Volatility measures the dispersion of the returns on an asset and is calculated as the standard deviation of the returns. Higher volatility coincides with larger movements of the returns in any direction, and thus can be a proxy for its riskiness.

\*\*Mathematical Definition:\*\*

\newline

Sample standard deviation:

$$\sigma\ =\ \sqrt{\frac{1}{N-1}\sum\_{i=1}^{N}(x\_i\ -\ \mu)^2}$$

Where is the number of observations and is the sample mean

$$\mu\ =\ \frac{1}{N}\ \sum\_{i=1}^{N}\ x\_i$$