

# Drawing a Bar Chart with Data

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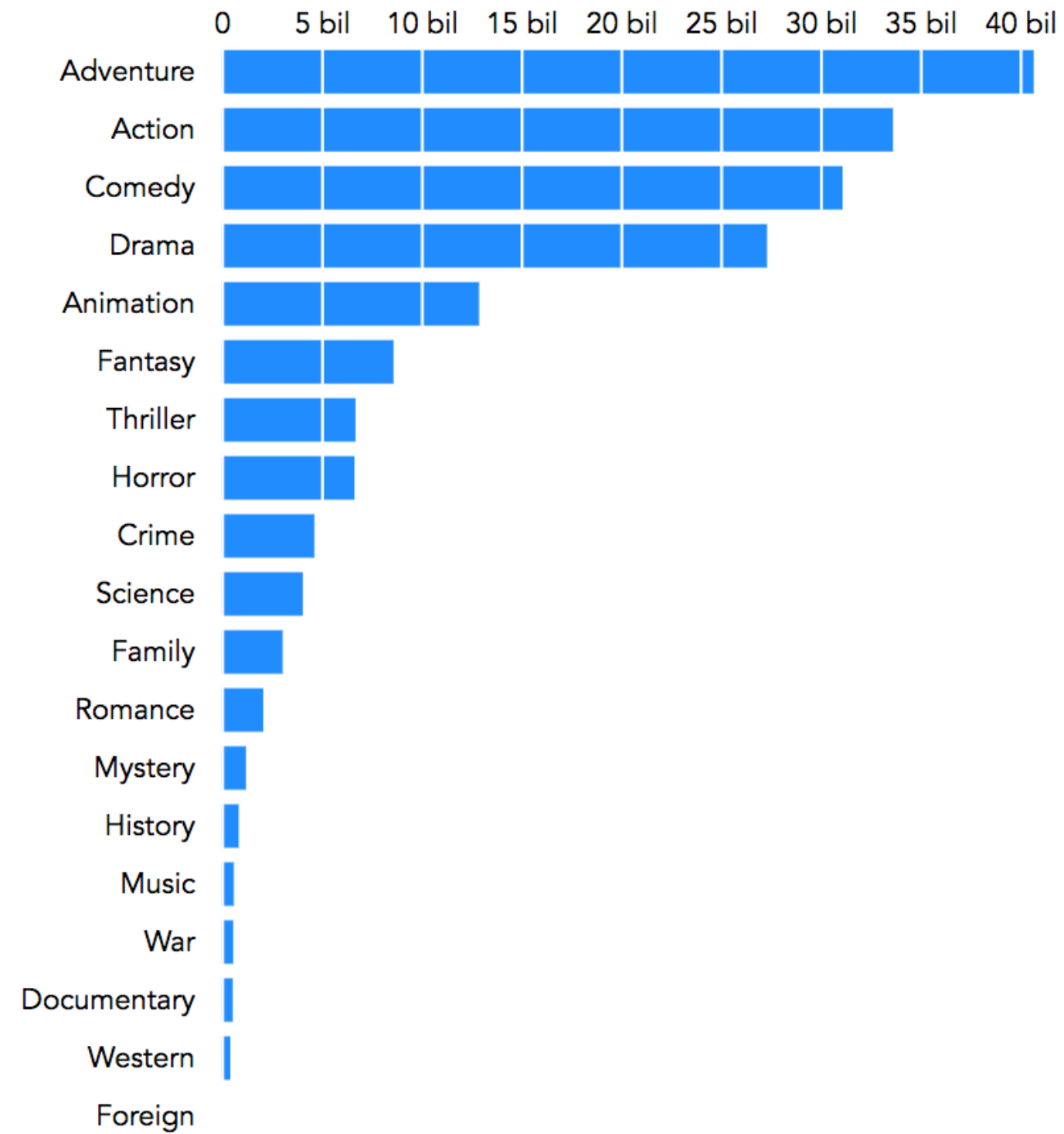
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VISUALIZATION DESIGNER AND DEVELOPER

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# Total revenue by genre in \$US

Films w/ budget and revenue figures, 2000-2009



# Overview


## Process

1. Transforming data
2. Chart dimensions
3. Scales
4. Join and draw
5. Axes
6. Refine

# Process

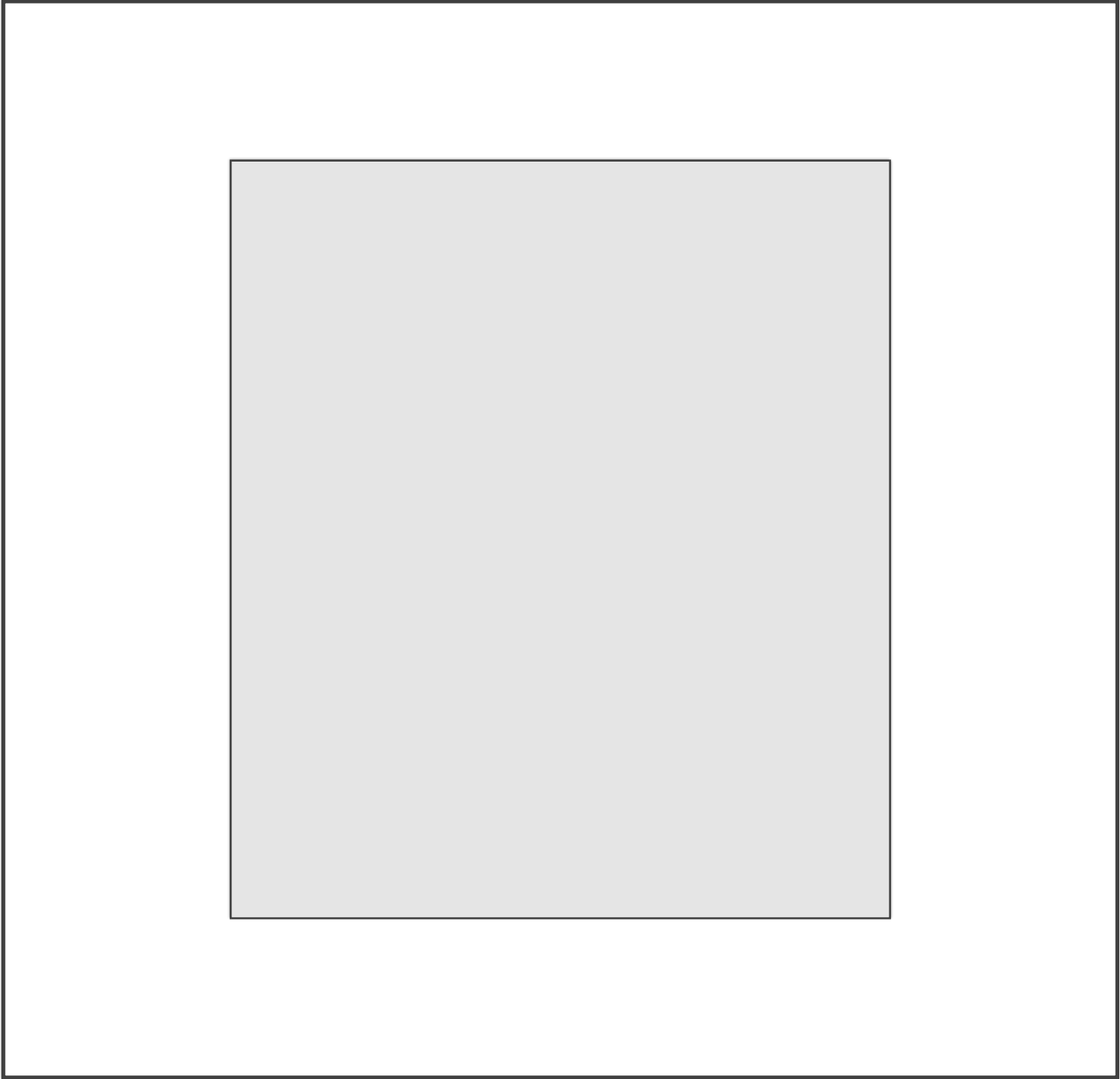
`<svg>`

`<g class="chart">`

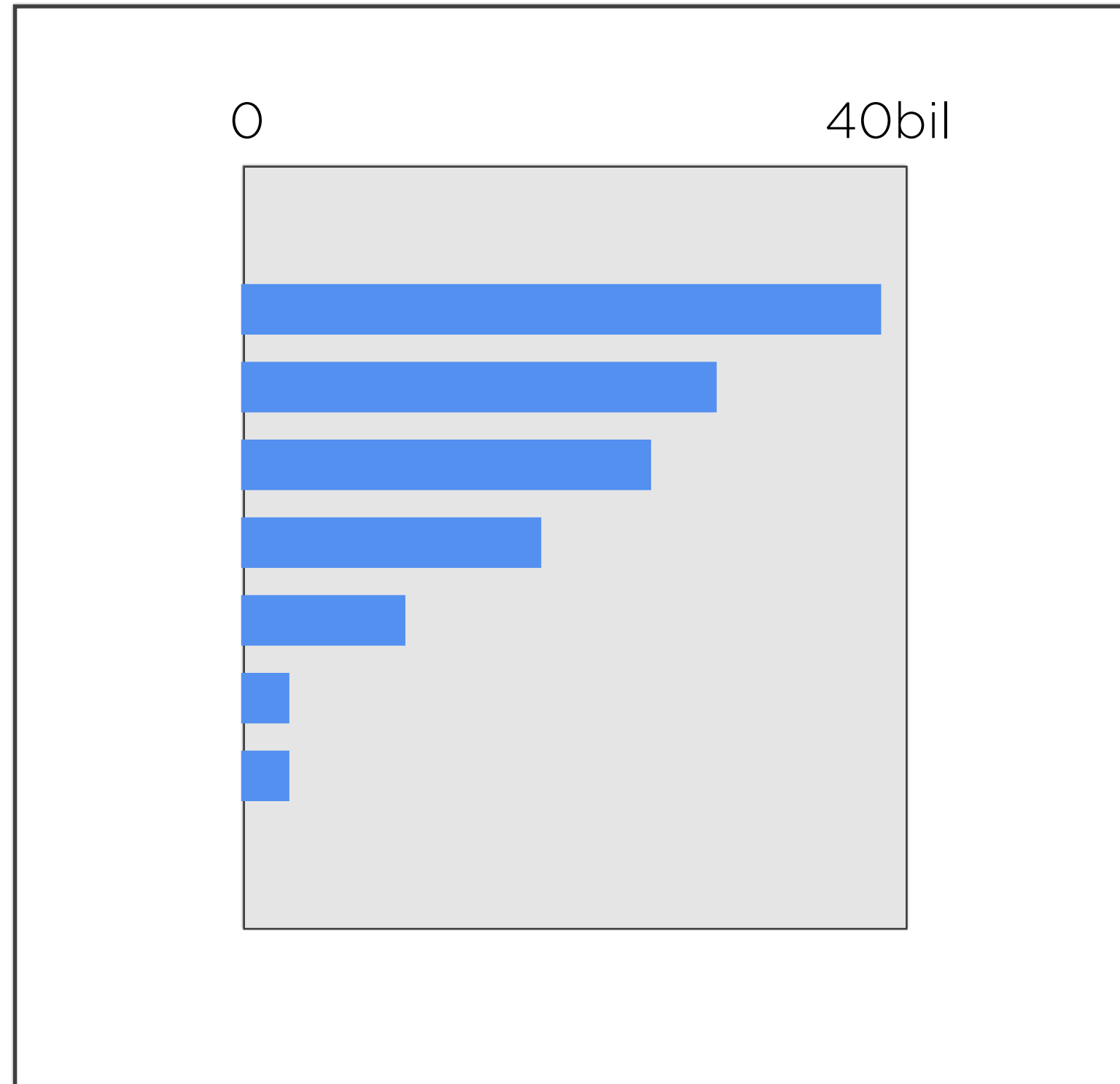


# Process

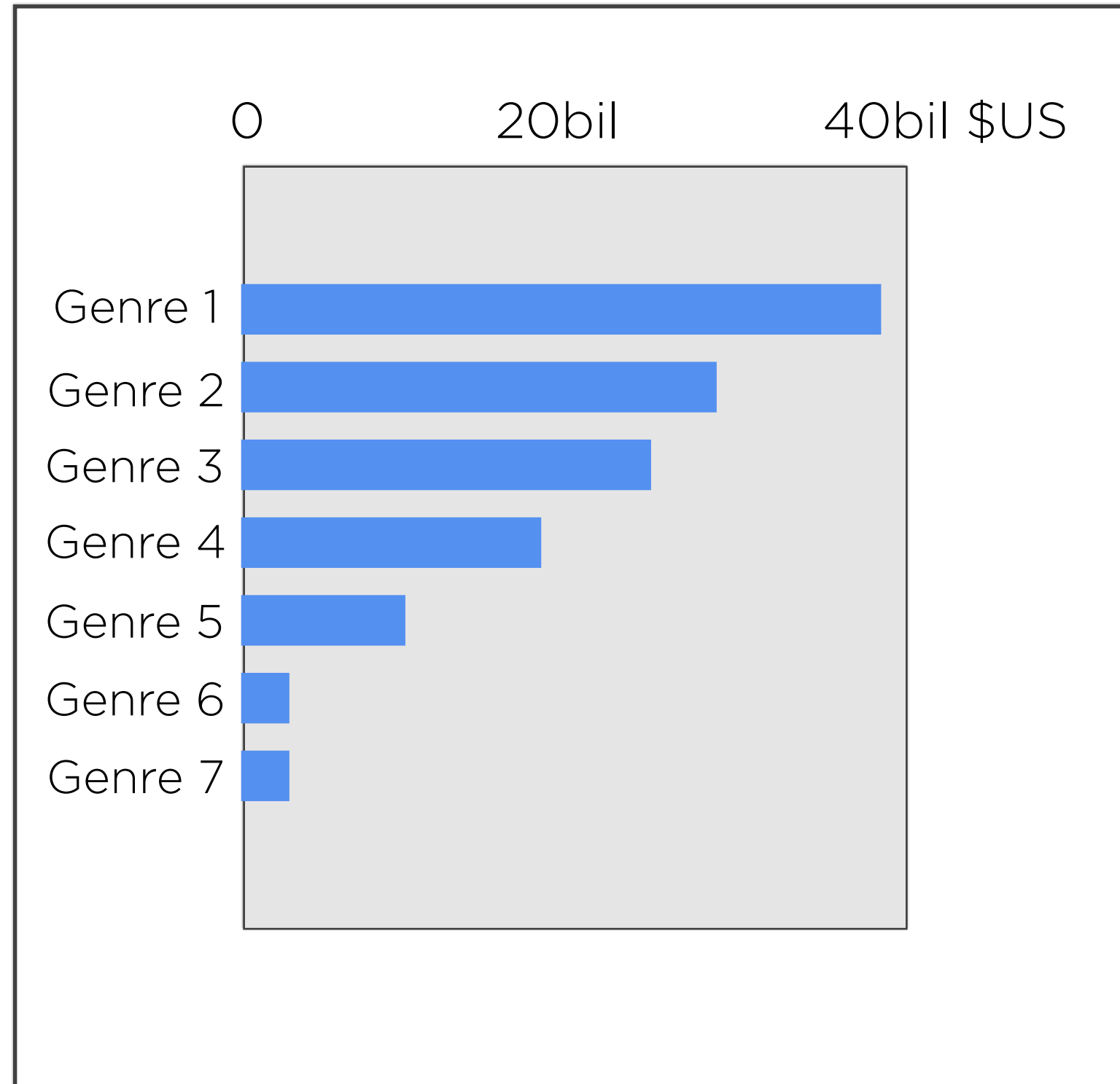
| Title   | Revenue |
|---------|---------|
| Genre 1 | 40bil   |
| Genre 2 | 32bil   |
| Genre 3 | 26bil   |
| ...     | ...     |
| Genre 8 | 0       |



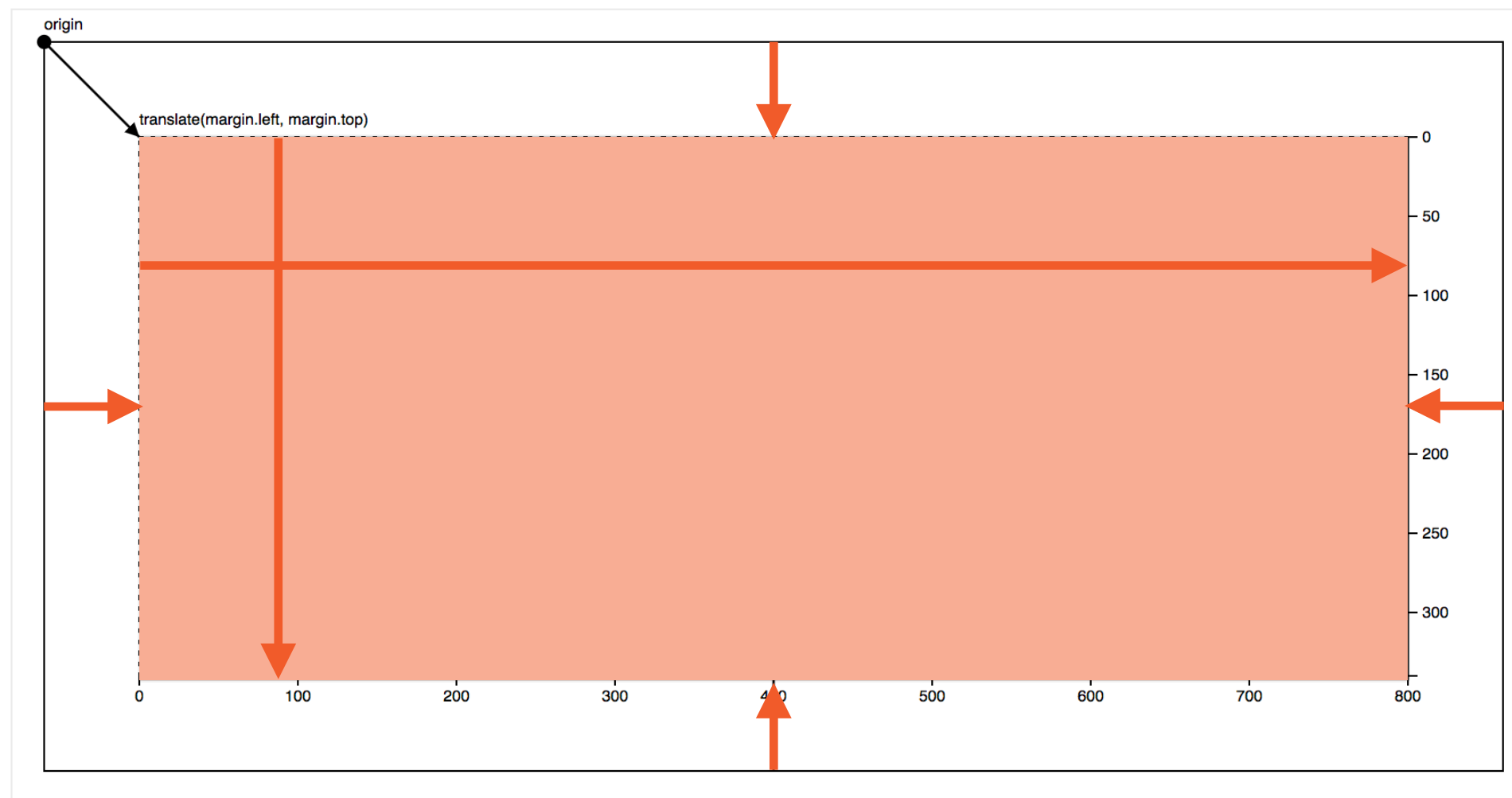
# Process



# Process



# Margin Convention



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

[Open](#)

```
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;
```



D3 scales can map your  
data values to screen space

# D3 Scales

0 •———— Data **domain** —————→ 40bil

0 •———— Output **range** —————→ 320

# D3 Scales

**domain**

0      10bil      20bil      30bil      40bil

**Scale**

**range**

0      80      160      240      320

# D3 Scales

domain

0

10bil

20bil

30bil

40bil

**Linear scale**

range

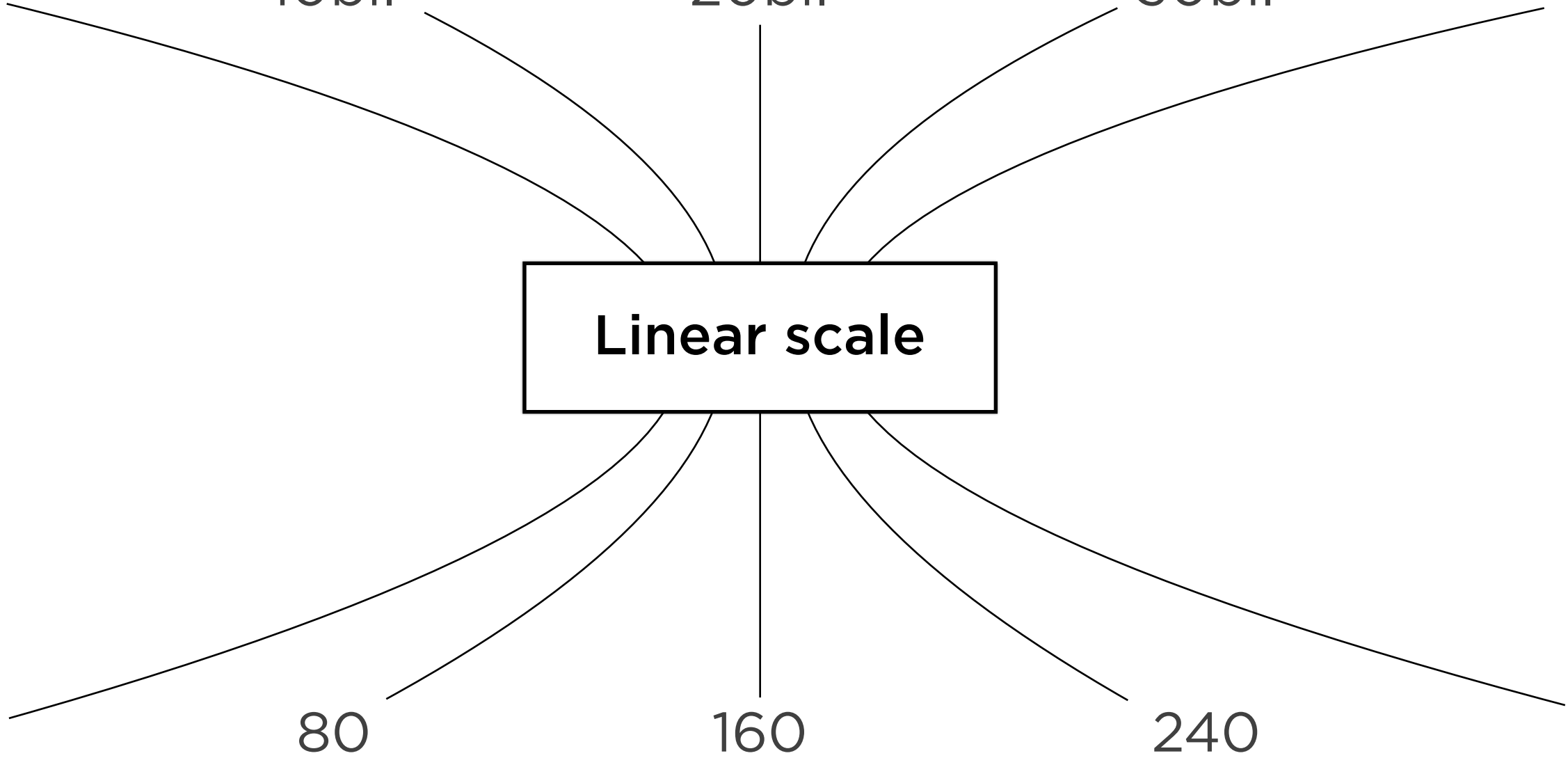
0

80

160

240

320



# D3 Scales

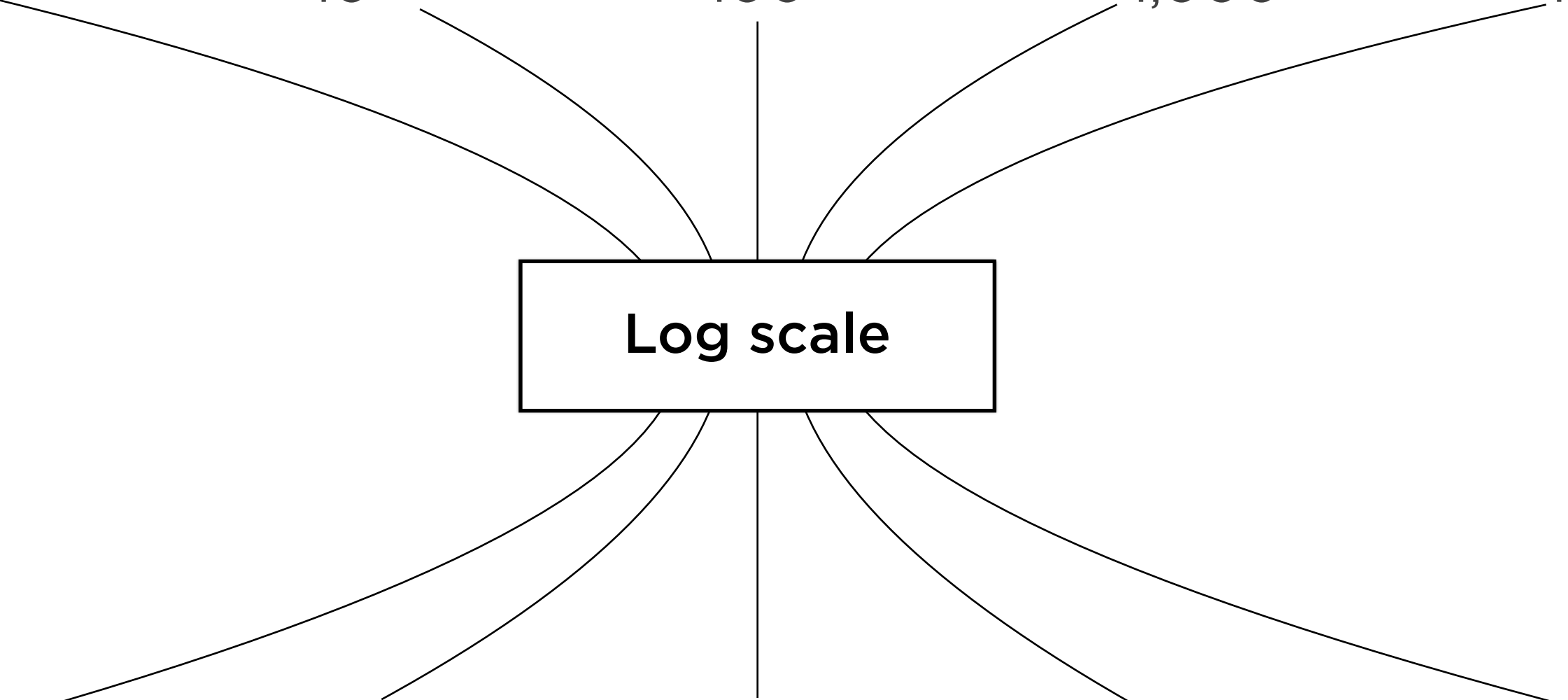
domain

1 10 100 1,000 10,000

**Log scale**

range

0 80 160 240 320



# D3 Scales

domain

0

10

20

30

40

**Color scale**

range

#F5F9FD

#D0DEEC

#8FB4D2

#1F3A71

#1F3A71



# D3 Scales

domain

Film 1

Film 2

Film 3

Film 4

Film 5

**Band Scale**

range

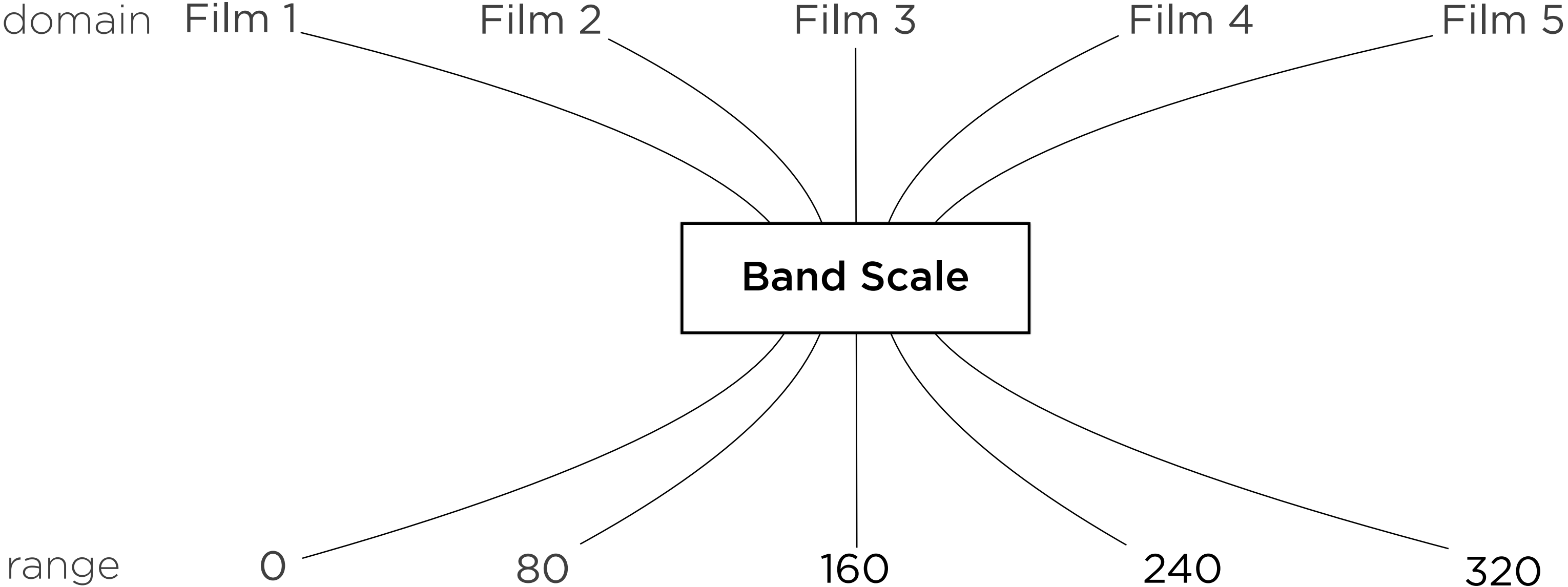
0

80

160

240

320



# The D3 Data Join

| Things  | Value |
|---------|-------|
| Thing 1 | 100   |
| Thing 2 | 70    |
| Thing 3 | 30    |
| Thing 4 | 10    |

1. As many visual elements as rows
2. Position and size based on values



# The D3 Data Join

| Things  | Value |
|---------|-------|
| Thing 1 | 100   |
| Thing 2 | 70    |
| Thing 3 | 30    |
| Thing 4 | 10    |



# The D3 Data Join

| Things  | Value |
|---------|-------|
| Thing 1 | 100   |
| Thing 2 | 70    |
| Thing 3 | 30    |
| Thing 4 | 10    |

100 70 30 10

# The D3 Data Join

| Things  | Value |
|---------|-------|
| Thing 1 | 100   |
| Thing 2 | 70    |
| Thing 3 | 30    |
| Thing 4 | 10    |

100

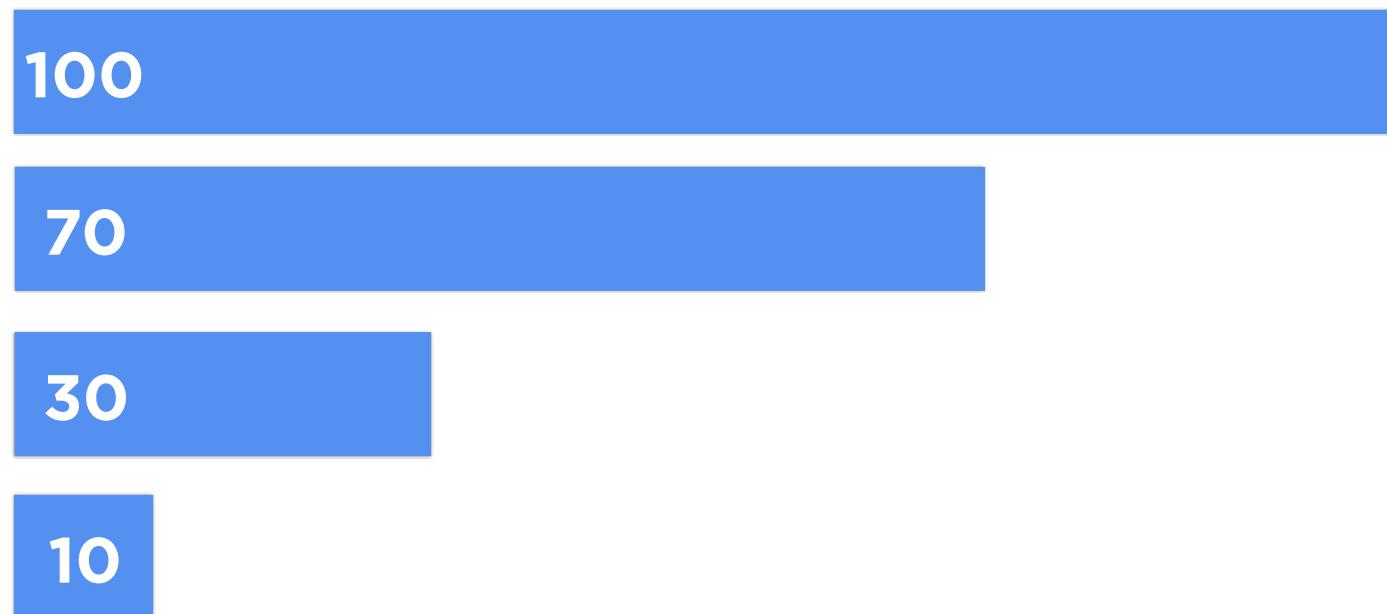
70

30

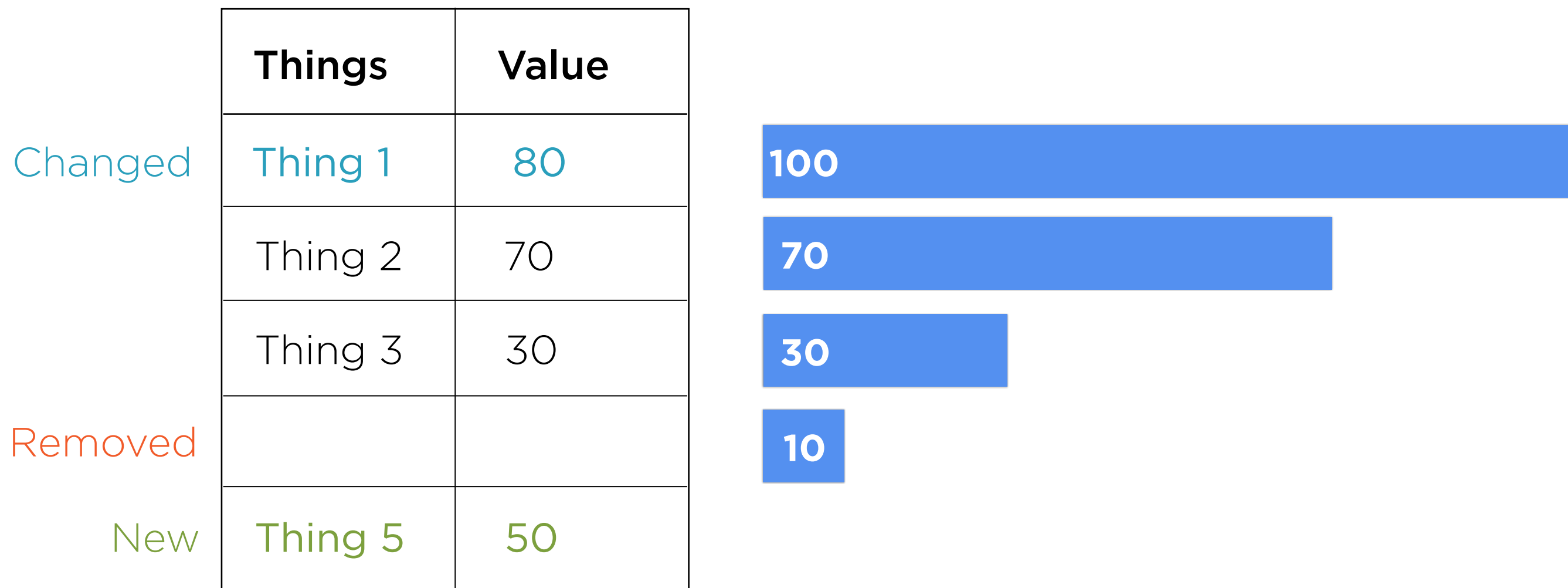
10

# The D3 Data Join

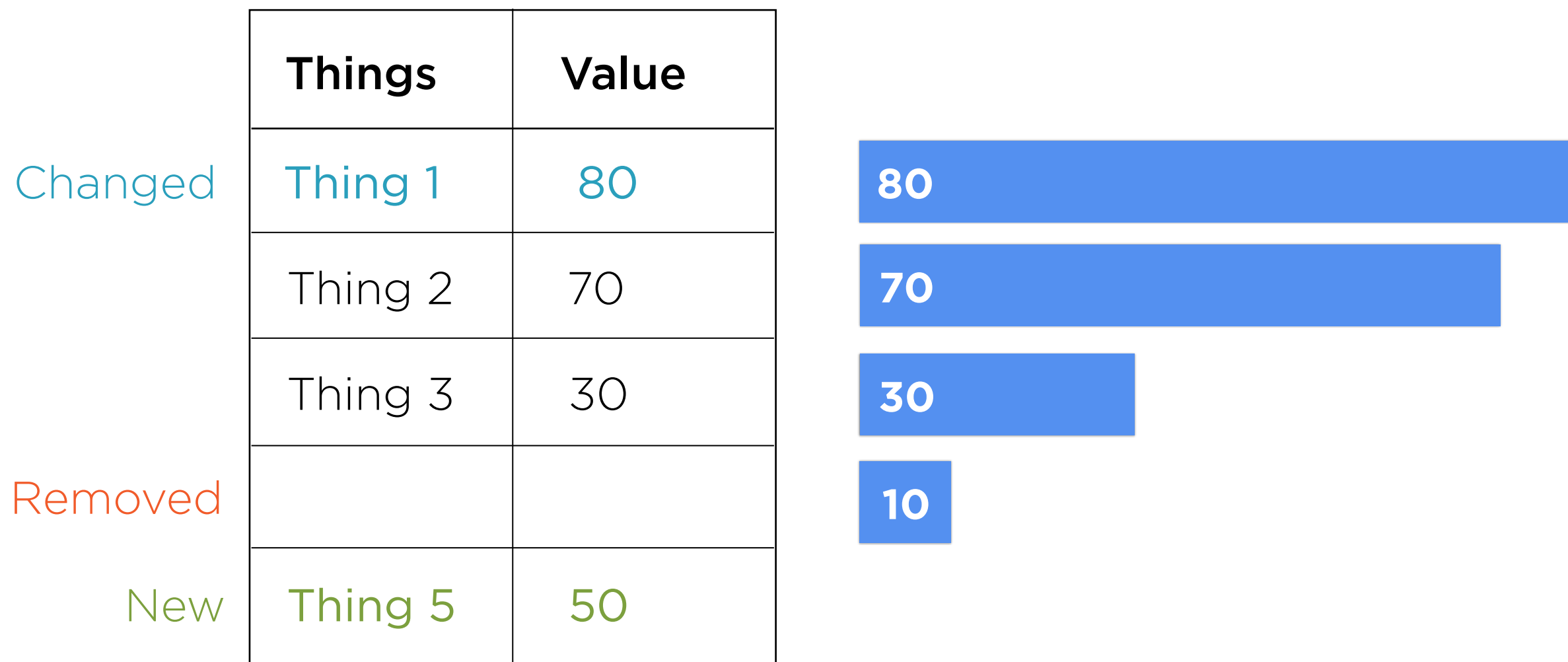
| Things  | Value |
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| Thing 3 | 30    |
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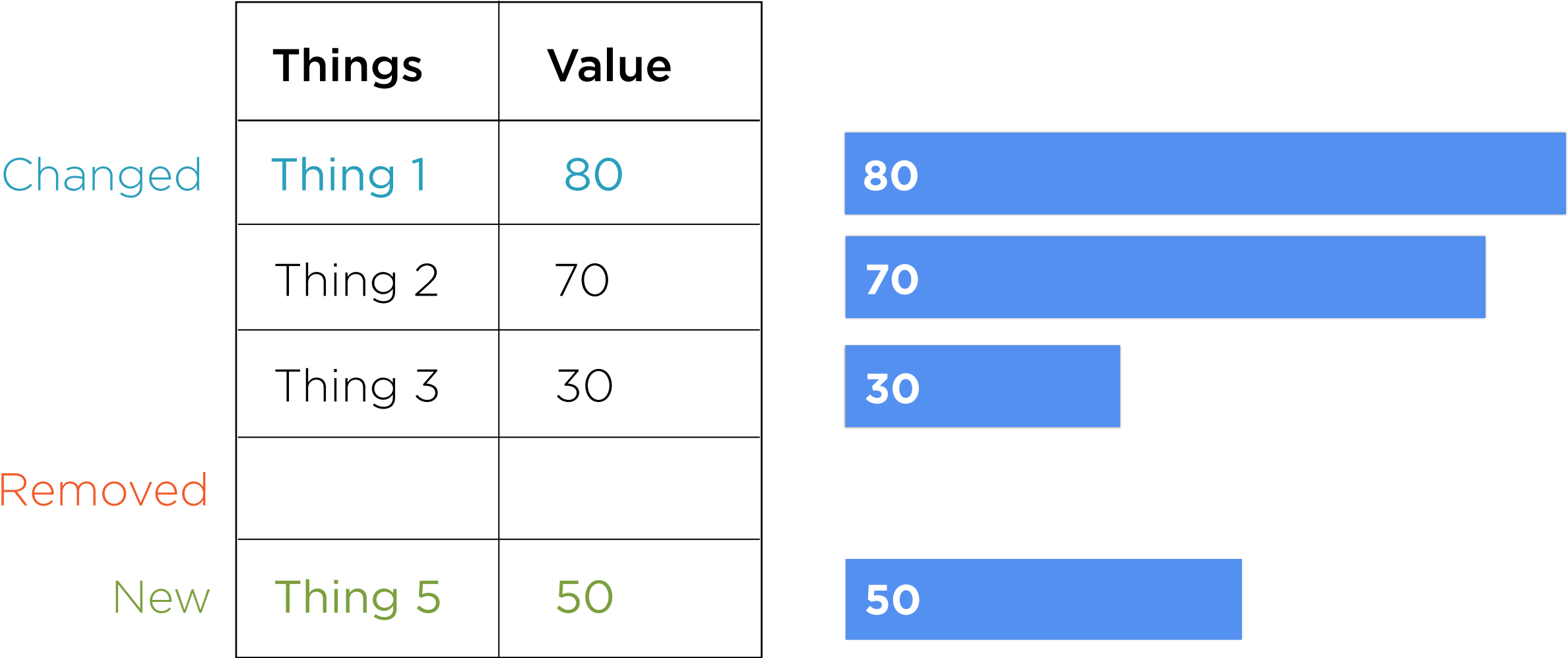
# The D3 Data Join



# The D3 Data Join



# The D3 Data Join



# Summary

**D3 chart**

**D3 concepts and process**

**Transforming data**

**Margin convention**

**D3 scales**

**D3 axis component**

**Data join**