

D3 Scatterplot Project

1: Design and Data Loading with Promises

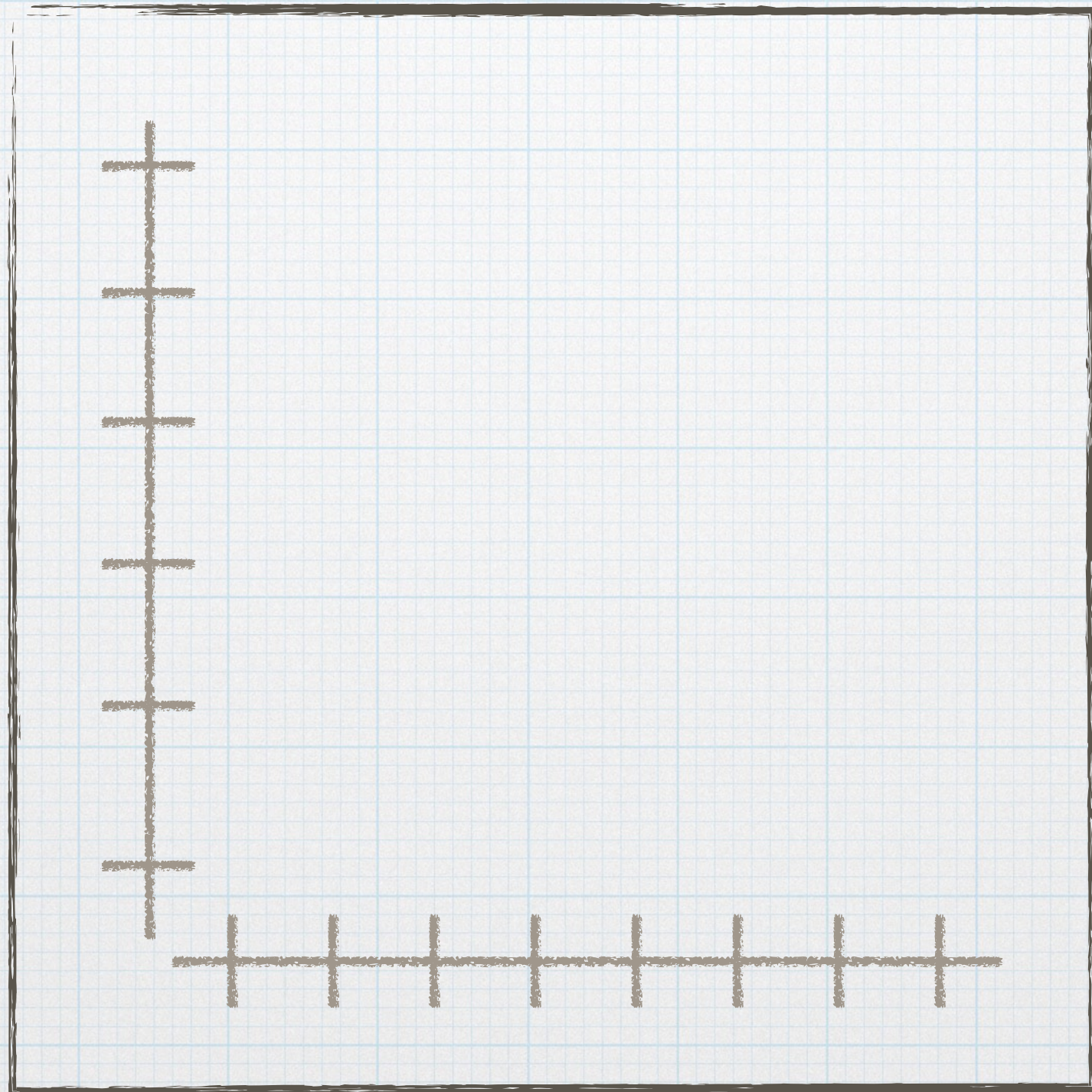
2: Scales

3: Axes

4: Drawing SVG and Interactivity

CONCEPT OF A SCALE

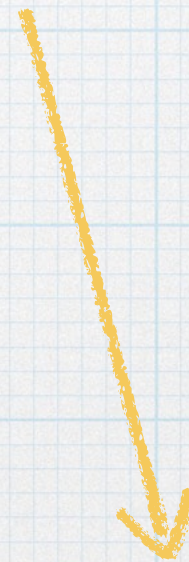
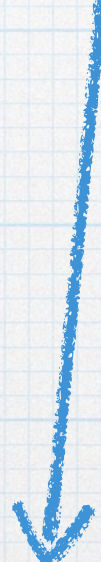
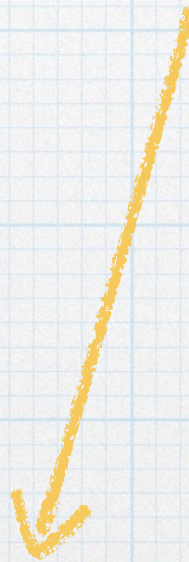
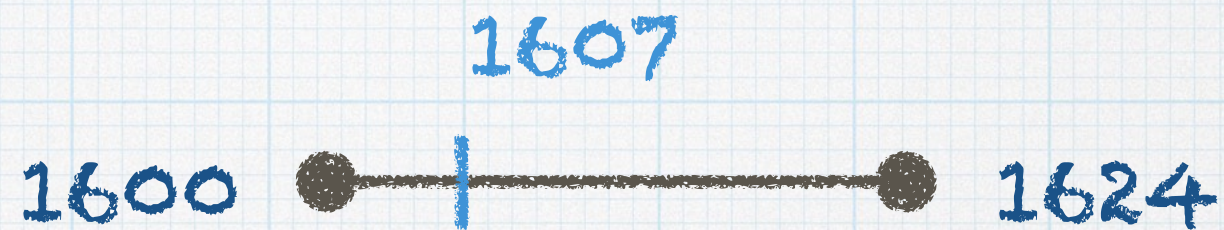
svg



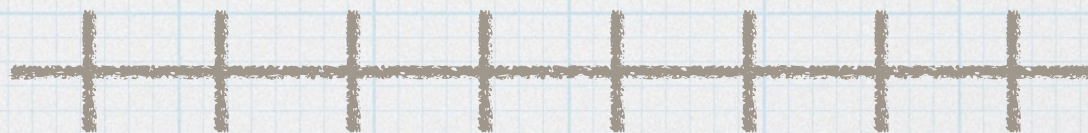
CONCEPT OF A SCALE

domain

year

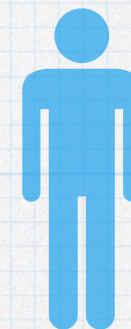


range

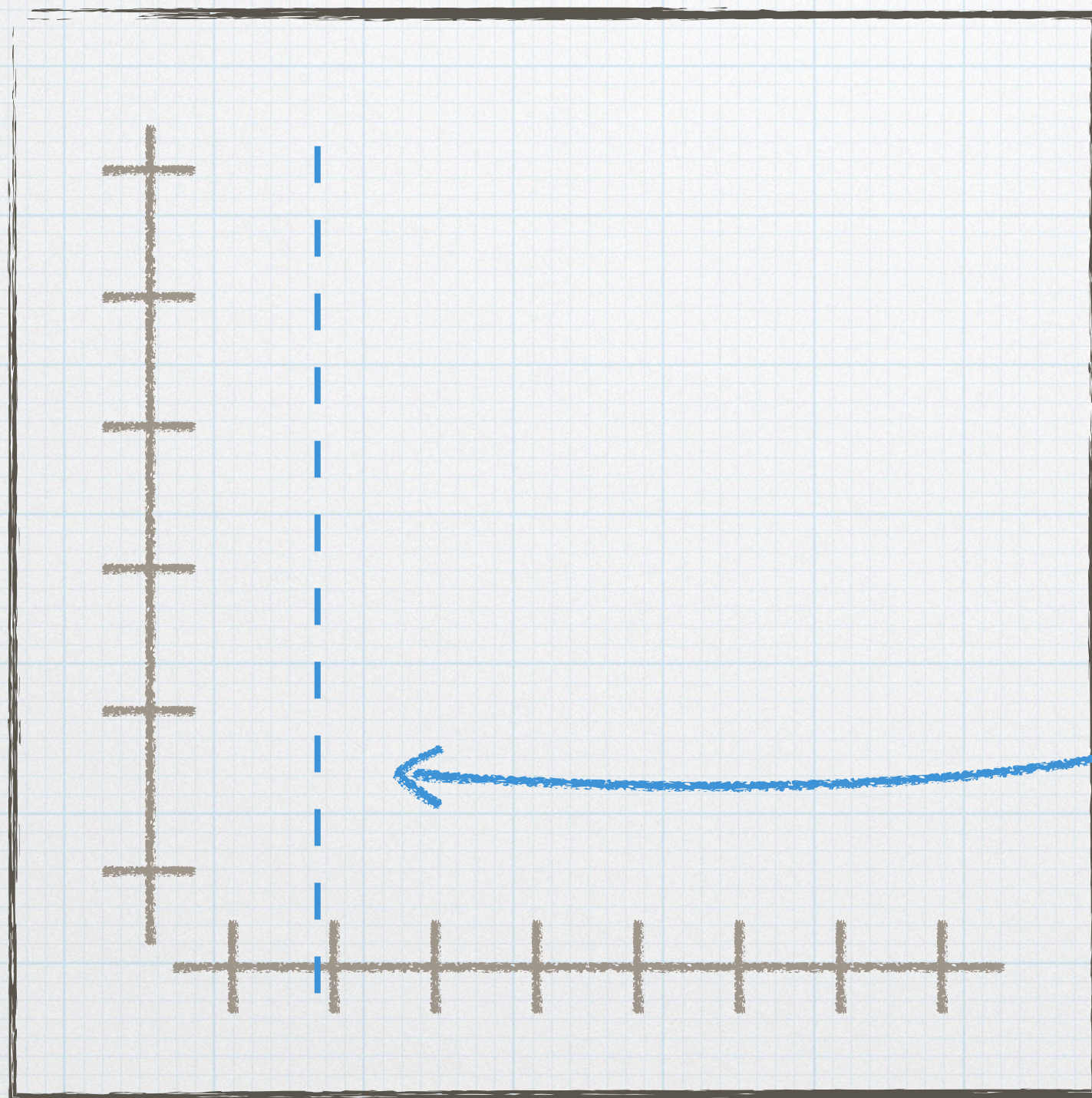


pixels on SVG
coordinate system

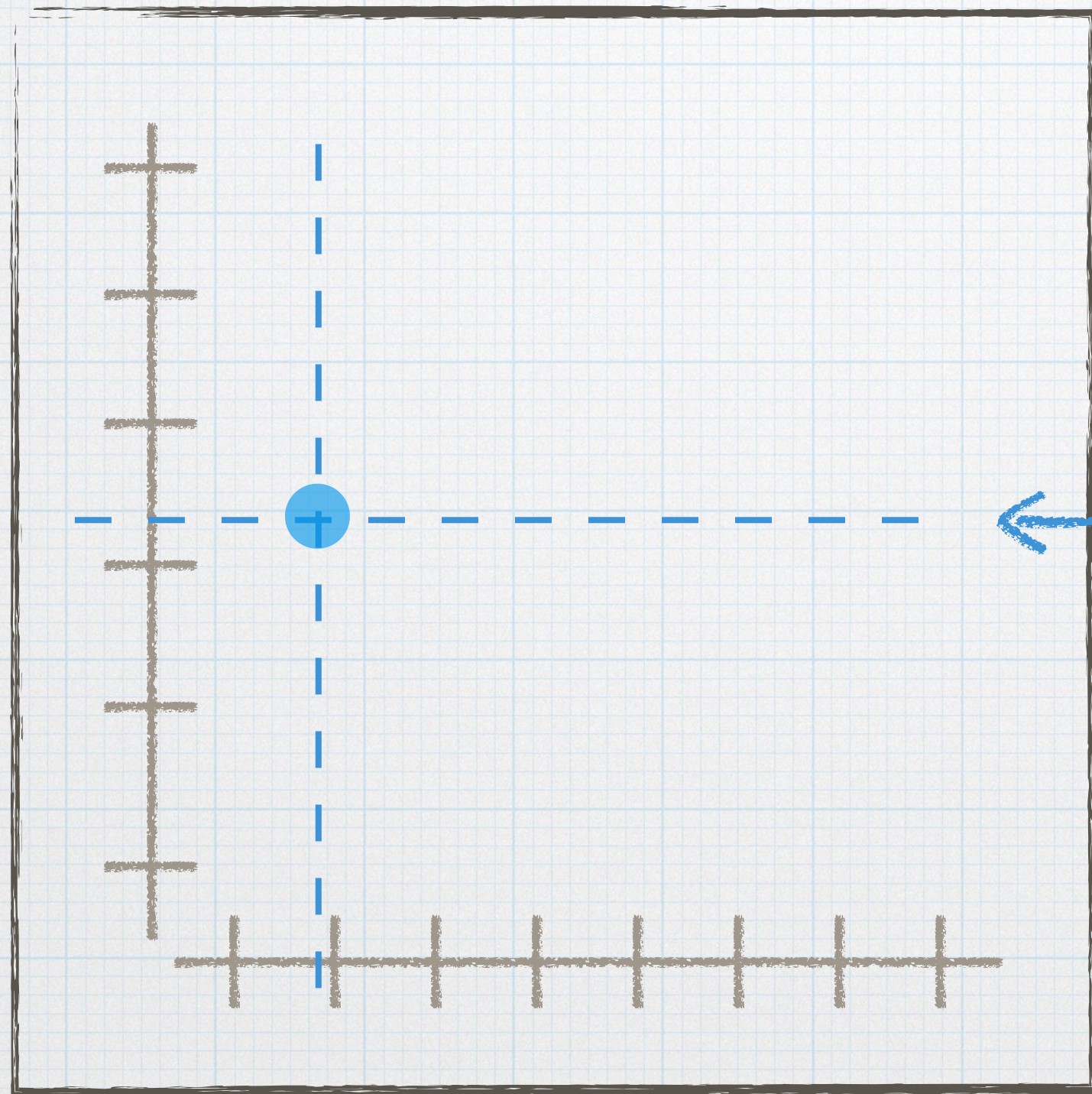
USING THE SCALE



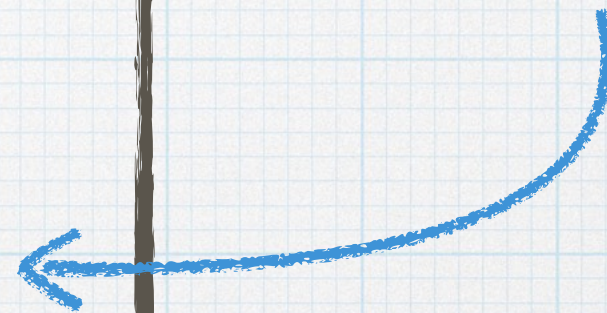
age 35 in 1607



USING THE SCALE



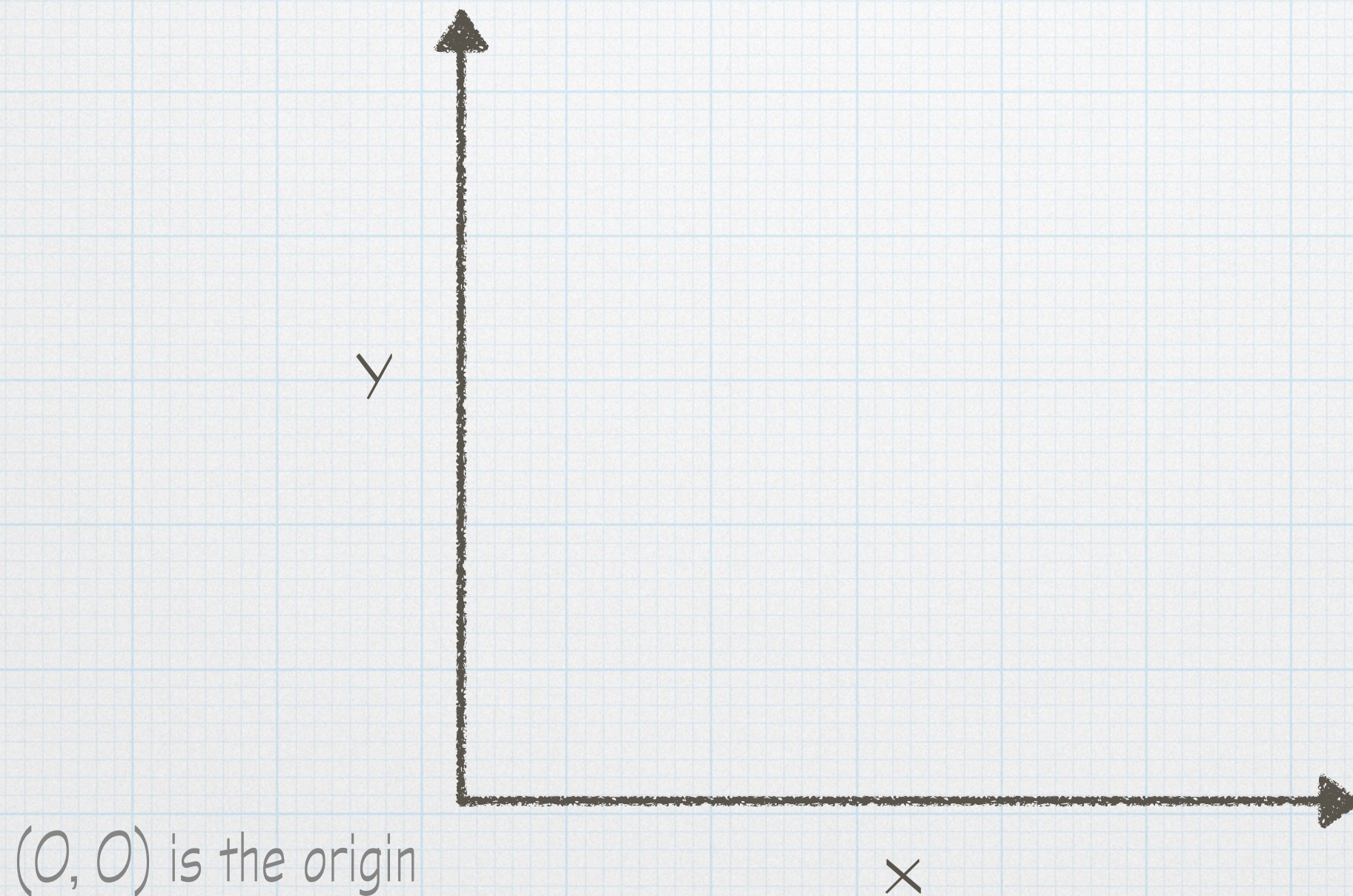
age 35 in 1607



KINDS OF SCALES

scale	description
<code>scaleLinear()</code>	both domain and range are continuous
<code>scaleSqrt()</code>	square root (useful for the areas of circles!)
<code>scalePow()</code>	exponential curves
<code>scaleLog()</code>	logarithmic curves (Richter scale, decibels)
<code>scaleQuantize()</code>	putting continuous data into defined “buckets”
<code>scaleQuantile()</code>	calculates “buckets” based on equal-sized groups
<code>scaleOrdinal()</code>	old “buckets” to new “buckets”
<code>scaleTime()</code>	establishing timelines

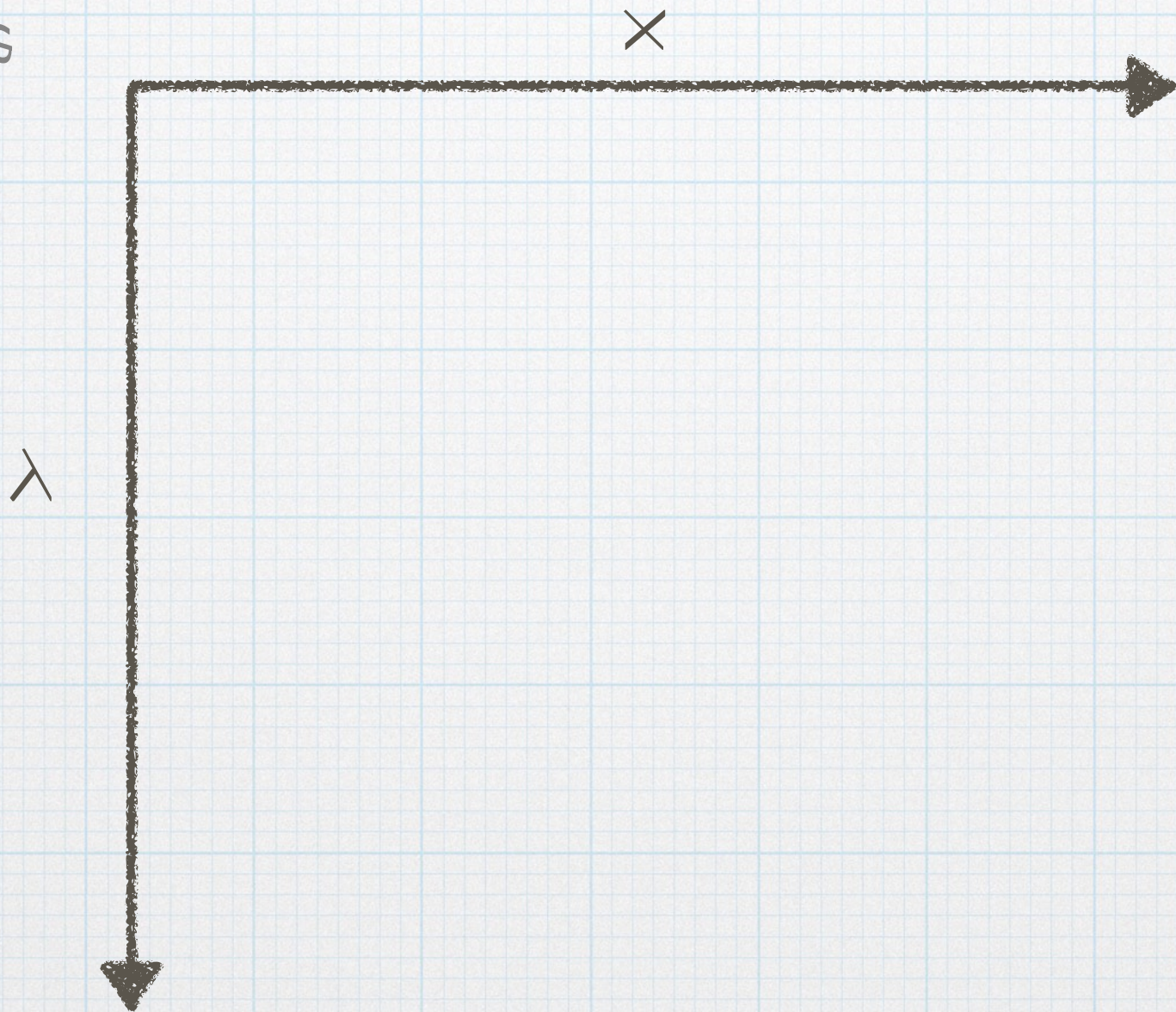
SVG COORDINATE GRID



2D COORDINATE GRID

upper-left corner

$(0, 0)$ is in the



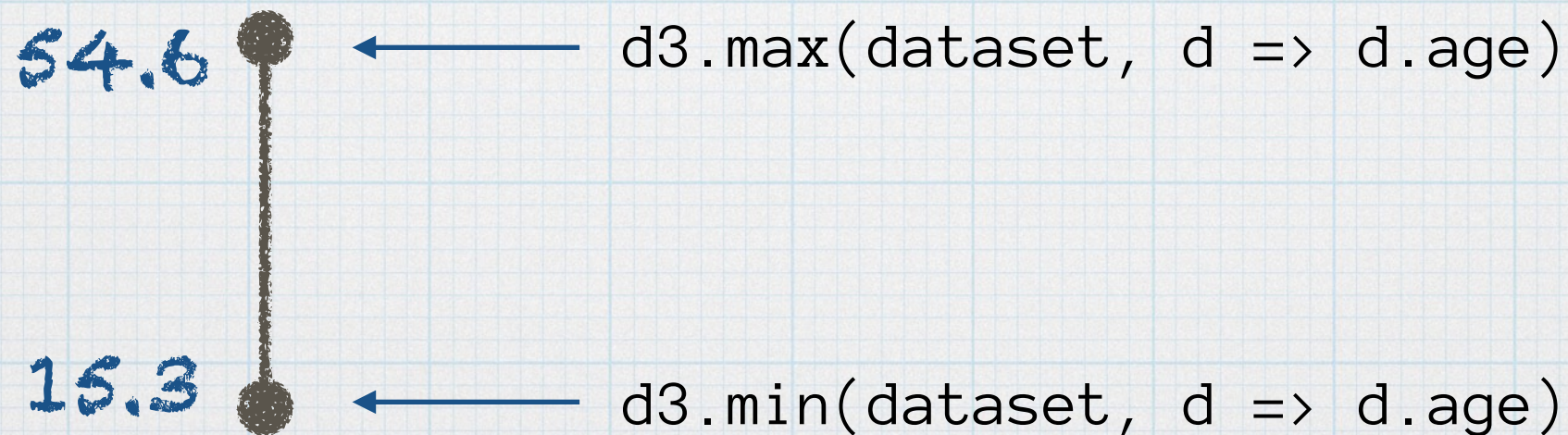
MINIMUM AND MAXIMUM

`d3.max( <dataset> , <callback function> )`

`d3.min( <dataset> , <callback function> )`

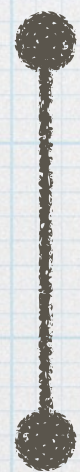
`{year: 1601, age: 33.9, gender: "M"}`

dataset



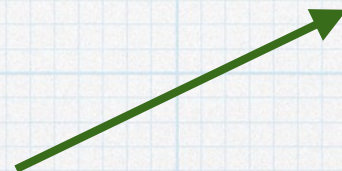
BUILDING THE Y SCALE

```
d3.scaleLinear()  
  .domain(  
    .range(  
    );
```

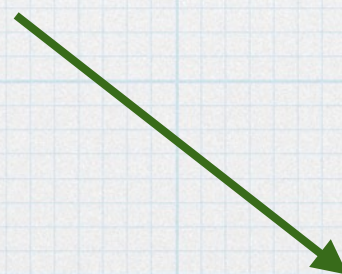


`d3.max(dataset, d => d.age)`

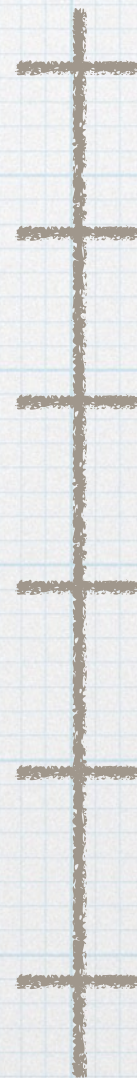
`d3.min(dataset, d => d.age)`



y = 50

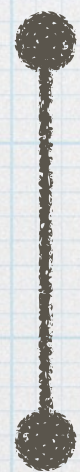


y = 550



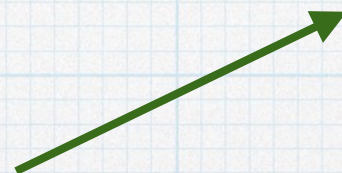
BUILDING THE Y SCALE

```
d3.scaleLinear()  
  .domain( [ , ] )  
  .range( [ , ] );
```

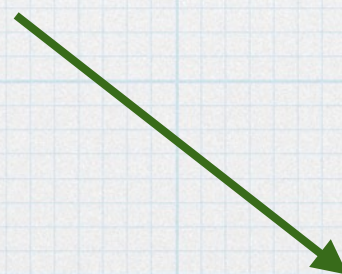


`d3.max(dataset, d => d.age)`

`d3.min(dataset, d => d.age)`



y = 50

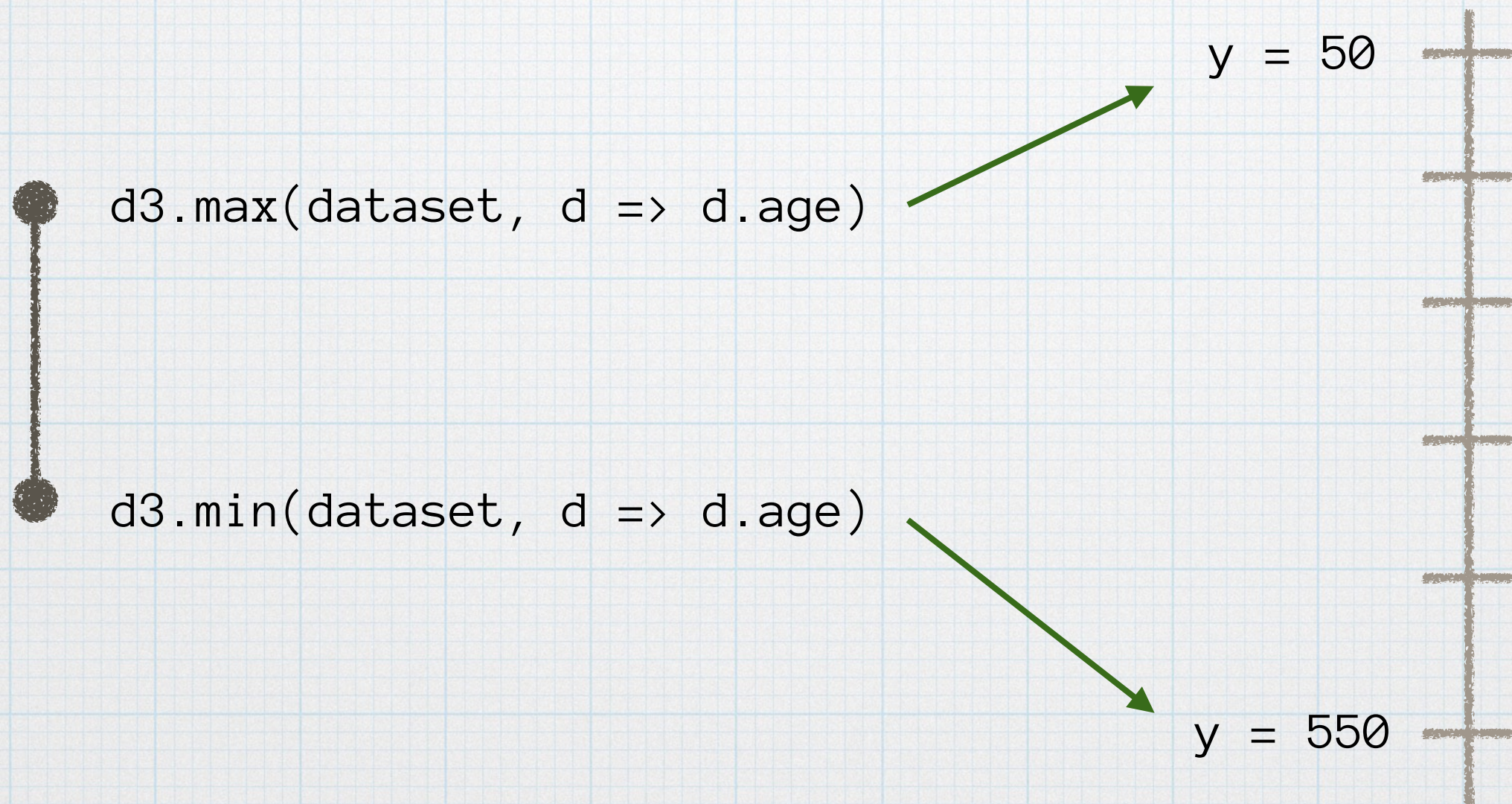


y = 550



BUILDING THE Y SCALE

```
d3.scaleLinear()  
  .domain( [d3.min(d, d => d.age), d3.max(d, d => d.age)] )  
  .range( [550, 50] );
```

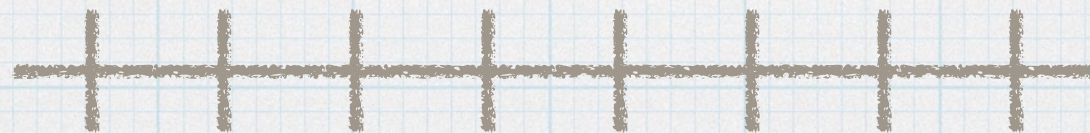


BUILDING THE X SCALE

```
d3.scaleLinear()  
  .domain( [ , ] )  
  .range( [ , ] );
```

```
d3.min(dataset, d => d.year)
```

1600 ●—————● 1624



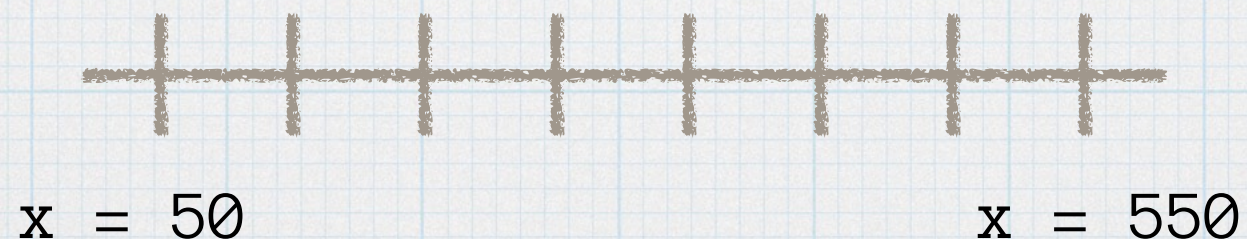
x = 50

BUILDING THE X SCALE

```
d3.scaleLinear()  
  .domain( [d3.min(d, d => d.year),           ] )  
  .range( [50,                               ] );
```

`d3.min(dataset, d => d.year)` `d3.max(dataset, d => d.year)`

1600 ●—————● 1624



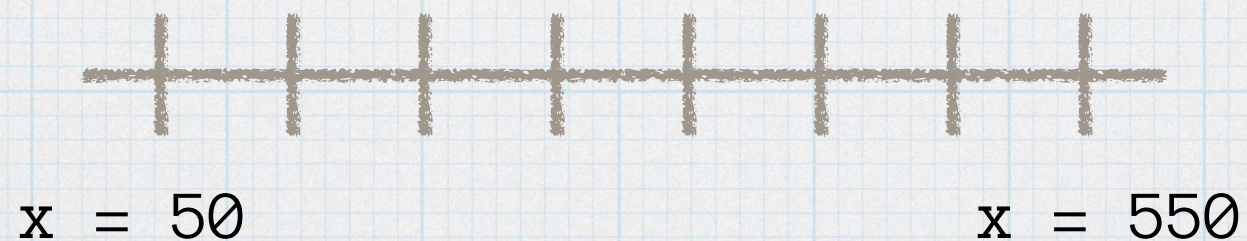
BUILDING THE X SCALE

```
d3.scaleLinear()  
  .domain( [d3.min(d, d => d.year), d3.max(d, d => d.year)] )  
  .range( [50, 550] );
```

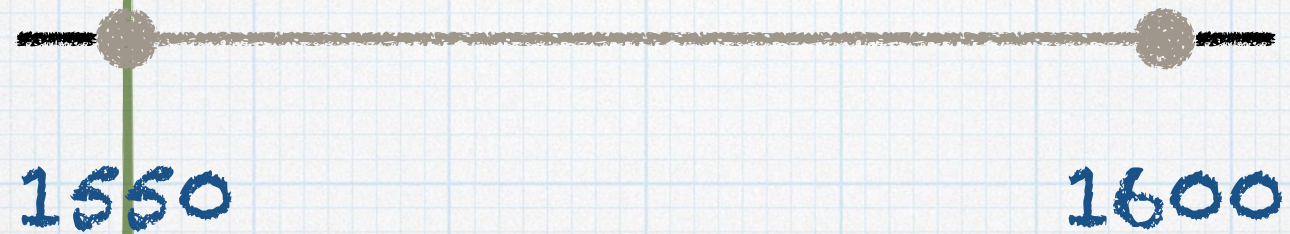
`d3.min(dataset, d => d.year)`

`d3.max(dataset, d => d.year)`

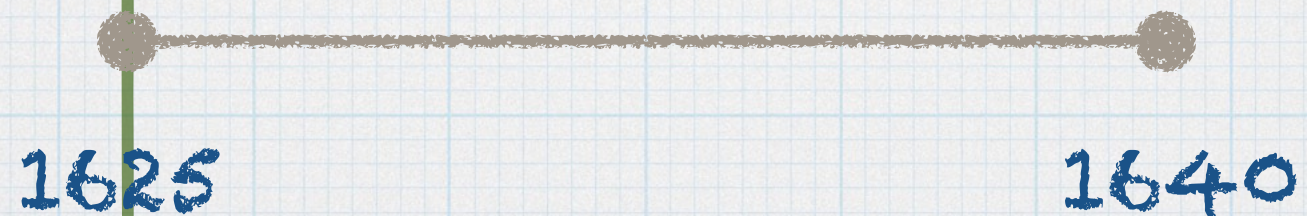
1600 ●—————● 1624



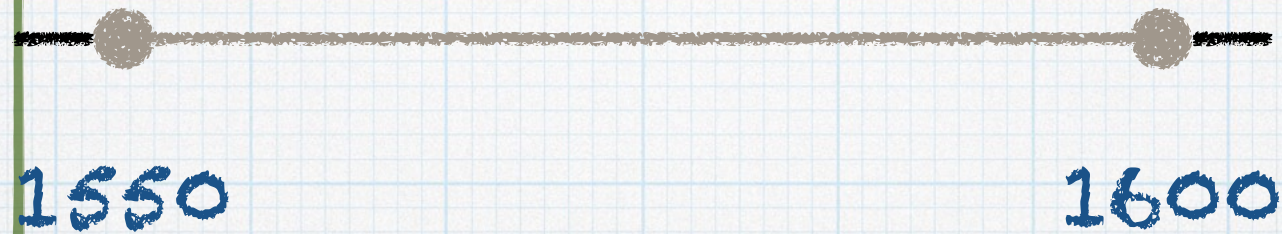
EXTENDING THE DOMAIN



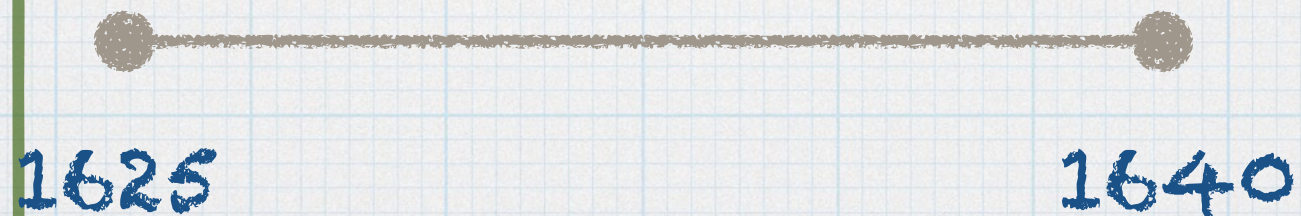
± 5 years



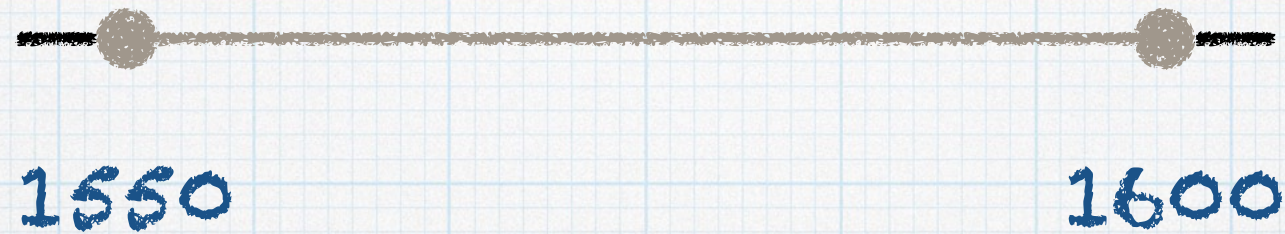
EXTENDING THE DOMAIN



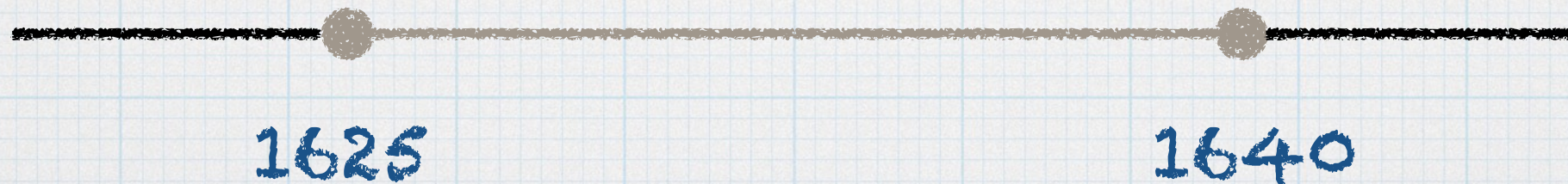
± 5 years



EXTENDING THE DOMAIN

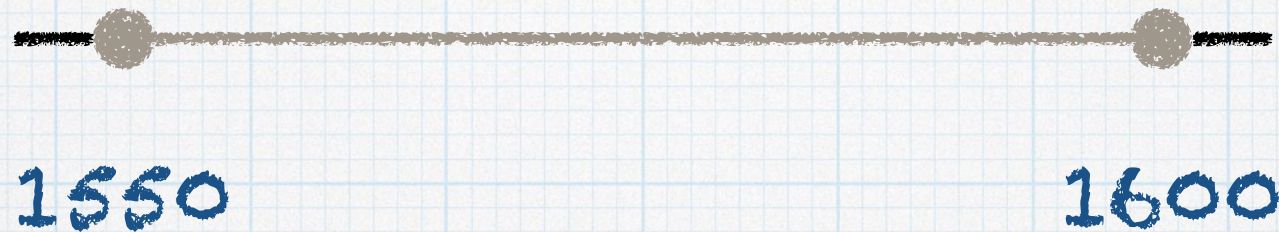


± 5 years

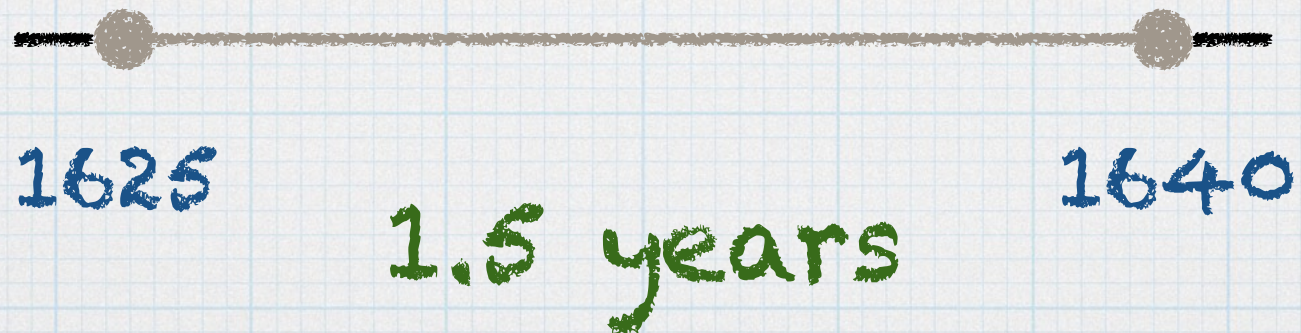


EXTENDING THE DOMAIN

5 years



$\pm 10\%$



1.5 years

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