★ Spread (Dispersion) → Range = Max − Min

IqR = $Q_3 - Q_1$

All data points

Variance

Standard deviation

$$\frac{\sum_{i=1}^{n} (x_i - \bar{x})^2}{n}$$

n = Data size

↳ Avg of squared diff

Squared unit → Big

pop. (n)

Sample ($n-1$)

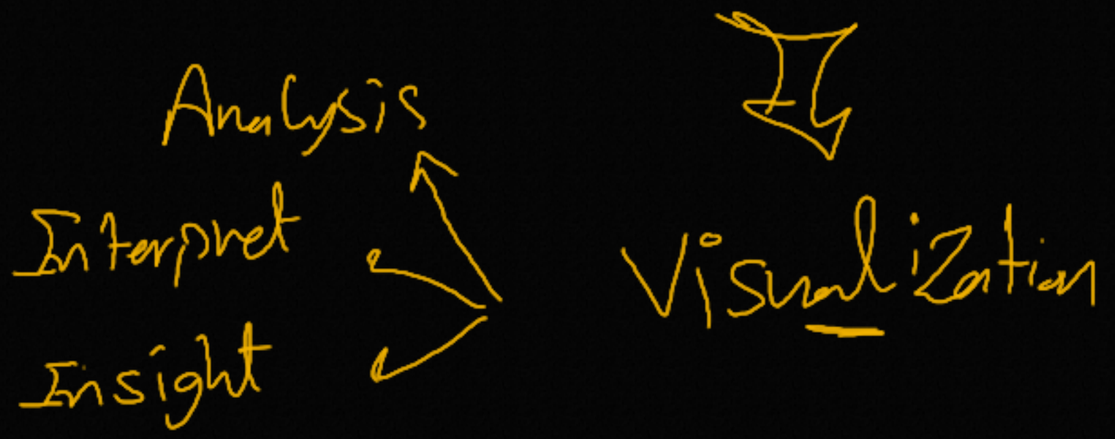
$\sqrt{\text{var}}$

↳ Small value

↳ Same unit

- Center → Mean, Median, Mode
- Five No. Summary → Min, Q_1, Q_2, Q_3, Max.
- Dispersion / spread → Range, IQR, Variance, Std. dev.

Numbers !!



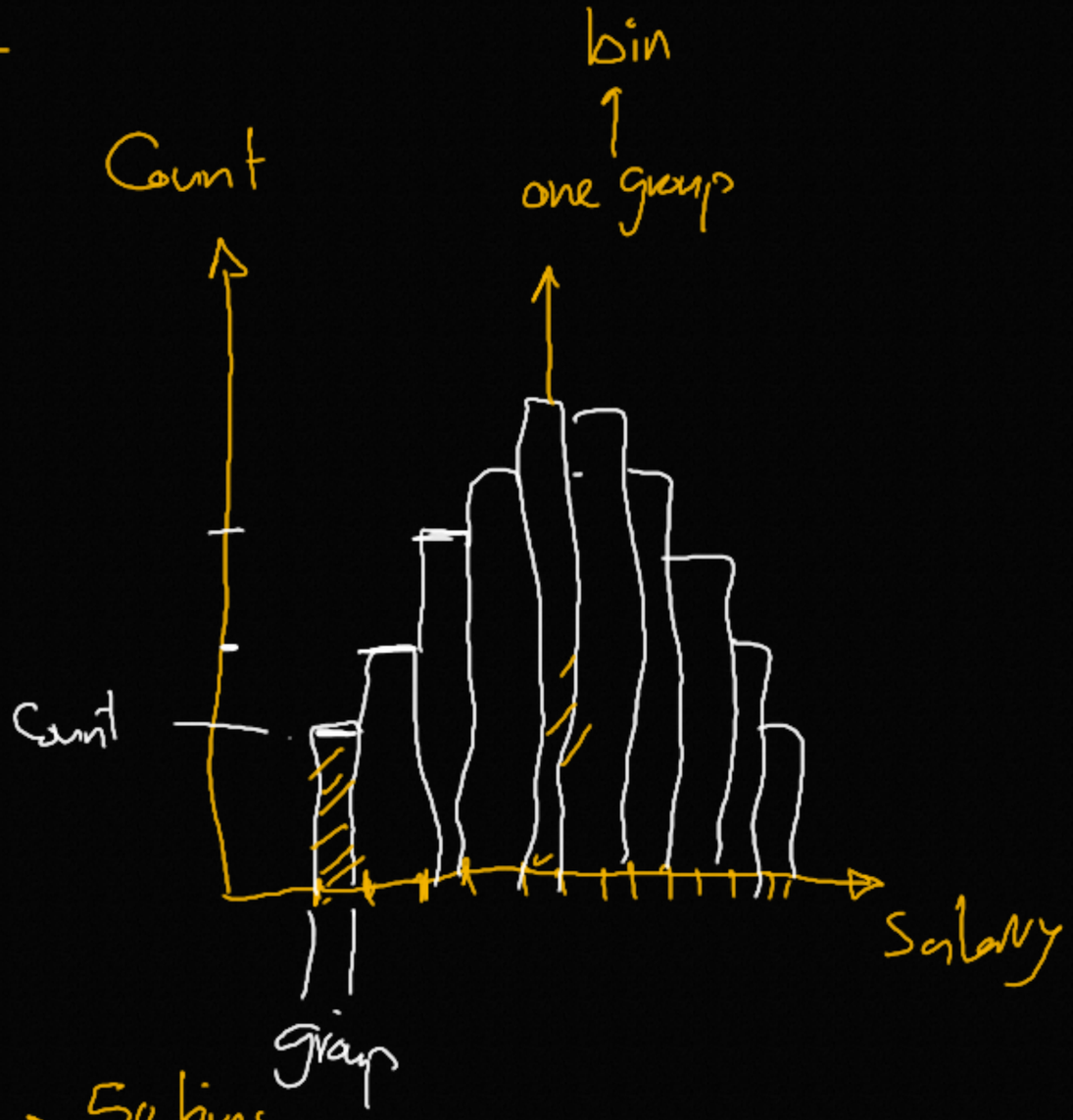
Shape of Data

① Histogram

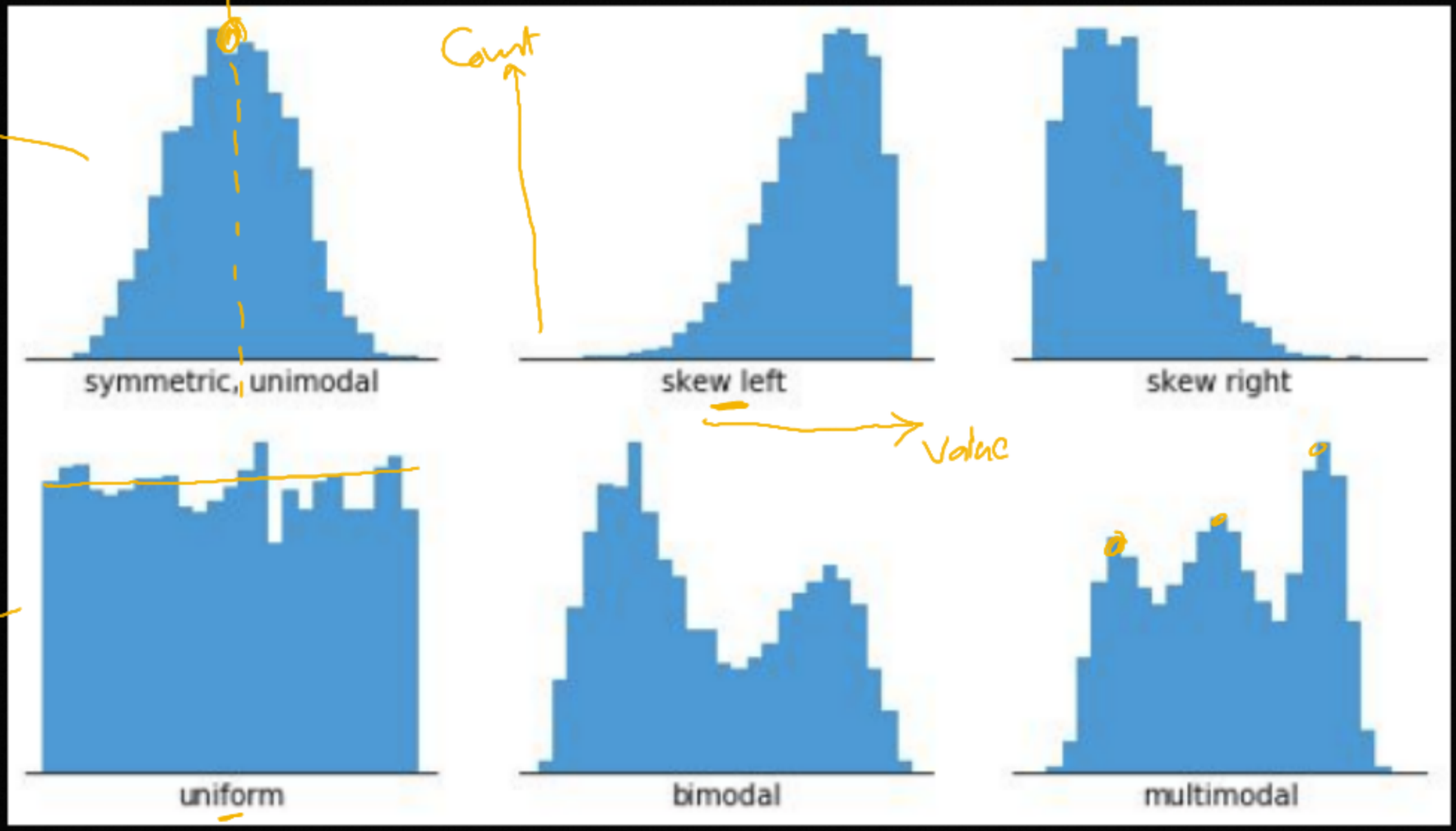
Salary	Count
5000 - 7500 →	100
7500 - 10000 →	150
10 000 - 12.500 →	200
⋮ ⋮	⋮
27 500 30000 →	100

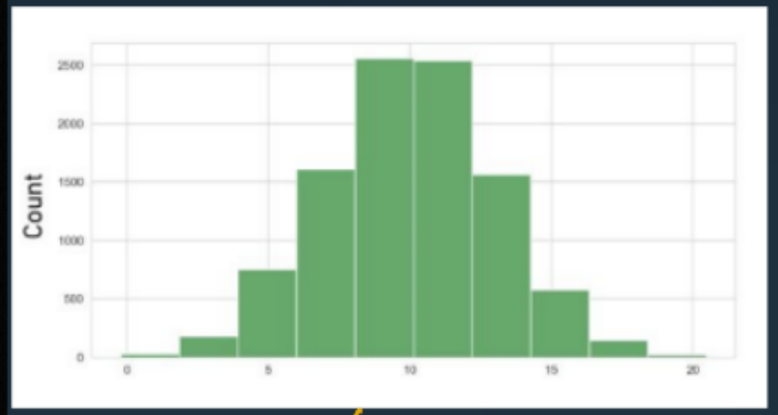
Groups

freq. Table

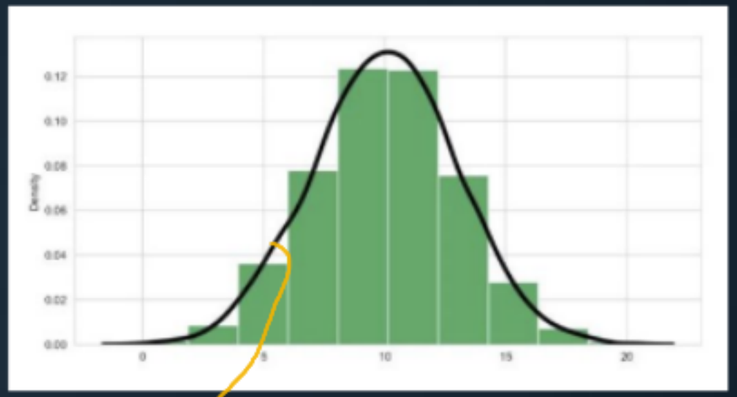


500 / group → 50 bins
1000 / group → 25 bins


Mean ~ Median ~ Mode
Normal
Count
Value
title
symmetric, unimodal
skew left
skew right
uniform
bimodal
multimodal

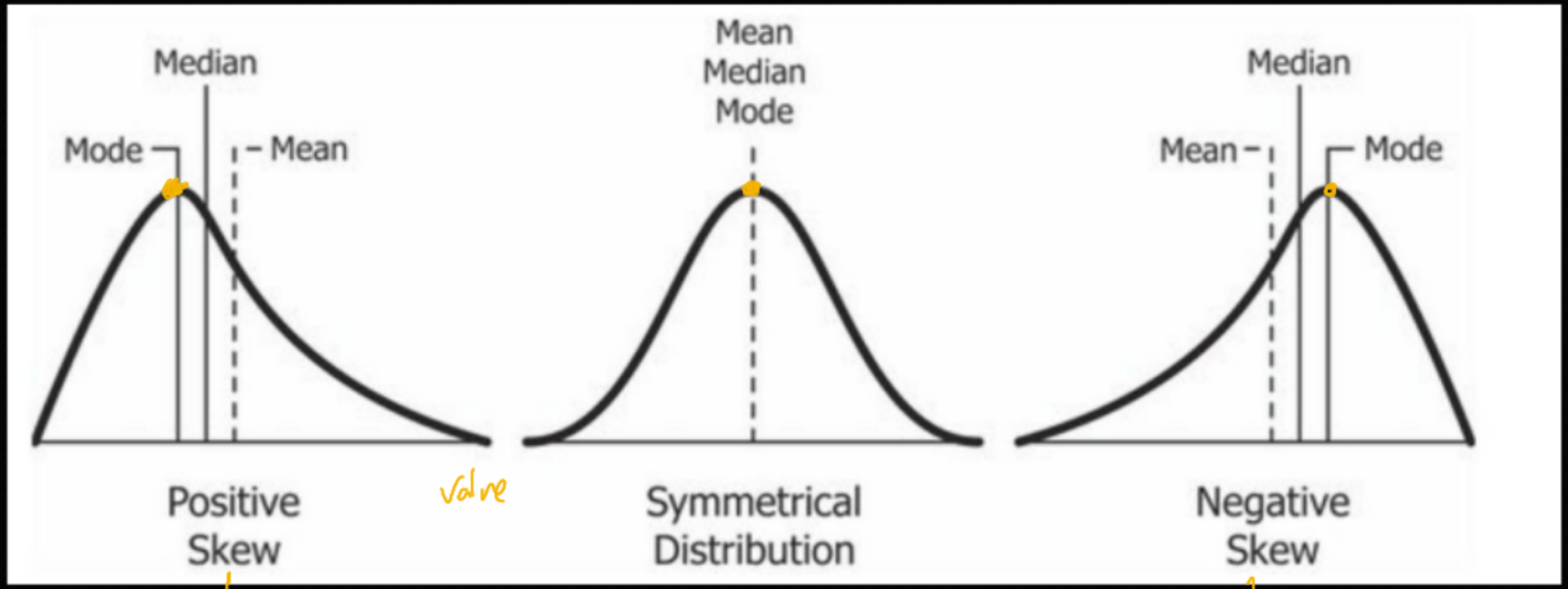


continuous and
smoothed version



Histogram

Density plot



value

Right

Normal
Dist.

Lef