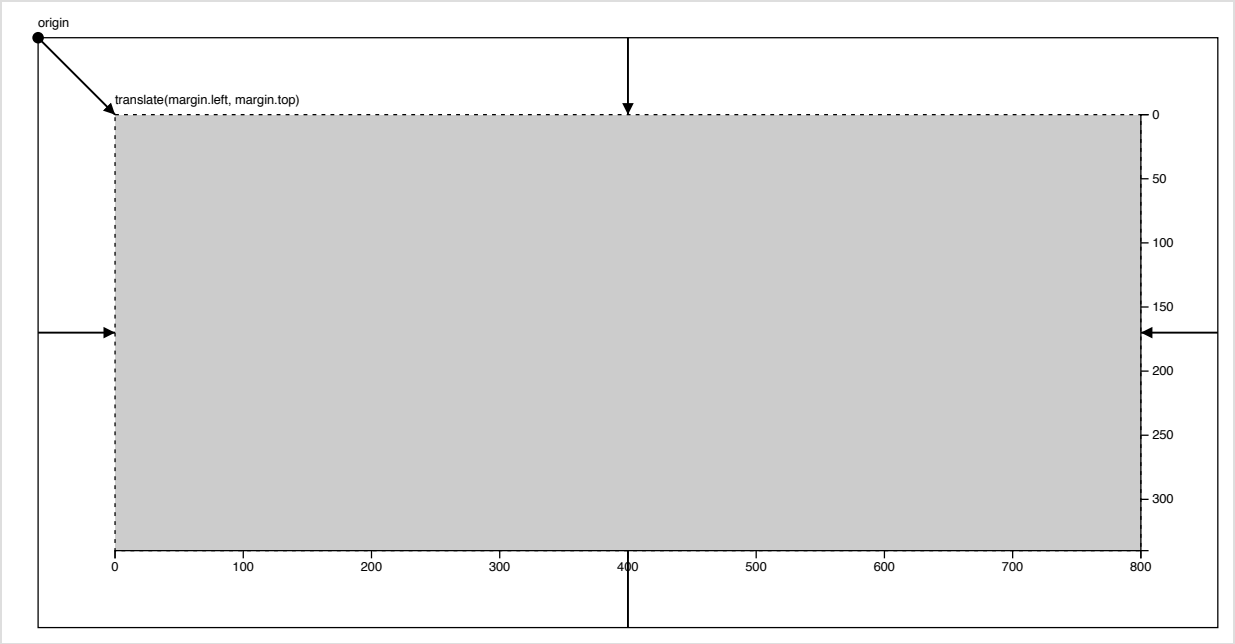
mbostock's block #3019563 June 29, 2012

Margin Convention



First define the `margin` object with properties for the four sides (clockwise from the top, as in CSS).

Open in a new window.

```
var margin = {top: 20, right: 10, bottom: 20, left: 10};
```

Then define `width` and `height` as the inner dimensions of the chart area.

```
var width = 960 - margin.left - margin.right,
    height = 500 - margin.top - margin.bottom;
```

Lastly, define `svg` as a G element that translates the origin to the top-left corner of the chart area.

```
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 + ")");
```

With this convention, all subsequent code can ignore margins. For example, to create *x* and *y* scales, simply say:

```
var x = d3.scale.linear()
    .range([0, width]);

var y = d3.scale.linear()
    .range([height, 0]);
```

If you want to add axes to the chart, they will be positioned correctly by default in the "left" and "top" orientations. For "right" or "bottom" orientation, translate the axis G element by the width or height, respectively.

index.html

```
<!DOCTYPE html>
<meta charset="utf-8">
<style>

body {
  font: 10px sans-serif;
}

.axis line,
.axis path {
  fill: none;
  stroke: #000;
  shape-rendering: crispEdges;
}

.arrow {
  stroke: #000;
  stroke-width: 1.5px;
}

.outer,
.inner {
  shape-rendering: crispEdges;
}

.outer {
  fill: none;
  stroke: #000;
}

.inner {
  fill: #ccc;
  stroke: #000;
  stroke-dasharray: 3, 4;
}

</style>
<body>
<script src="//d3js.org/d3.v3.min.js"></script>
<script>

var margin = {top: 20, right: 20, bottom: 20, left: 20},
    padding = {top: 60, right: 60, bottom: 60, left: 60},
    outerWidth = 960,
    outerHeight = 500,
    innerWidth = outerWidth - margin.left - margin.right,
    innerHeight = outerHeight - margin.top - margin.bottom,
    width = innerWidth - padding.left - padding.right,
    height = innerHeight - padding.top - padding.bottom;

var x = d3.scale.identity()
    .domain([0, width]);

var y = d3.scale.identity()
    .domain([0, height]);

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

var yAxis = d3.svg.axis()
    .scale(y)
    .orient("right");

var svg = d3.select("body").append("svg")
```

```
    .attr("width", outerWidth)
    .attr("height", outerHeight)
  .append("g")
    .attr("transform", "translate(" + margin.left + "," + margin.top + ")");

var defs = svg.append("defs");

defs.append("marker")
    .attr("id", "triangle-start")
    .attr("viewBox", "0 0 10 10")
    .attr("refX", 10)
    .attr("refY", 5)
    .attr("markerWidth", -6)
    .attr("markerHeight", 6)
    .attr("orient", "auto")
  .append("path")
    .attr("d", "M 0 0 L 10 5 L 0 10 z");

defs.append("marker")
    .attr("id", "triangle-end")
    .attr("viewBox", "0 0 10 10")
    .attr("refX", 10)
    .attr("refY", 5)
    .attr("markerWidth", 6)
    .attr("markerHeight", 6)
    .attr("orient", "auto")
  .append("path")
    .attr("d", "M 0 0 L 10 5 L 0 10 z");

svg.append("rect")
    .attr("class", "outer")
    .attr("width", innerWidth)
    .attr("height", innerHeight);

var g = svg.append("g")
    .attr("transform", "translate(" + padding.left + "," + padding.top + ")");

g.append("rect")
    .attr("class", "inner")
    .attr("width", width)
    .attr("height", height);

g.append("g")
    .attr("class", "x axis")
    .attr("transform", "translate(0," + height + ")")
    .call(xAxis);

g.append("g")
    .attr("class", "y axis")
    .attr("transform", "translate(" + width + ",0)")
    .call(yAxis);

svg.append("line")
    .attr("class", "arrow")
    .attr("x2", padding.left)
    .attr("y2", padding.top)
    .attr("marker-end", "url(#triangle-end)");

svg.append("line")
    .attr("class", "arrow")
    .attr("x1", innerWidth / 2)
    .attr("x2", innerWidth / 2)
    .attr("y2", padding.top)
    .attr("marker-end", "url(#triangle-end)");

svg.append("line")
    .attr("class", "arrow")
    .attr("x1", innerWidth / 2)
```

```
    .attr("x2", innerWidth / 2)
    .attr("y1", innerHeight - padding.bottom)
    .attr("y2", innerHeight)
    .attr("marker-start", "url(#triangle-start)");

svg.append("line")
    .attr("class", "arrow")
    .attr("x2", padding.left)
    .attr("y1", innerHeight / 2)
    .attr("y2", innerHeight / 2)
    .attr("marker-end", "url(#triangle-end)");

svg.append("line")
    .attr("class", "arrow")
    .attr("x1", innerWidth)
    .attr("x2", innerWidth - padding.right)
    .attr("y1", innerHeight / 2)
    .attr("y2", innerHeight / 2)
    .attr("marker-end", "url(#triangle-end)");

svg.append("text")
    .text("origin")
    .attr("y", -8);

svg.append("circle")
    .attr("class", "origin")
    .attr("r", 4.5);

g.append("text")
    .text("translate(margin.left, margin.top)")
    .attr("y", -8);

</script>
```

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