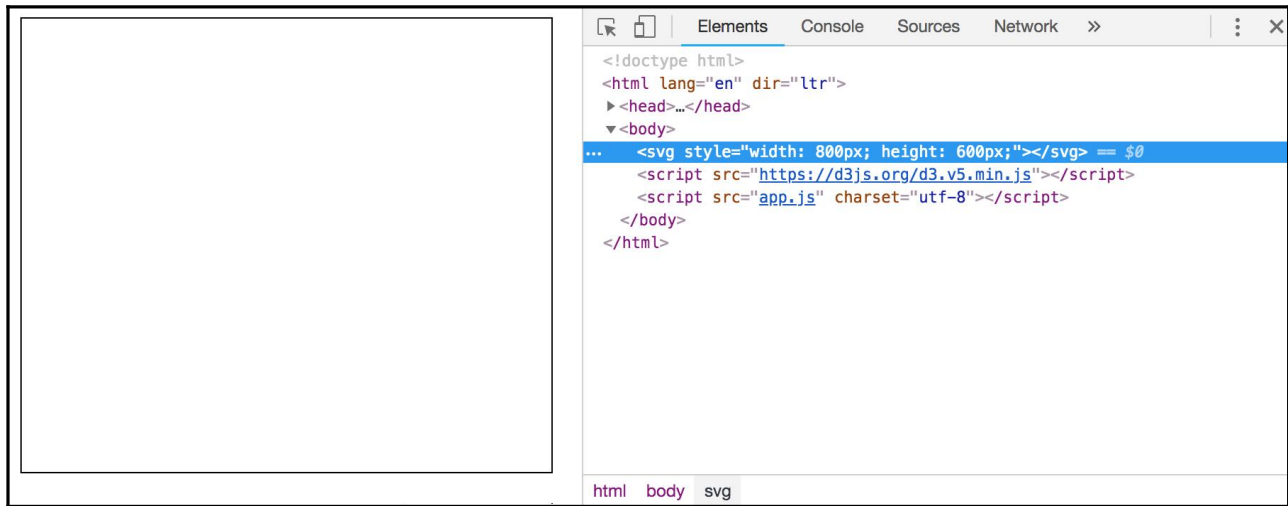


id	date	distance
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7



id	date	distance
1	October 1, 2017 at 4:00PM	5.2
2	October 2, 2017 at 5:00PM	7.0725
3	October 3, 2017 at 6:00PM	8.7

# Chapter 5: Creating a Bar Graph Using a Data File



```
Matts-MacBook-Pro-2:bar matthuntington$ http-server .
Starting up http-server, serving .
Available on:
  http://127.0.0.1:8080
  http://10.0.0.45:8080
Hit CTRL-C to stop the server
```

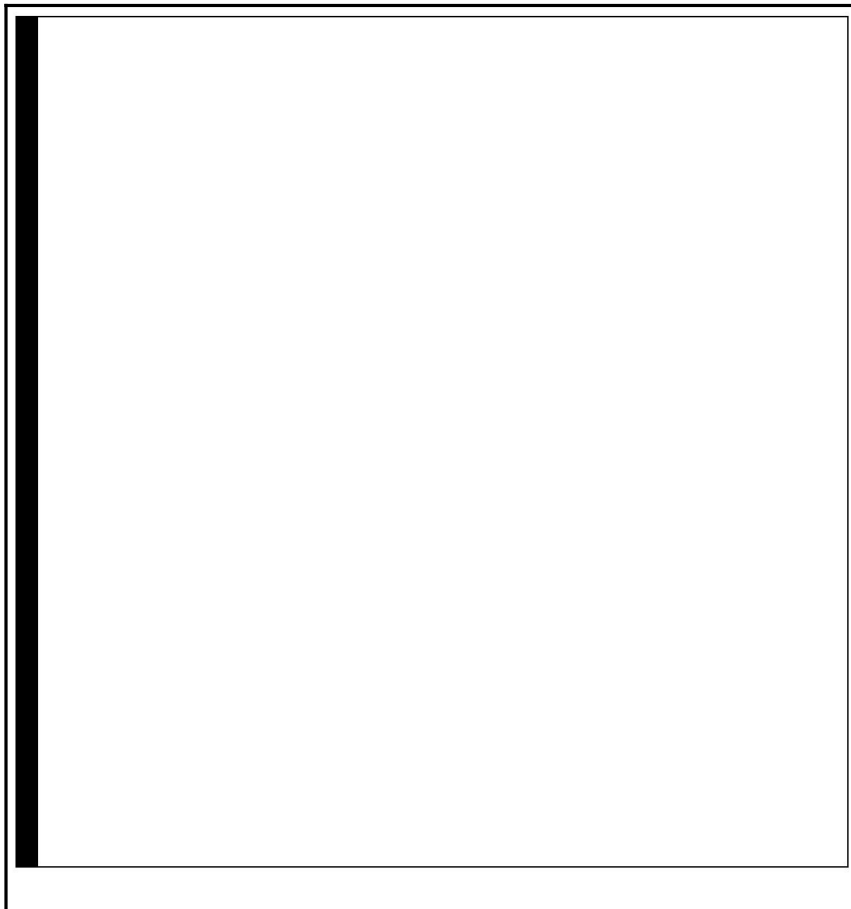






rect | 0 x 180

```
<!doctype html>
<html lang="en" dir="ltr">
  <head>...</head>
  <body>
    <svg style="width: 800px; height: 600px;">
      <rect height="600"></rect>
      <rect height="480"></rect>
      <rect height="480"></rect>
      <rect height="480"></rect>
      <rect height="450"></rect>
      <rect height="240"></rect>
      <rect height="240"></rect>
      <rect height="210"></rect>
      <rect height="210"></rect>
      ... <rect height="180"> == $0
      <rect height="180"></rect>
      <rect height="180"></rect>
      <rect height="180"></rect>
      <rect height="150"></rect>
      <rect height="150"></rect>
      <rect height="150"></rect>
      <rect height="150"></rect>
      <rect height="150"></rect>
      <rect height="150"></rect>
      <rect height="120"></rect>
      <rect height="120"></rect>
      <rect height="120"></rect>
      <rect height="120"></rect>
      <rect height="90"></rect>
      <rect height="90"></rect>
      <rect height="90"></rect>
      <rect height="60"></rect>
      <rect height="60"></rect>
      <rect height="60"></rect>
      <rect height="60"></rect>
      <rect height="30"></rect>
      <rect height="0"></rect>
      <rect height="0"></rect>
      <rect height="0"></rect>
      <rect height="0"></rect>
      <rect height="0"></rect>
    </svg>
    <script src="https://d3js.org/d3.v5.min.js"></script>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>
```



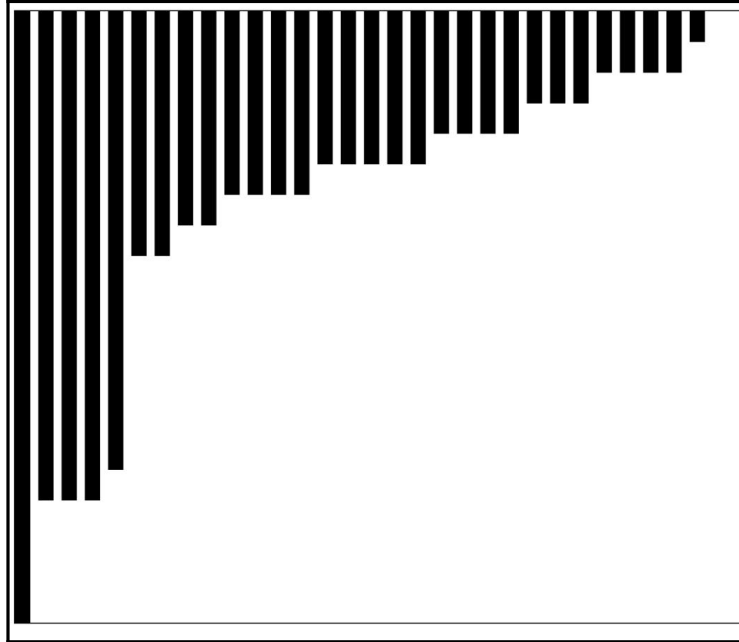
```
Elements Console Sources
<!doctype html>
<html lang="en" dir="ltr">
  <head>...</head>
  <body>
    <svg style="width: 800px; height: 600px">
      <rect height="600"></rect>
      <rect height="480"></rect>
      <rect height="480"></rect>
      <rect height="480"></rect>
      <rect height="450"></rect>
      <rect height="240"></rect>
      <rect height="240"></rect>
      <rect height="210"></rect>
      <rect height="210"></rect>
      <rect height="180"></rect>
      <rect height="180"></rect>
      <rect height="180"></rect>
      <rect height="180"></rect>
      <rect height="150"></rect>
      <rect height="150"></rect>
      <rect height="150"></rect>
      <rect height="150"></rect>
      <rect height="150"></rect>
      <rect height="120"></rect>
      <rect height="120"></rect>
      <rect height="120"></rect>
      <rect height="120"></rect>
      <rect height="90"></rect>
      <rect height="90"></rect>
      <rect height="90"></rect>
      <rect height="60"></rect>
    </svg>
  </body>
</html>
```

html body svg rect

Styles Event Listeners DOM Breakpoints

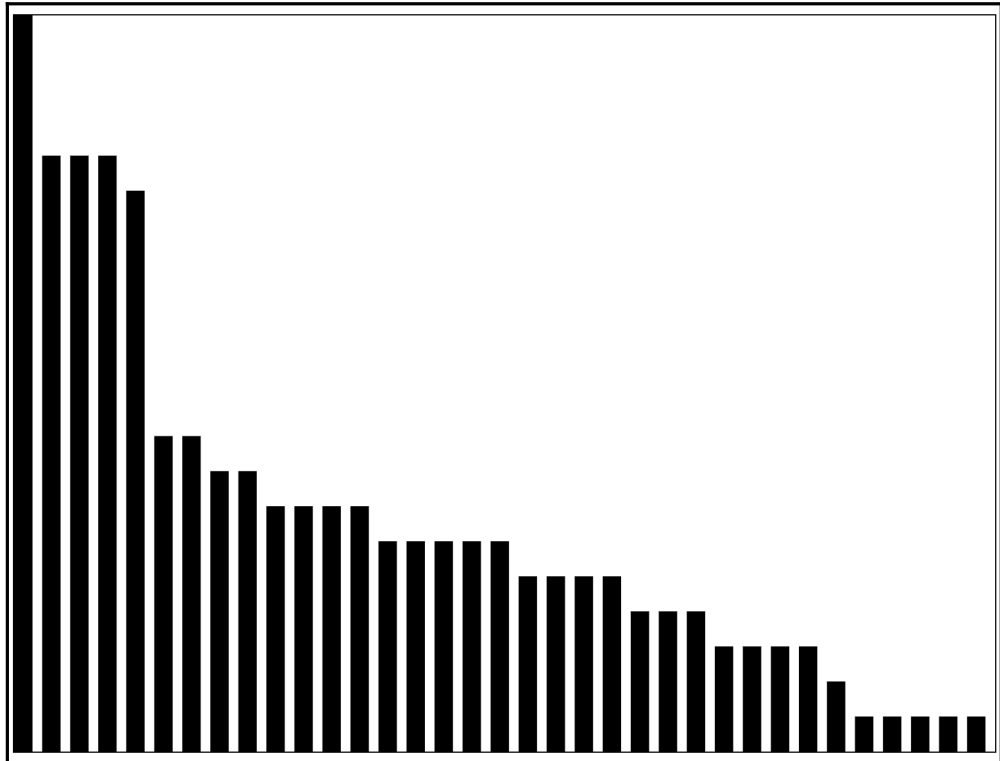
Filter

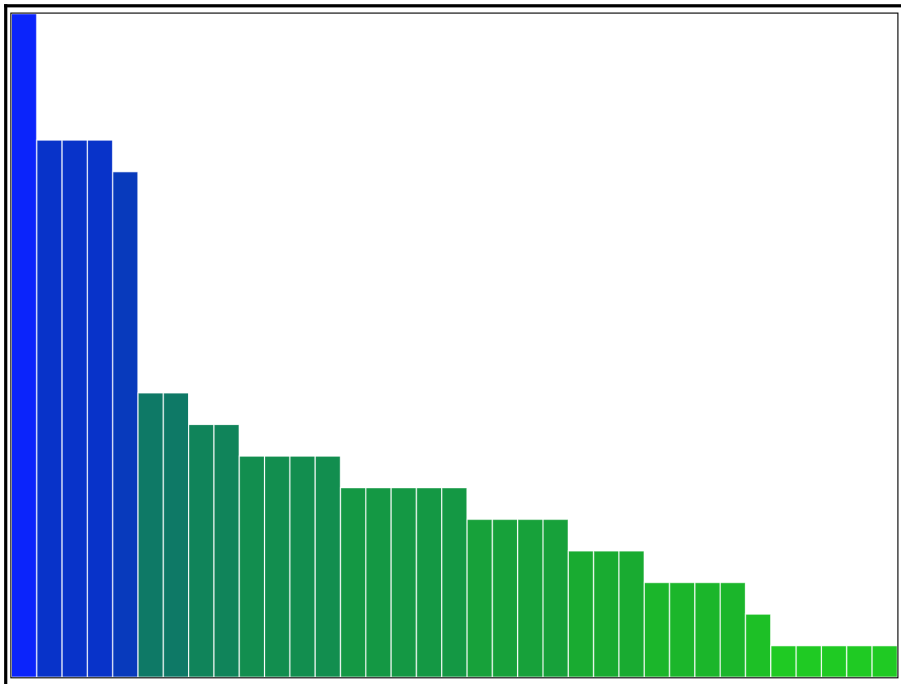
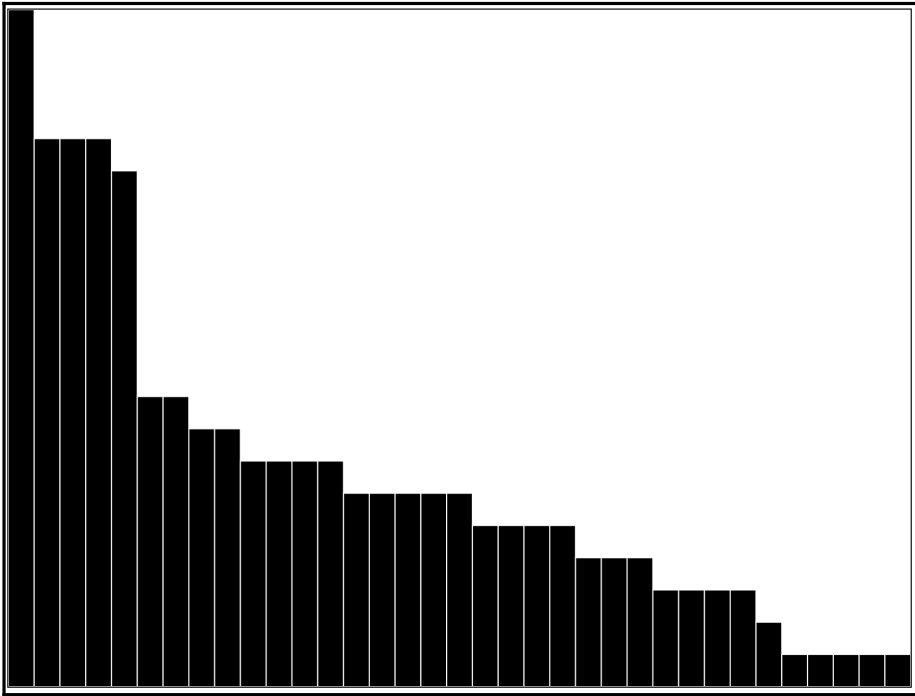
```
element.style {
}
```



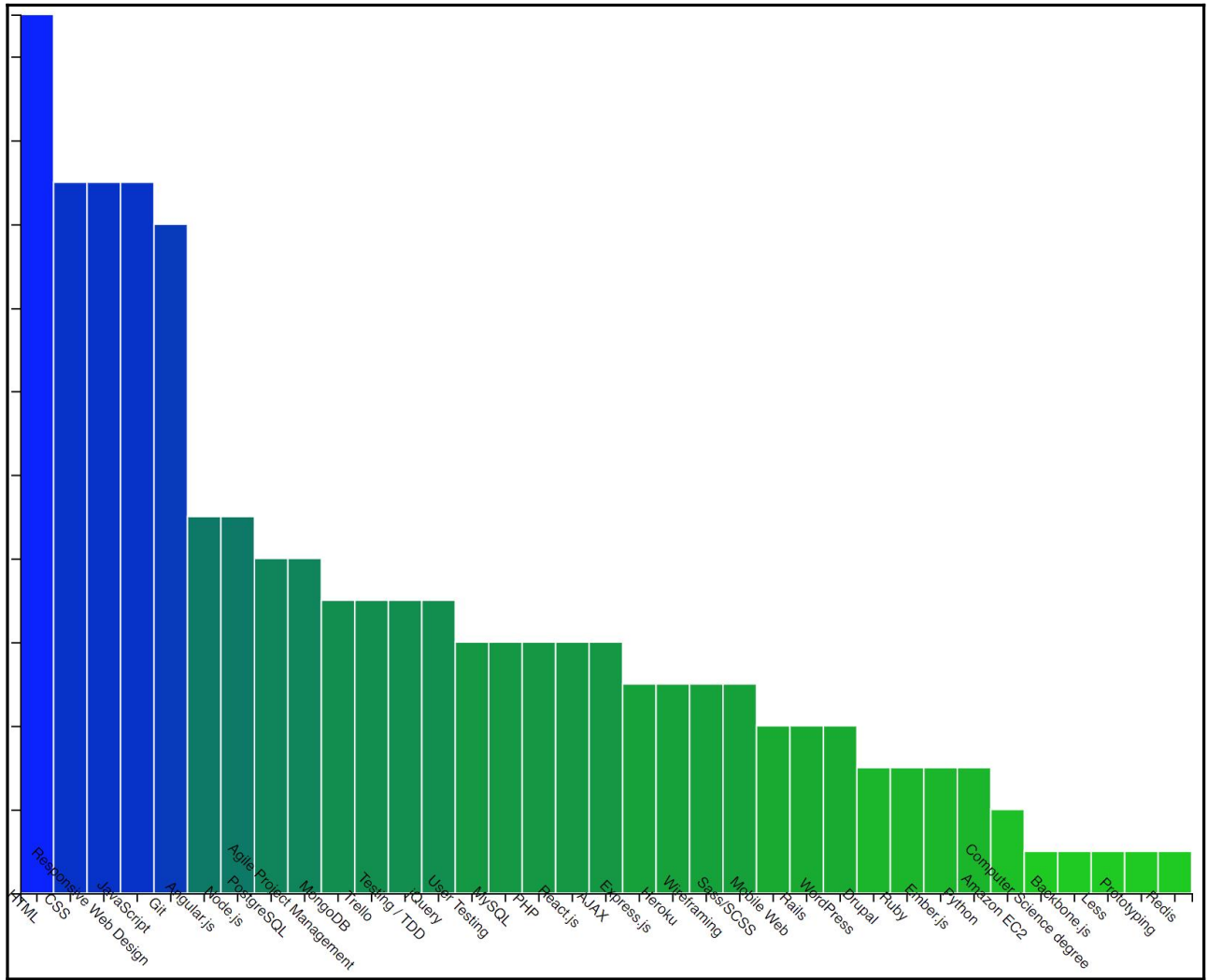
```

Elements Console Sources Network Performance >>
<!doctype html>
<html lang="en" dir="ltr">
<head>...</head>
<body>
  <svg style="width: 800px; height: 600px;">
    <rect height="600" x="0"></rect>
    <rect height="480" x="22.857142857142858"></rect> == 50
    <rect height="480" x="45.714285714285715"></rect>
    <rect height="480" x="68.57142857142857"></rect>
    <rect height="450" x="91.42857142857143"></rect>
    <rect height="240" x="114.28571428571429"></rect>
    <rect height="240" x="137.14285714285714"></rect>
    <rect height="210" x="160"></rect>
    <rect height="210" x="182.85714285714286"></rect>
    <rect height="180" x="205.71428571428572"></rect>
    <rect height="180" x="228.57142857142858"></rect>
    <rect height="180" x="251.42857142857144"></rect>
    <rect height="180" x="274.2857142857143"></rect>
    <rect height="150" x="297.14285714285717"></rect>
    <rect height="150" x="320"></rect>
    <rect height="150" x="342.8571428571429"></rect>
    <rect height="150" x="365.7142857142857"></rect>
    <rect height="150" x="388.57142857142856"></rect>
    <rect height="120" x="411.42857142857144"></rect>
    <rect height="120" x="434.2857142857143"></rect>
    <rect height="120" x="457.14285714285717"></rect>
    <rect height="120" x="480"></rect>
    <rect height="90" x="502.8571428571429"></rect>
    <rect height="90" x="525.7142857142858"></rect>
    <rect height="90" x="548.5714285714286"></rect>
    <rect height="60" x="571.4285714285714"></rect>
  </svg>
</body>
</html>
  
```

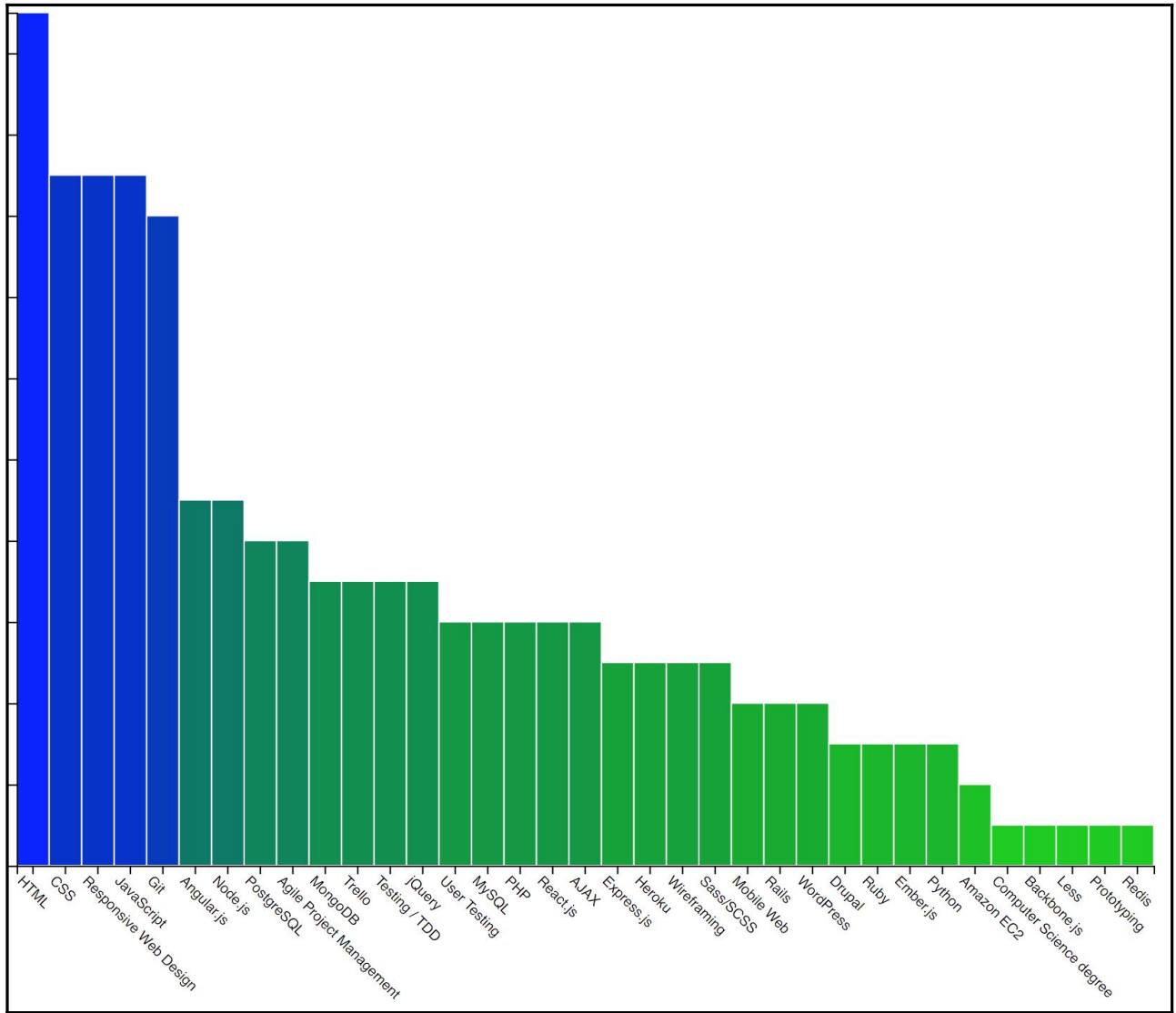




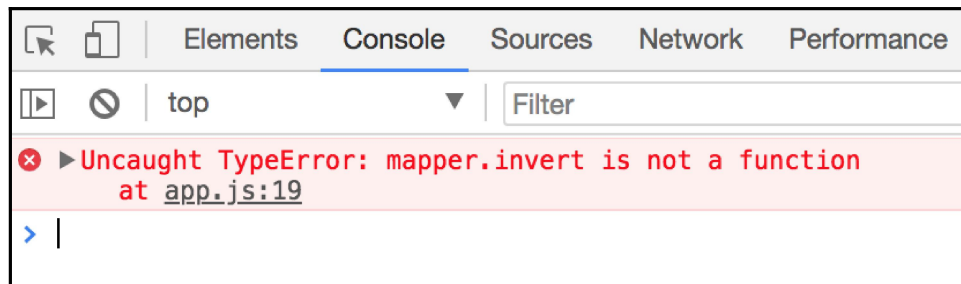
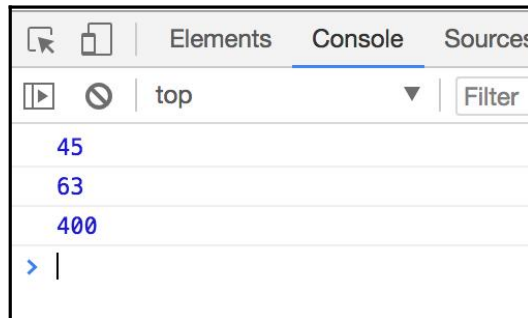
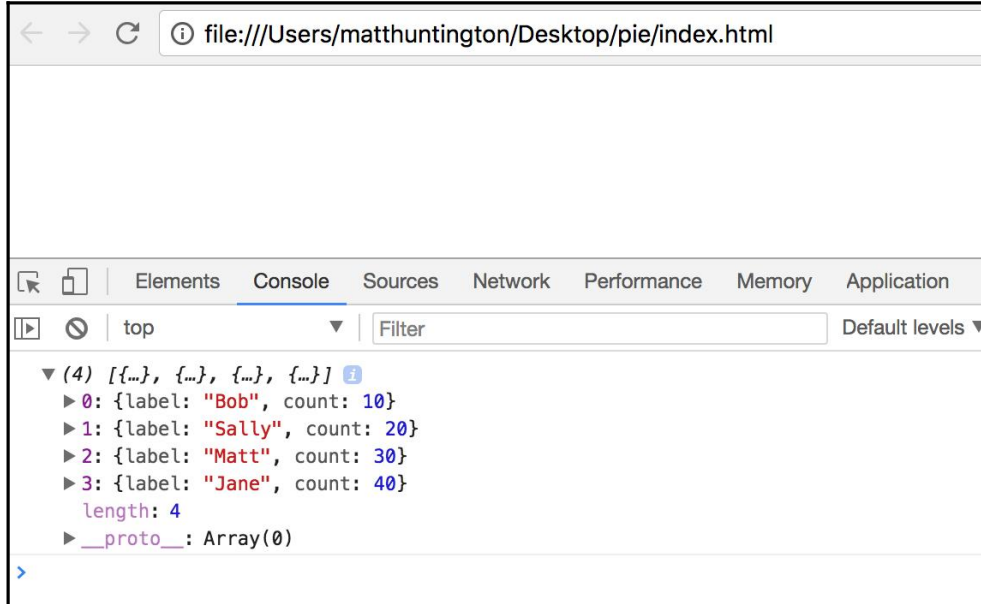








# Chapter 6: Animating SVG Elements to Create an Interactive Pie Chart



```
Elements Console Sources Network Performance Memory Application Security Audits AngularJS Redux
top Filter Default levels Group similar
(10) ["#1f77b4", "#ff7f0e", "#2ca02c", "#d62728", "#9467bd", "#8c564b", "#e377c2", "#7f7f7f", "#bcbd22", "#17becf"]
  0: "#1f77b4"
  1: "#ff7f0e"
  2: "#2ca02c"
  3: "#d62728"
  4: "#9467bd"
  5: "#8c564b"
  6: "#e377c2"
  7: "#7f7f7f"
  8: "#bcbd22"
  9: "#17becf"
  length: 10
  __proto__: Array(0)
```

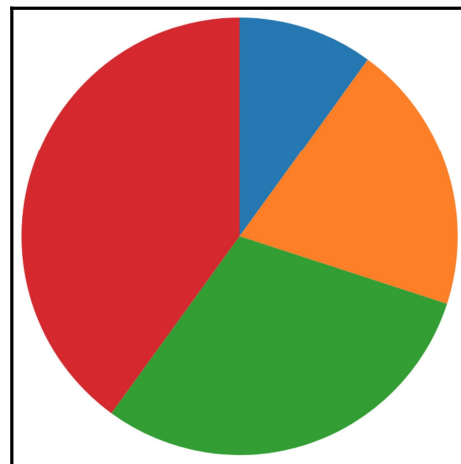
```
Elements Console Sources Network
..<!DOCTYPE html> == $0
<html>
  <head>...</head>
  <body>
    <svg>
      <g>
        <path fill="#1f77b4"></path>
        <path fill="#ff7f0e"></path>
        <path fill="#2ca02c"></path>
        <path fill="#d62728"></path>
      </g>
    </svg>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>
```

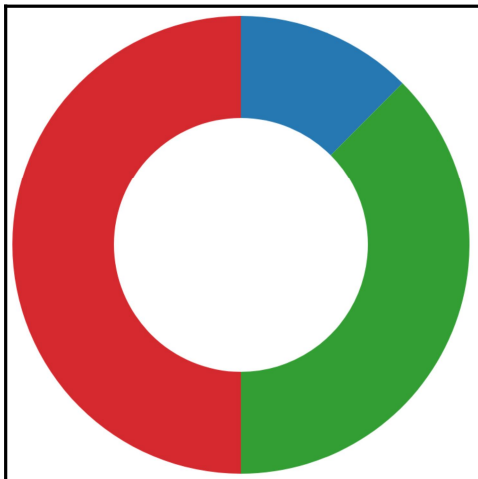
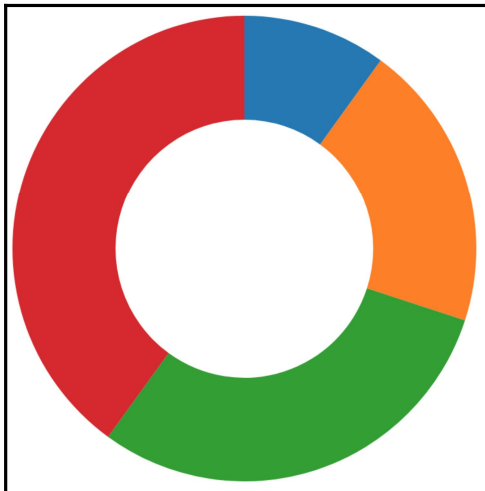
```
▼ (4) [{}, {}, {}, {}] ⓘ
  ▼ 0:
    ▶ data: {label: "Bob", count: 10}
    ▶ endAngle: 0.6283185307179586
    ▶ index: 0
    ▶ padAngle: 0
    ▶ startAngle: 0
    ▶ value: 10
    ▶ __proto__: Object
  ▼ 1:
    ▶ data: {label: "Sally", count: 20}
    ▶ endAngle: 1.8849555921538759
    ▶ index: 1
    ▶ padAngle: 0
    ▶ startAngle: 0.6283185307179586
    ▶ value: 20
    ▶ __proto__: Object
  ▼ 2:
    ▶ data: {label: "Matt", count: 30}
    ▶ endAngle: 3.7699111843077517
    ▶ index: 2
    ▶ padAngle: 0
    ▶ startAngle: 1.8849555921538759
    ▶ value: 30
    ▶ __proto__: Object
  ▼ 3:
    ▶ data: {label: "Jane", count: 40}
    ▶ endAngle: 6.283185307179586
    ▶ index: 3
    ▶ padAngle: 0
    ▶ startAngle: 3.7699111843077517
    ▶ value: 40
    ▶ __proto__: Object
  length: 4
  ▶ __proto__: Array(0)
```



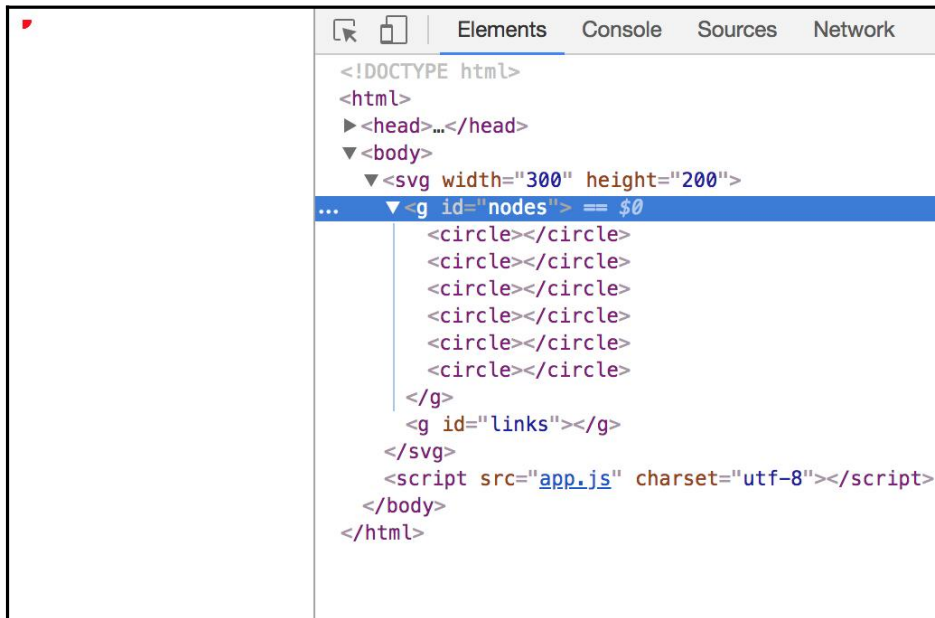
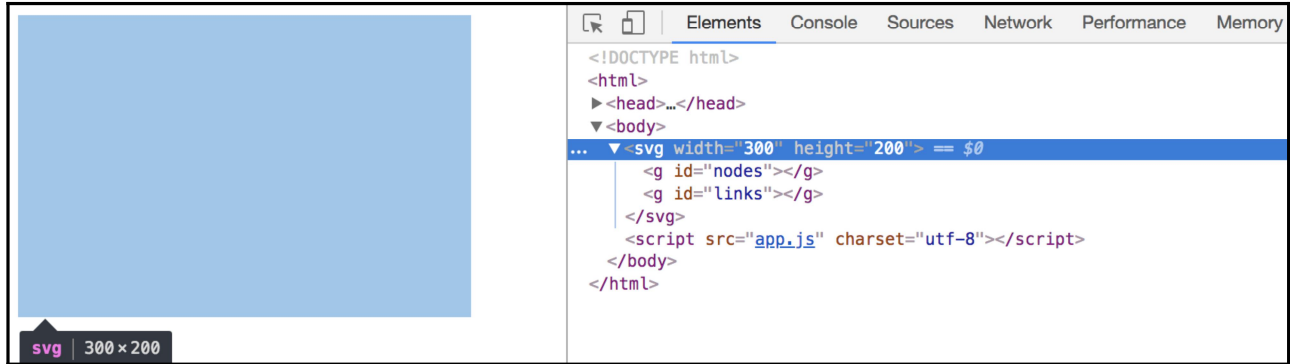
Elements Console Sources Network Performance Memory Application Security Audits AngularJS Redux

```
<!DOCTYPE html>
<html>
  <head>...</head>
  <body>
    <svg width="360" height="360"> == $0
      <g>
        <path d="M1.1021821192326179e-14,-180A180,180,0,0,1,105.80134541264516,-145.62305898749054L0,0Z" fill="#1f77b4"></path>
        <path d="M105.80134541264516,-145.62305898749054A180,180,0,0,1,171.19017293312763,55.62305898749053L0,0Z" fill="#ff7f0e"></path>
        <path d="M171.19017293312763,55.62305898749053A180,180,0,0,1,-105.80134541264515,145.62305898749054L0,0Z" fill="#2ca02c"></path>
        <path d="M-105.80134541264515,145.62305898749054A180,180,0,0,1,-3.3065463576978534e-14,-180L0,0Z" fill="#d62728"></path>
      </g>
    </svg>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>
```





# Chapter 7: Using Physics to Create a Force-Directed Graph



circle | 10x10

Elements Console Sources Network

```
<!DOCTYPE html>
<html>
  <head>...</head>
  <body>
    <svg width="300" height="200">
      <g id="nodes">
        <circle></circle>
        <circle></circle>
        <circle></circle>
        <circle></circle>
        <circle></circle>
      </g>
      <g id="links"> == $0
        <line></line>
        <line></line>
        <line></line>
        <line></line>
        <line></line>
      </g>
    </svg>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>
```

circle | 10x10

Elements Console Sources Network

```
<!DOCTYPE html>
<html>
  <head>...</head>
  <body>
    <svg width="300" height="200">
      <g id="nodes">
        <circle></circle>
        <circle></circle>
        <circle></circle>
        <circle></circle>
        <circle></circle>
      </g>
      <g id="links"> == $0
        <line></line>
        <line></line>
        <line></line>
        <line></line>
        <line></line>
      </g>
    </svg>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>
```



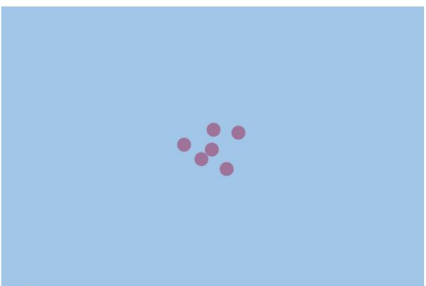
● circle | 10 × 10

🔍 📄
Elements
Console
Sources
Network
Performance
Memory
Application
Security

```

<!DOCTYPE html>
<html>
  <head>...</head>
  <body>
    <svg width="300" height="200">
      <g id="nodes">
        <circle cx="0" cy="0"></circle>
        <circle cx="-7.373688780783198" cy="6.754902942615239"></circle>
        <circle cx="1.2363864559502138" cy="-14.087985964343622"></circle>
        <circle cx="10.538470205147267" cy="13.745568221620495"></circle>
        <circle cx="-19.694269706308575" cy="-3.4836390075862327"></circle>
        ... <circle cx="18.866941955758957" cy="-12.001604111035421"></circle> == $0
      </g>
      <g id="links">
        <line></line>
        <line></line>
        <line></line>
        <line></line>
        <line></line>
        <line></line>
      </g>
    </svg>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>

```



■ svg | 300 × 200

🔍 📄
Elements
Console
Sources
Network
Performance
Memory
Application

```

<!DOCTYPE html>
<html>
  <head>...</head>
  <body>
    ... <svg width="300" height="200"> == $0
      <g id="nodes">
        <circle cx="149.40435997837253" cy="101.51212631978825"></circle>
        <circle cx="142.03067119758933" cy="108.2670292624035"></circle>
        <circle cx="150.64074643432275" cy="87.42414035544464"></circle>
        <circle cx="159.9428301835198" cy="115.25769454140874"></circle>
        <circle cx="129.71009027206395" cy="98.02848731220202"></circle>
        <circle cx="168.2713019341315" cy="89.5105220875283"></circle>
      </g>
      <g id="links">...</g>
    </svg>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>

```

```

<!DOCTYPE html>
<html>
  <head>...</head>
  <body>
    ... <svg width="300" height="200"> == $0
      <g id="nodes">
        <circle cx="162.3426537235129" cy="102.63859028773436"></circle>
        <circle cx="87.42216399079263" cy="184.73671585665653"></circle>
        <circle cx="139.98899785571237" cy="-4.959581612965805"></circle>
        <circle cx="217.87405637993155" cy="193.2575941015269"></circle>
        <circle cx="36.038964818056215" cy="76.4121488918581"></circle>
        <circle cx="256.33323248579916" cy="47.91450631023551"></circle>
      </g>
      <g id="links">...</g>
    </svg>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>

```

```

<!DOCTYPE html>
<html>
  <head>...</head>
  <body>
    ... <svg width="300" height="200">
      <g id="nodes">...</g>
      <g id="links"> == $0
        <line x1="214.71467190599836" y1="87.77072530711638" x2="67.03889156149019" y2="152.12740476000639"></line>
        <line x1="173.9330386599998" y1="28.48177877033296" x2="67.03889156149019" y2="152.12740476000639"></line>
        <line x1="173.9330386599998" y1="28.48177877033296" x2="225.08032111907858" y2="181.88802052186668"></line>
        <line x1="225.08032111907858" y1="181.88802052186668" x2="67.03889156149019" y2="152.12740476000639"></line>
        <line x1="225.08032111907858" y1="181.88802052186668" x2="86.30031991329378" y2="100.22889695147359"></line>
        <line x1="132.95620391347674" y1="49.59523706339767" x2="225.08032111907858" y2="181.88802052186668"></line>
      </g>
    </svg>
    <script src="app.js" charset="utf-8"></script>
  </body>
</html>

```

# Chapter 8: Mapping

