

Minimizing Elements

Strategies

- Simple: Remove nonessentials

Remove Nonessentials

```
1 var points = svg.selectAll("g")
2   .data(data)
3   .enter()
4   .append("g")
5   .attr("transform", function(d) {
6     return "translate(" + d[0] + "," + d[1] + ")";
7   });
8
9 points.append("circle").attr("r", 5);
10 points.append("text").text("label");
```

Strategies

- Simple: Remove nonessentials
- Use canvas backend

Use Canvas Backend

```
1 var canvas = document.querySelector('canvas');
2
3 var ctx = canvas.getContext('2d');
4
5 var line = d3.line()
6   .x(function(d) { return x(d.date); })
7   .y(function(d) { return y(d.value); });
8
9 var path = d3.select('svg').selectAll('path').data([svgData]);
10 path.datum(data).attr("d", line);
11
12 line.context(ctx)(data);
```

Strategies

- Remove nonessentials
- Use canvas backend
- Filter data

Filter Data

```
svg.selectAll("circle")  
  .data(data)  
  .enter()  
  .filter(function(d) { return d.x > 0; })  
  .append("circle")  
  .attr({ "cx": x(d.x), "cy": y(d.y), "r": 5 });
```

Strategies

- Remove nonessentials
- Use canvas backend
- Filter data
- Use paths instead of many elements

Using Paths

```
svg.selectAll("circle").data(data)
  .enter()
  .append("circle")
  .attr("r",function(d,i) { return 3; })
  .attr("cx",function(d,i) { return x(d.date); })
  .attr("cy",function(d,i) { return y(d.value); });
}
```

Using Paths

```
var line = d3.line()  
  .x(function(d) { return x(d.date); })  
  .y(function(d) { return y(d.value); });  
svg.append("path")  
  .datum(data)  
  .attr("d", line)  
  .style("fill", "none")  
  .style("stroke", "black");
```

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