Sample variance denominator 'n-1'

$$\text{Population variance}(\sigma^2) = \frac{\sum\limits_{i=1}^{N}(x_i - \mu)^2}{N}$$

$\mu \rightarrow$ Population mean

unbiased
estimator

$n \ll N$

$$\uparrow\uparrow \quad \text{Sample variance}(S^2) = \frac{\sum\limits_{i=1}^{n}(x_i - \bar{x})^2}{n-1}$$

$\bar{x} \rightarrow$ Sample mean

Biased
estimator $\downarrow\downarrow$

$$\text{Sample variance} \quad \cancel{=} \quad \frac{\sum\limits_{i=1}^{n}(x_i - \bar{x})^2}{n}$$