Understanding D3 Concepts

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What you'll Learn

Concepts Overview

Selections

Dynamic Functions
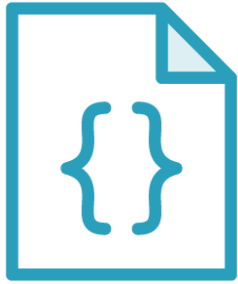
Real-Time Updating

Animation
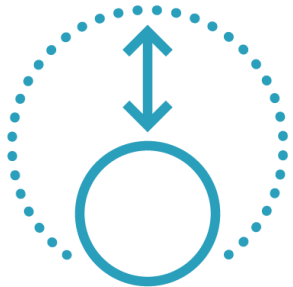
Interactivity

D3 Concepts Overview

D3 Concepts

Selections

Real-Time Updates

Dynamic Functions

Transitions

Web Standards

Interactivity

Selections

D3 Selections

```javascript
// W3C DOM API

var paragraphs = document.getElementsByTagName("p");

for (var i = 0; i < paragraphs.length; i++) {

    var paragraph = paragraphs.item(i);

    paragraph.style.setProperty("color", "white", null);
}

// D3 API

d3.selectAll("p").style("color", "white");
```

D3 Selections

```
// select all paragraph elements
d3.selectAll("p").style("color", "white");

// select an individual element
d3.selectAll("#p1").style("color", "white");

// select a class of elements
d3.selectAll(".text-label").style("color", "white");
```

Dynamic Functions

Dynamic Functions

```
// Randomly Color Paragraphs

d3.selectAll("p").style("color", function() {

    return "hsl(" + Math.random() * 360 + ",100%,50%)"; });


// Using data

d3.selectAll("p")

    .data([4, 8, 15, 16, 23, 42])

    .style("font-size", function(d) { return d + "px"; });
```

Real-Time Updating

Real-Time Updating

```javascript
// Adding data with .enter()

d3.select("body").selectAll("p")

    .data([4, 8, 15, 16, 23, 42])

    .enter().append("p")

    .text(function(d) { return "I'm number "+ d + "!"; });
```

```
// Updating existing elements

var p = d3.select("body").selectAll("p")

    .data([4, 8, 15, 16, 23, 42])

    .text(function(d) { return d; });



// Adding Nodes

p.enter().append("p")

    .text(function(d) { return d; });



// Removing Nodes

p.exit().remove();
```

Animations

Animations

```
// Fade background to black

d3.select("body").transition()

    .style("background-color", "black");


// resize circles in map w/ staggered delay

d3.selectAll("circle").transition()

    .duration(750)

    .delay(function(d, i) { return i * 10; });

    .attr("r", function(d) { return Math.sqrt(d * scale); });
```
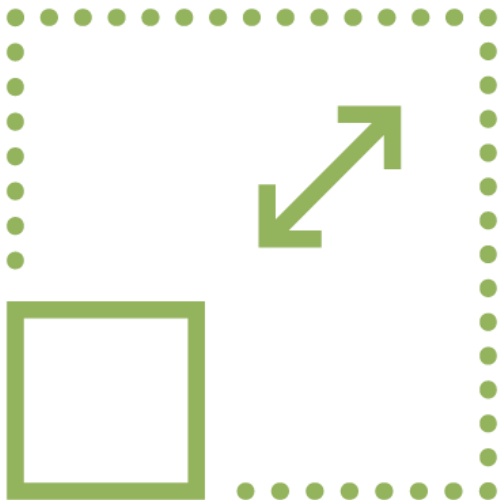
Interactivity
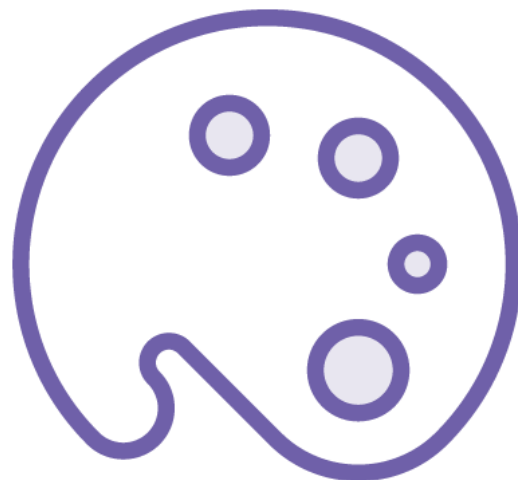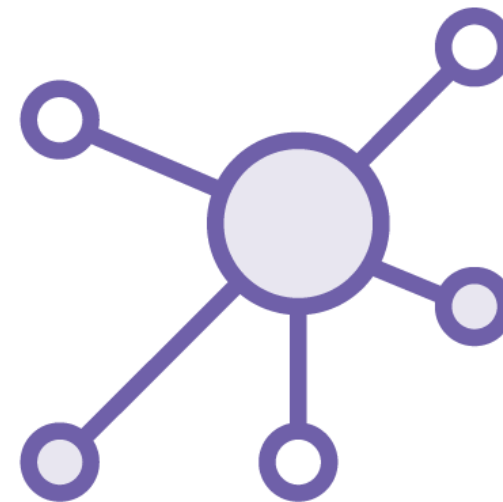
Built-in D3 Behaviors

Drag

Zoom

Additional Interactivity Examples

Collapsible

Brushing

Filtering

Where to Find More

Where to Find More

Pluralsight Courses

- D3.js Fundamentals

- Geospatial Mapping in D3

- Force Layout Graphs in D3

External

- bensullins.com/d3bigpicture-m2