Welcome to the course!

STATISTICAL TECHNIQUES IN TABLEAU

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Exploratory Data Analysis (EDA)

- Main characteristics of your data
- Spot extreme values
- Suggest hypotheses
- Assess assumptions

General goal: get an idea of the overall structure of your data

Univariate EDA

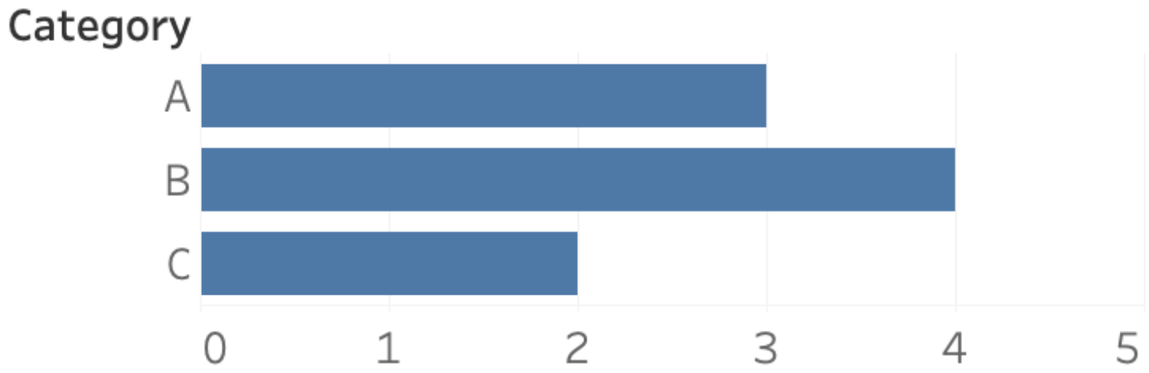
- Summary table
- Bar plot
- Histogram
- Box plot

Tables & bar plots

Visualize the distribution of a single, categorical variable

```
Category
A
B
A
B
B
C
A
B
C
```

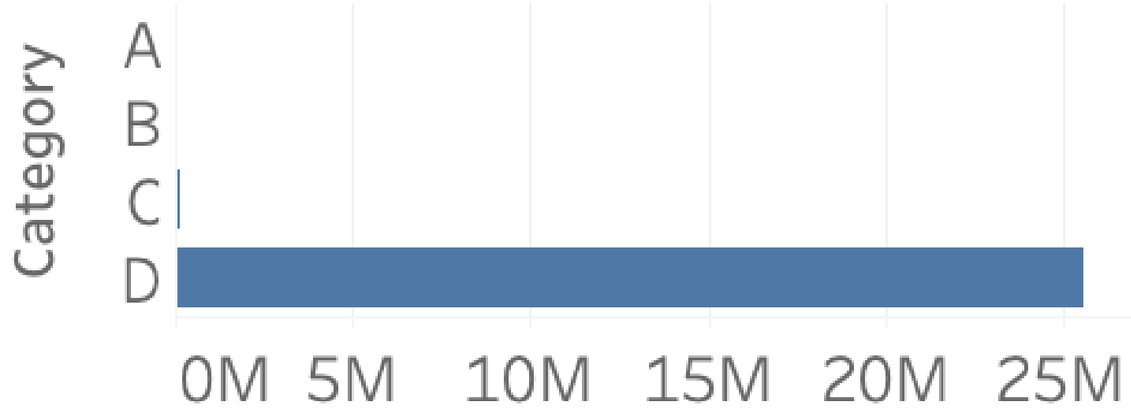
Category	
A	3
B	4
C	2



When to use a table vs. a plot

- Focus is on individual values (snapshot) and not on trends
- Dataset contains few values
- Small difference between values is crucial
- Data is presented in a non-interactive way

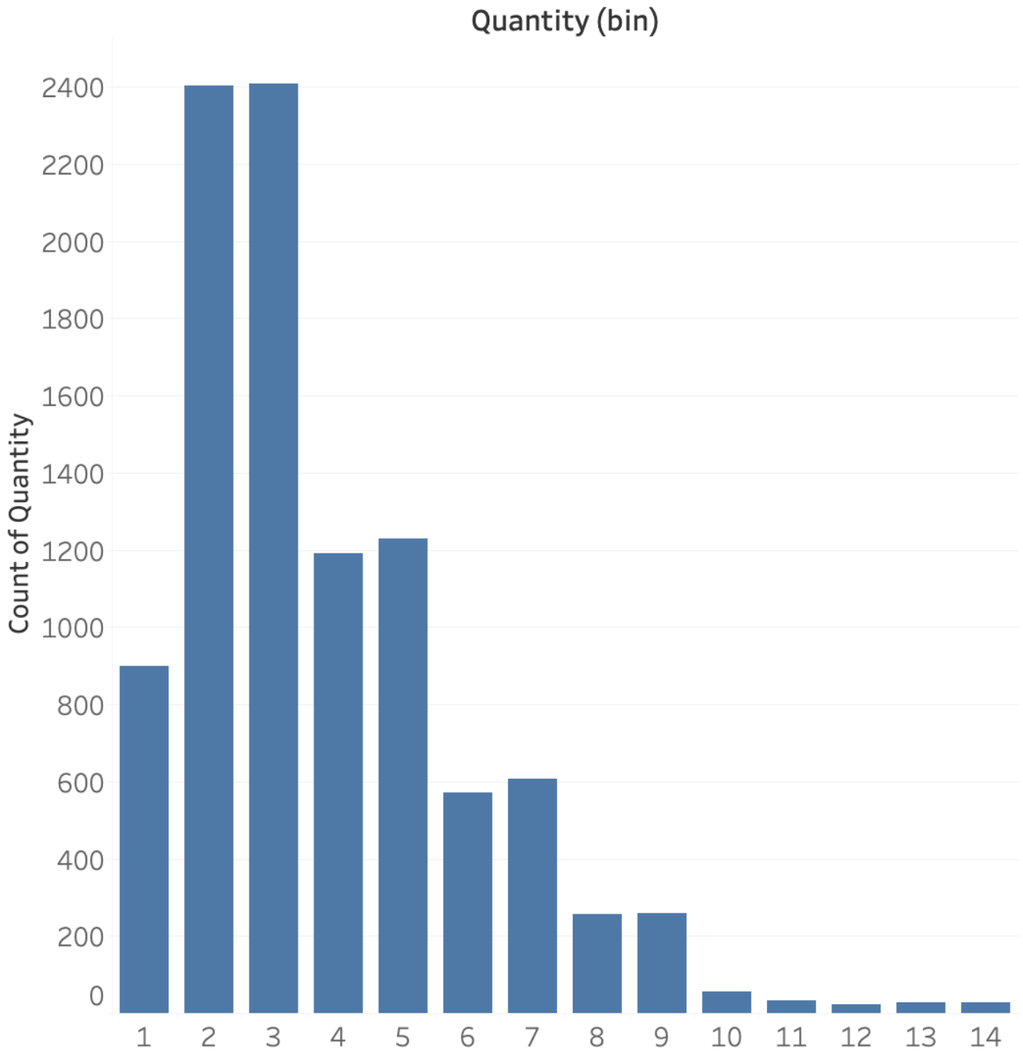
Category	
A	20
B	400
C	160.000
D	25.600.000



Histograms

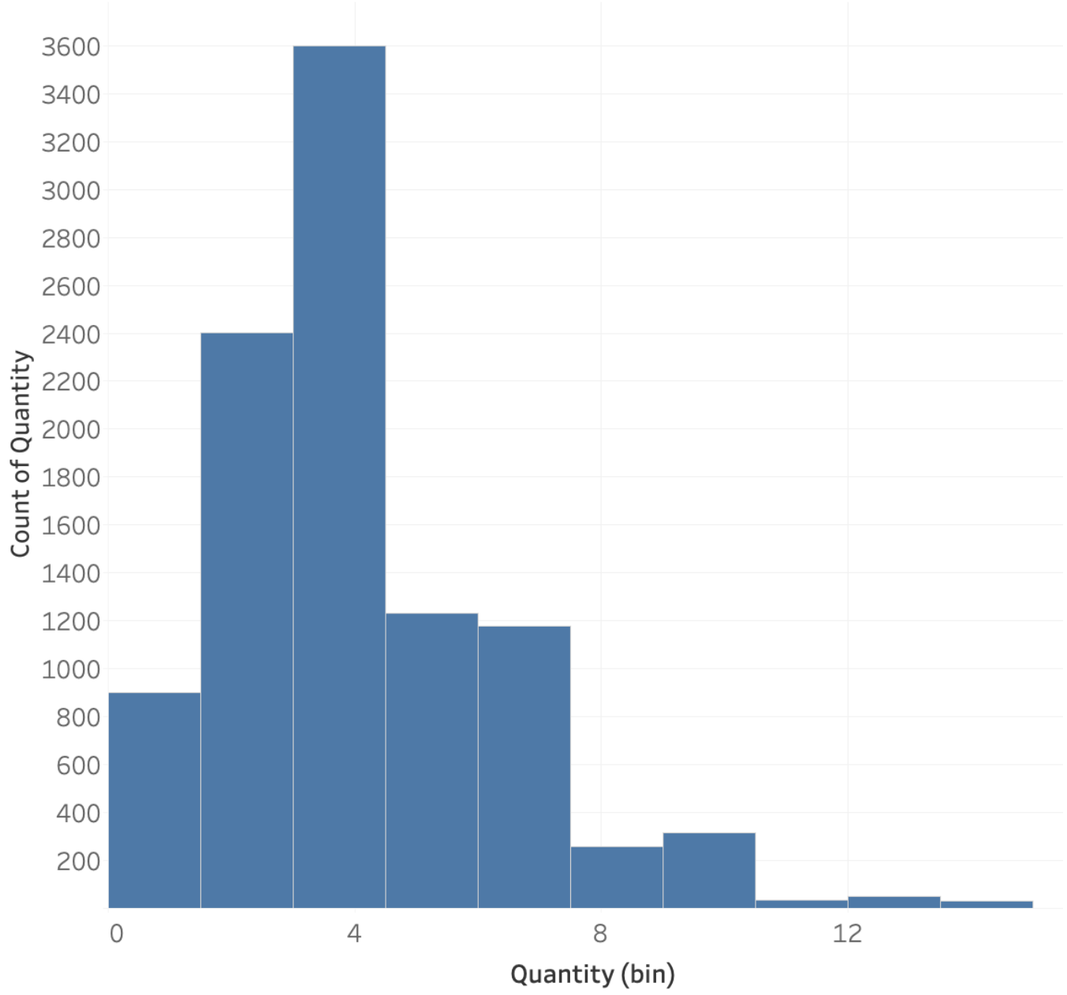
Visualize the distribution of a single, continuous variable

- Lowest/highest value
- Most common value(s)
- Splitting variable in bins

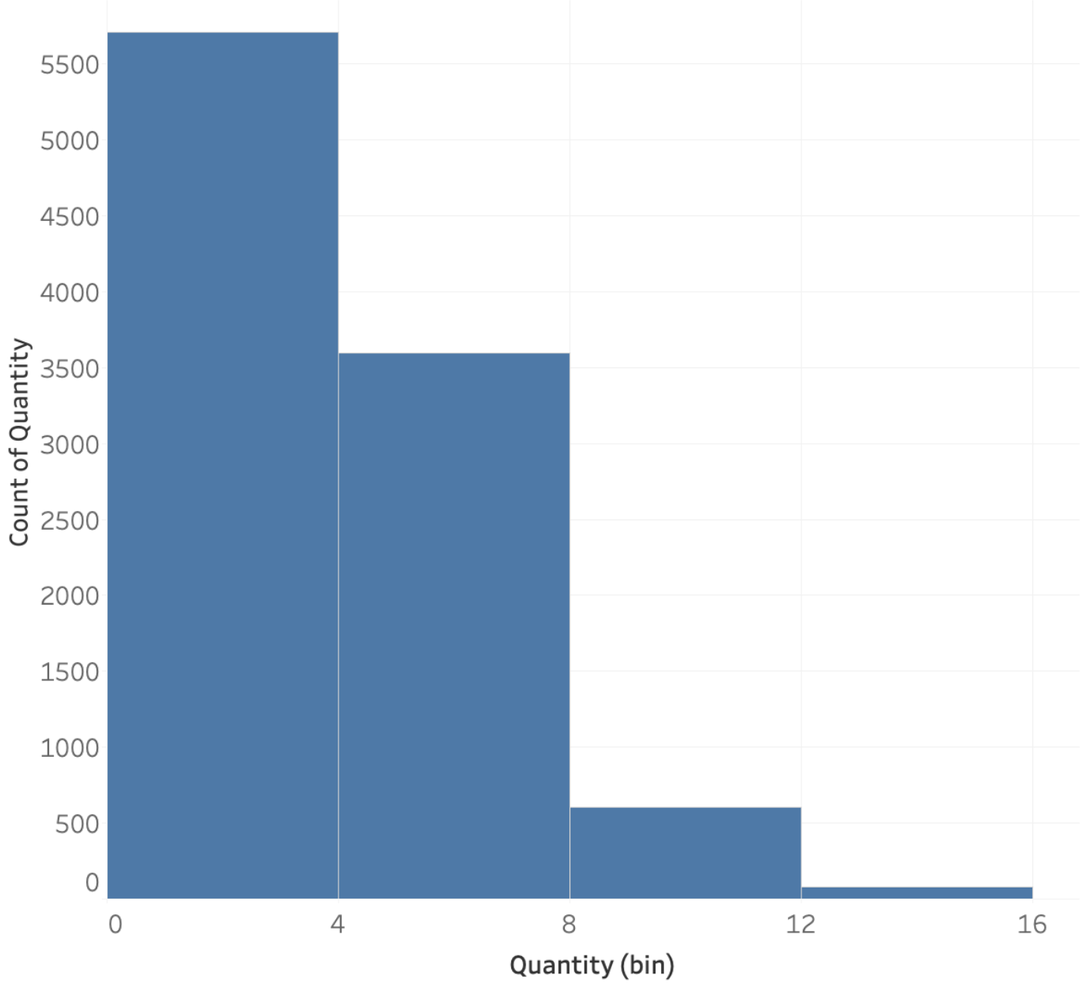


Size of bins

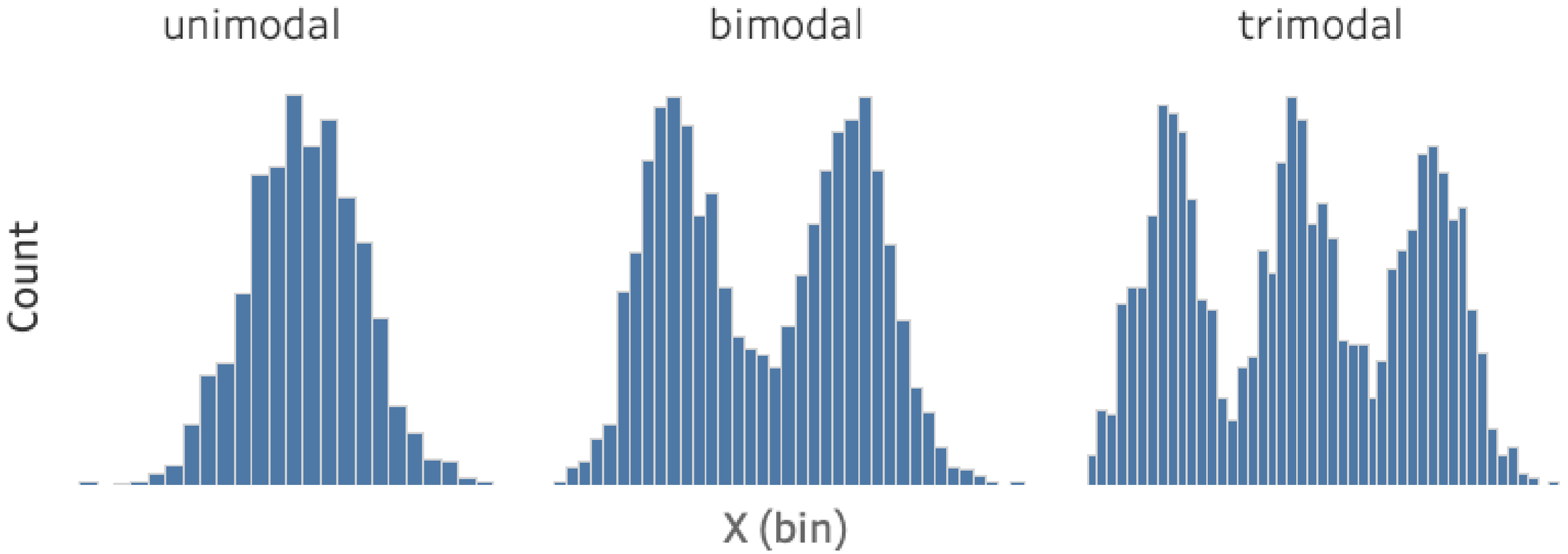
Binwidth = `1.5`



Binwidth = `4`



Modality



Mode: most occurring value

Let's practice!

STATISTICAL TECHNIQUES IN TABLEAU

EDA in Tableau: tables and bar plots

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Tableau Time!

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EDA in Tableau: histograms

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Let's practice!

STATISTICAL TECHNIQUES IN TABLEAU

Box plots and distribution characteristics

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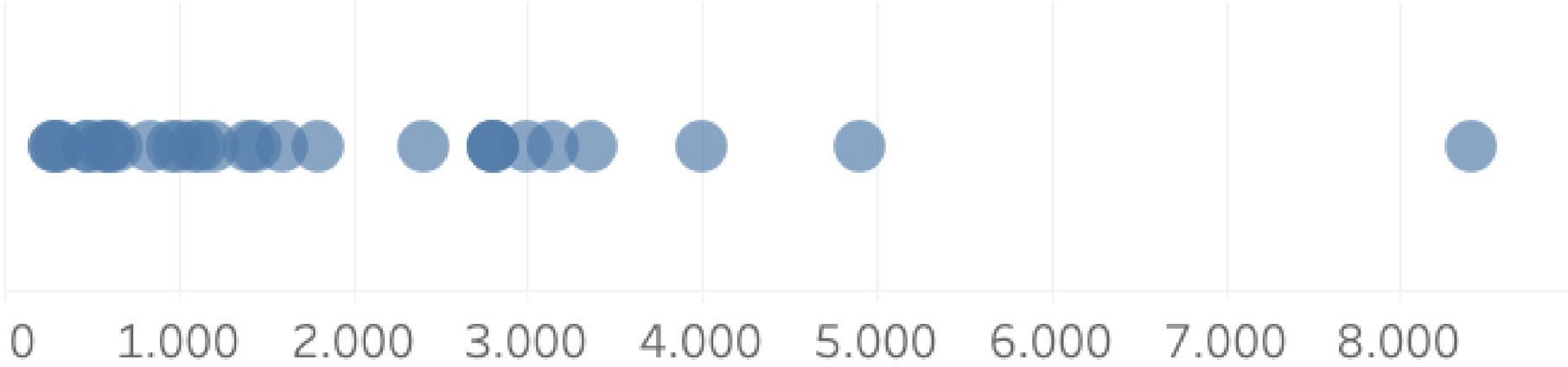
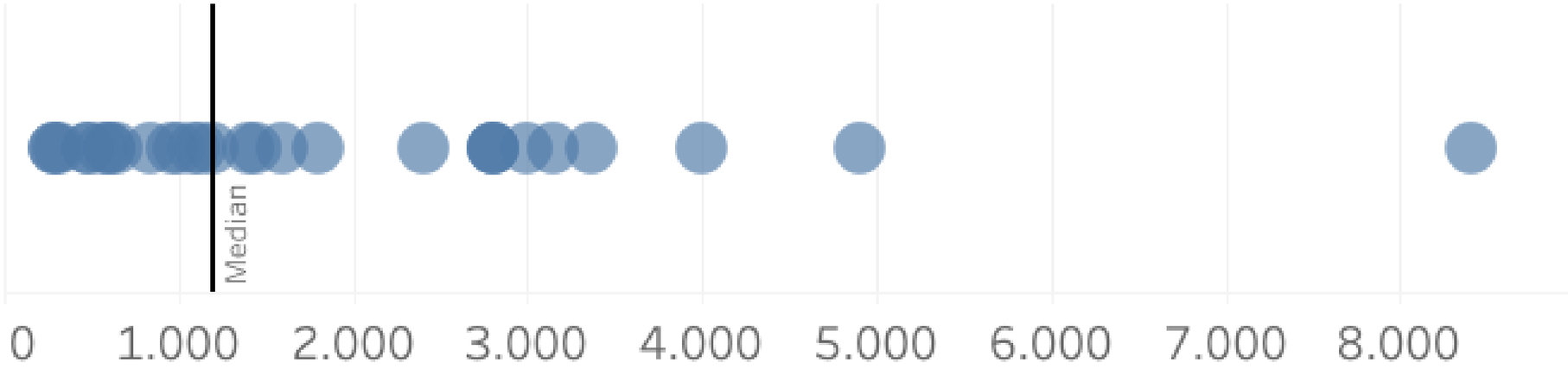
Box plots

Visualize the distribution of a single, continuous variable



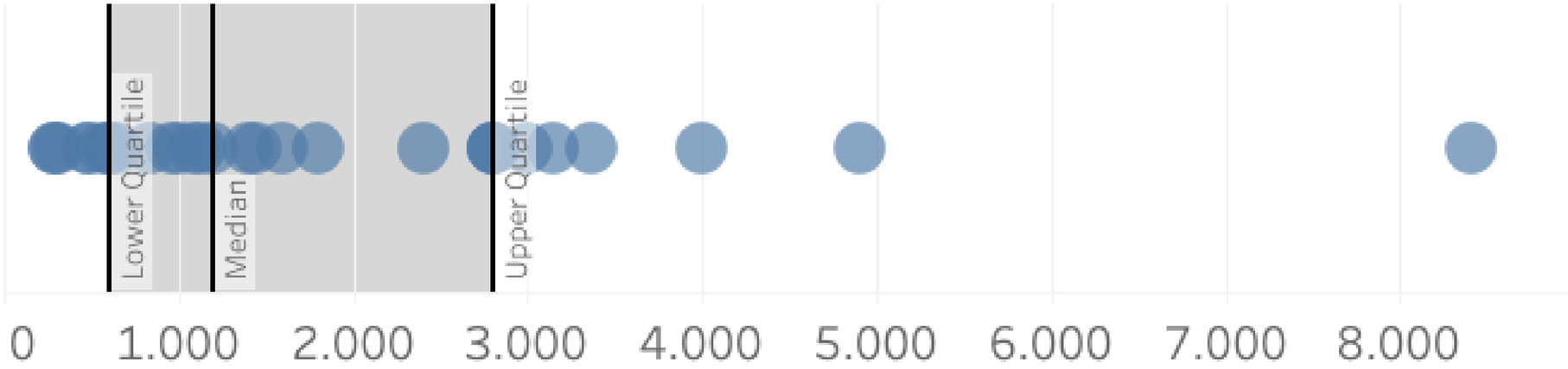
Box plots

Visualize the distribution of a single, continuous variable



Box plots

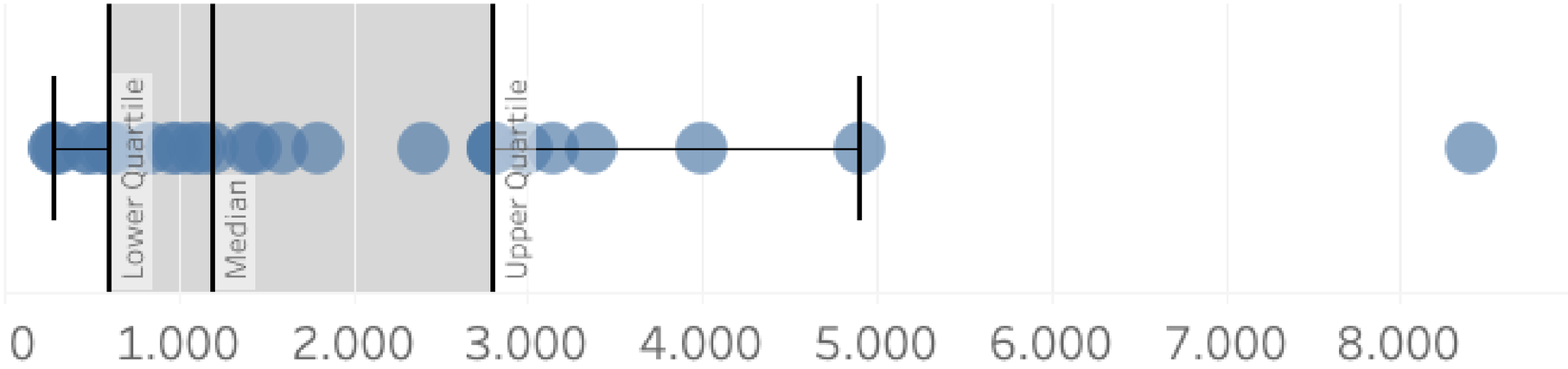
Visualize the distribution of a single, continuous variable



- Distance between lower quartile and upper quartile is the interquartile range (IQR)

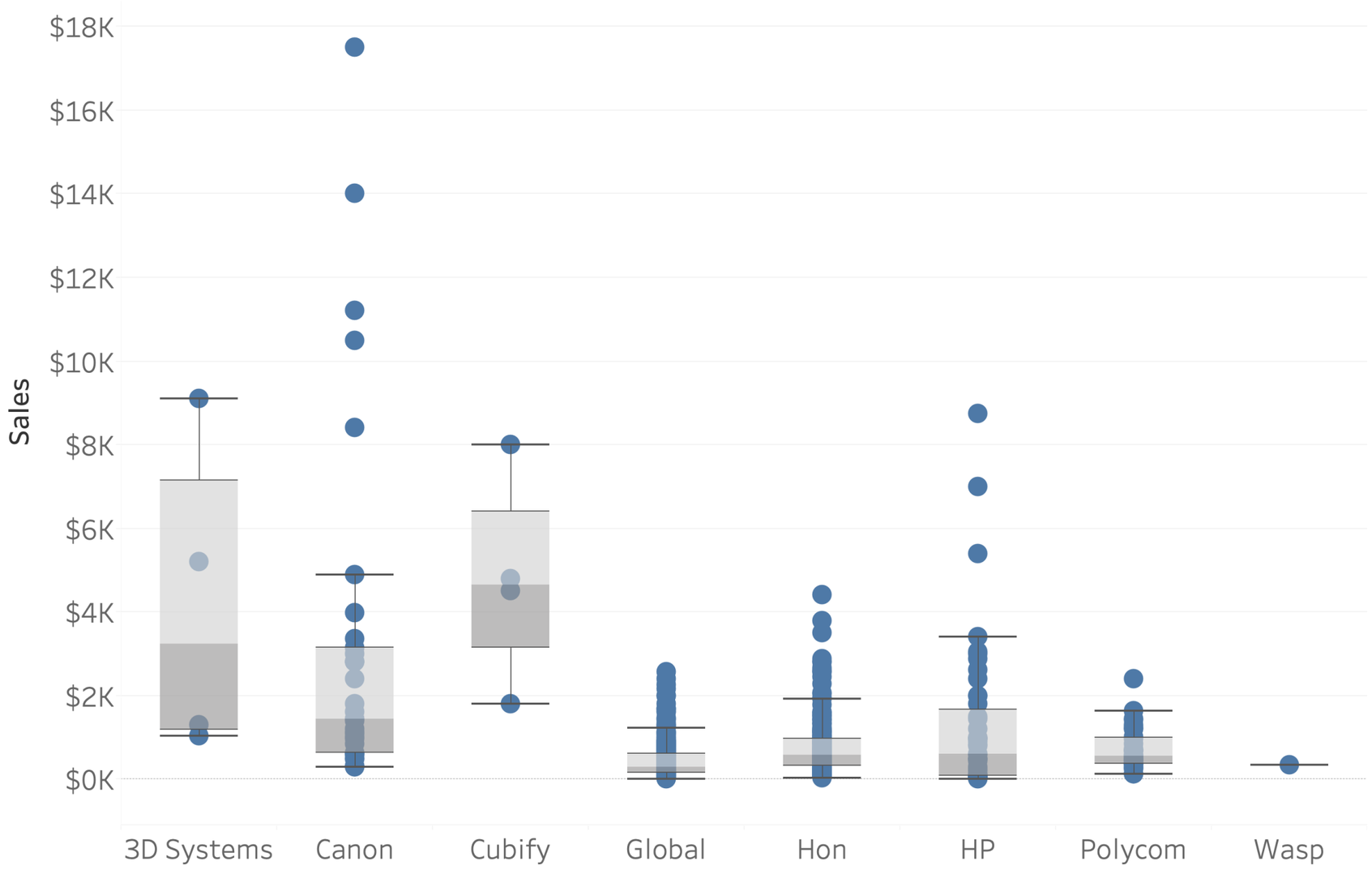
Box plots

Visualize the distribution of a single, continuous variable



- Distance between lower quartile and upper quartile is the interquartile range (IQR)
- Whiskers: length of 1.5 x IQR
- Outlier: extreme value outside whiskers

When to use a box plot

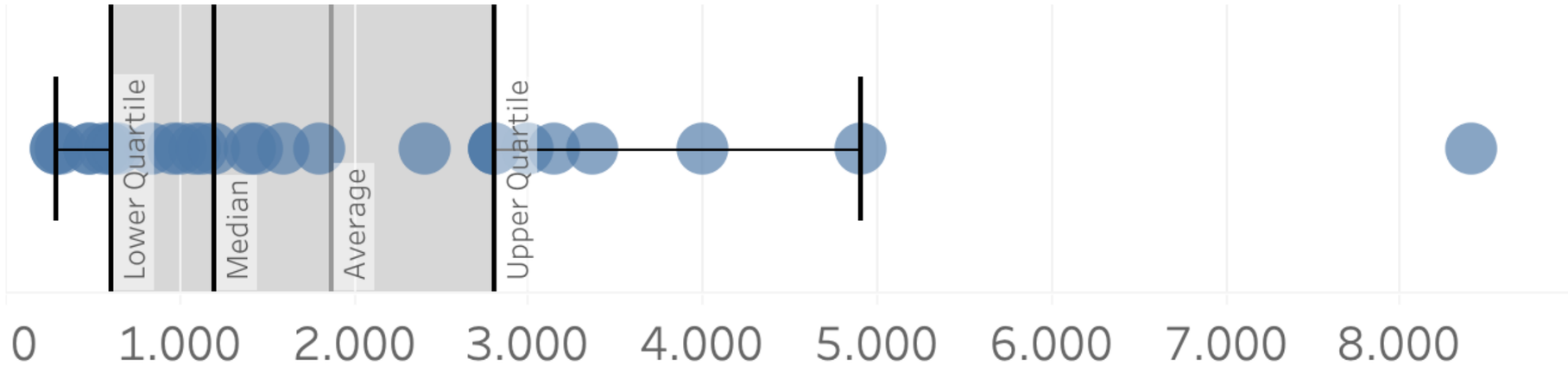


When to use a box plot

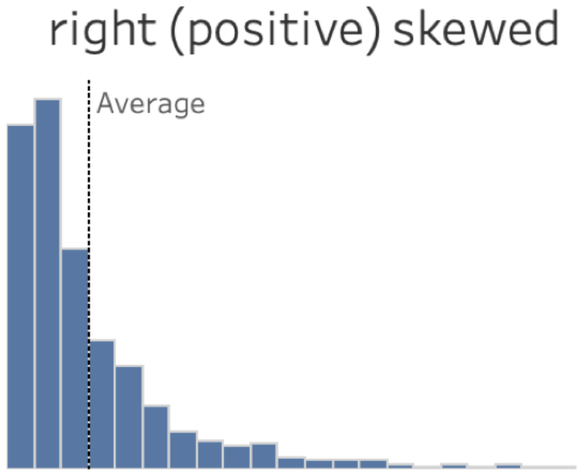
- Compare distributions among multiple categories
- Spot trends and differences between categories

What about the mean?

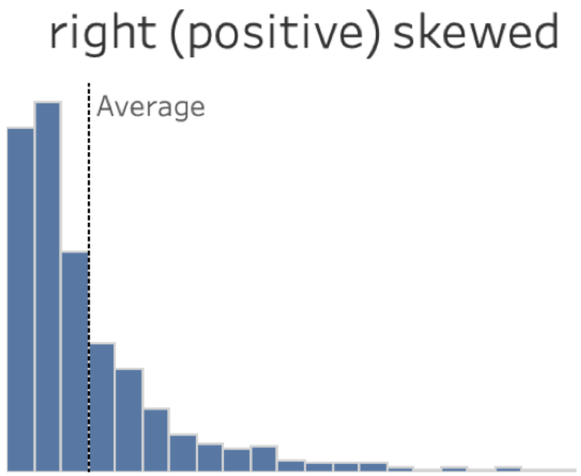
- Average = arithmetic mean
- $\frac{a_1+a_2+a_3+...+a_n}{n}$
- Average and mean are often used interchangeably

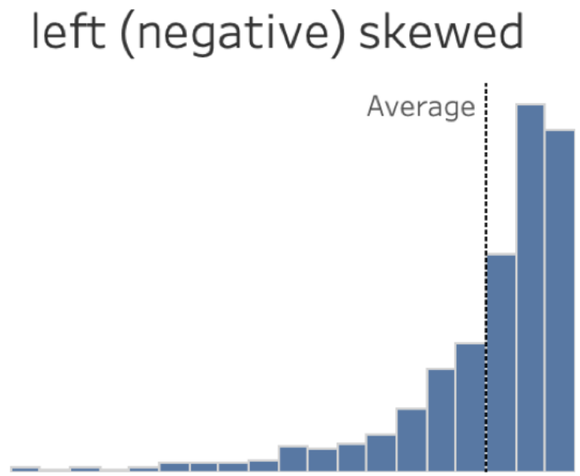


Skewness

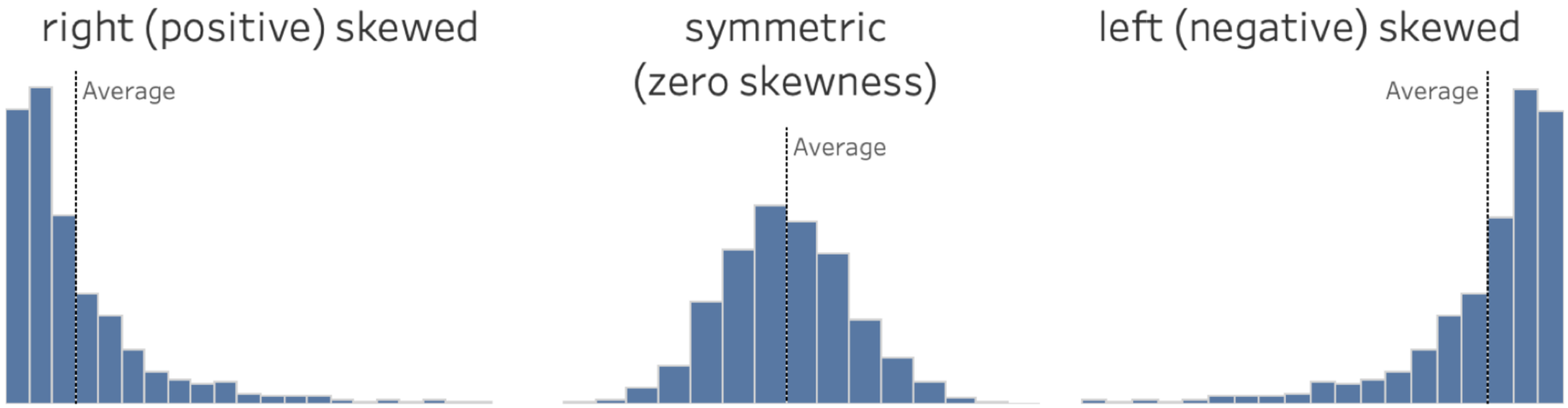


Skewness

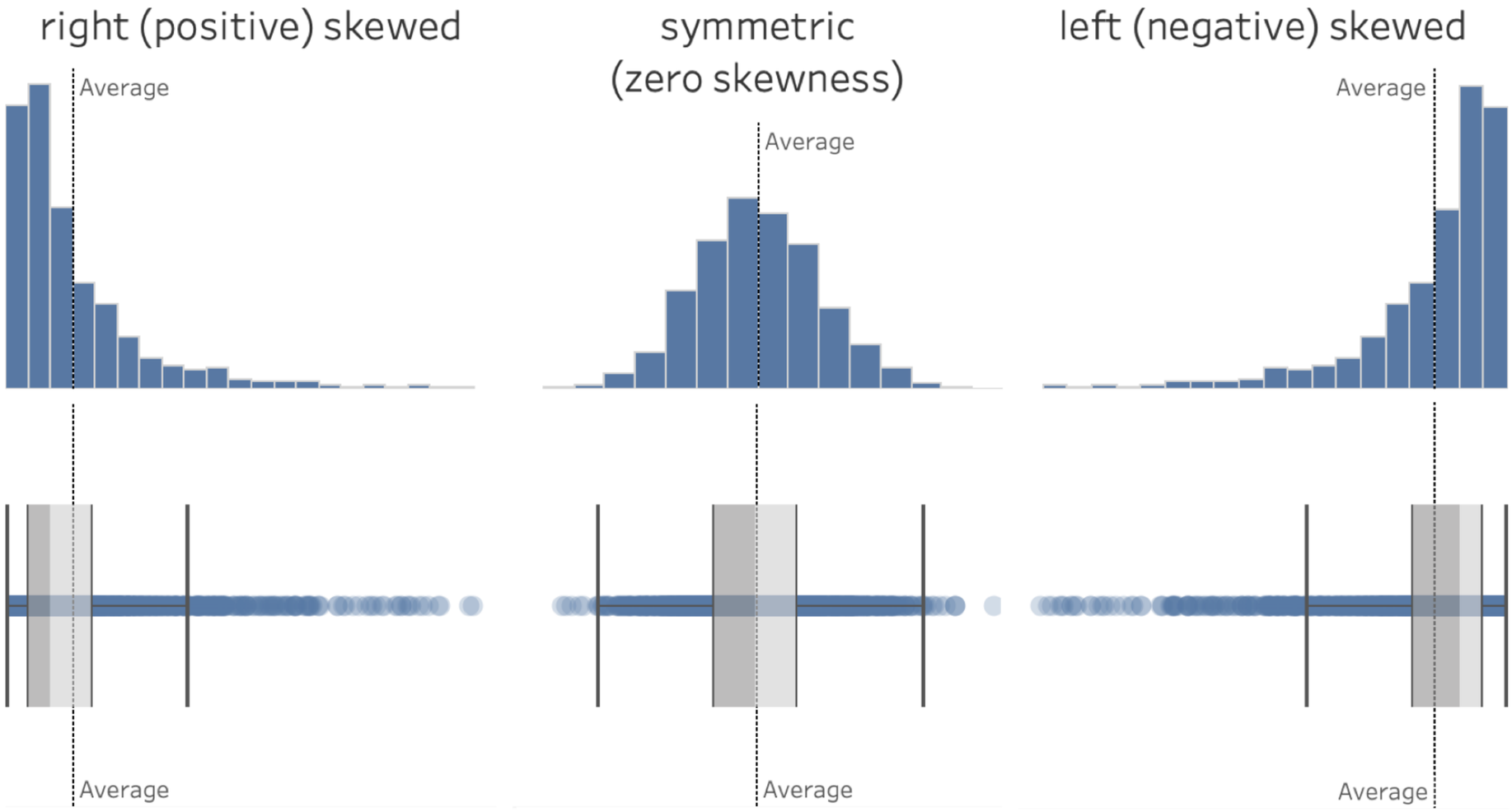

right (positive) skewed
Average


left (negative) skewed
Average

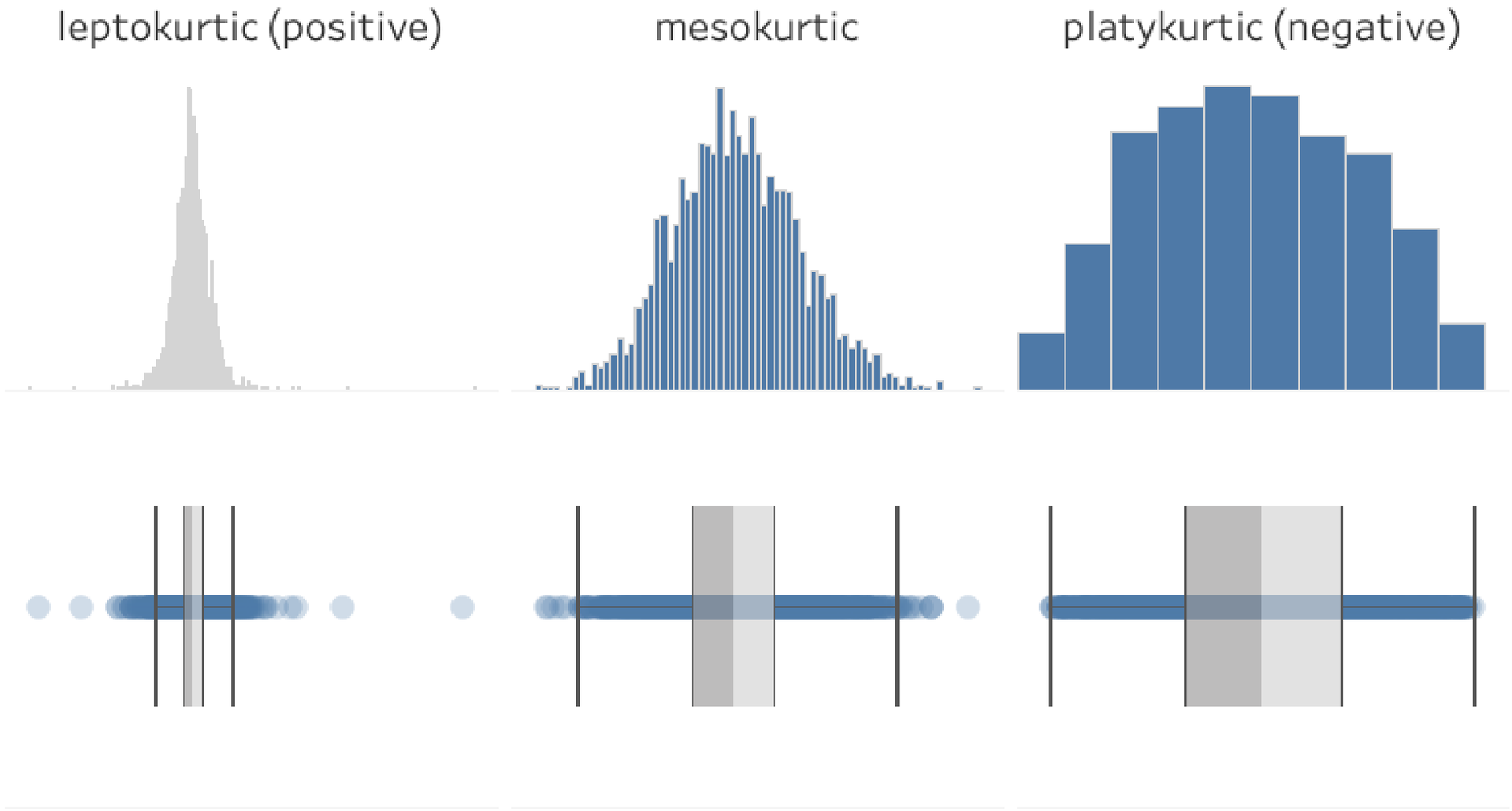
Skewness


right (positive) skewed
Average
symmetric
(zero skewness)
Average
left (negative) skewed
Average

Skewness


right (positive) skewed
Average
Average
symmetric
(zero skewness)
Average
Average
left (negative) skewed
Average
Average

Excess kurtosis



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