# VOLATILITY CALCULATOR ALGORITHM

## What is volatility?

Volatility is a statistical measure of the dispersion of returns for a given security or market index. Volatility refers to the amount of uncertainty or risk related to the size of changes in a security's value.
A higher volatility means that a security's value can potentially be spread out over a large range of values. This means that the price of the security can change dramatically over a short time period in either direction.
A lower volatility means that a security's value does not fluctuate dramatically & tends to be more steady.

## How to measure volatility?

The simplest approach to determine the volatility of a security is to calculate standard deviation Of its price over a period of time.

$$\text{Standard Deviation} = \sqrt{\text{variance}}$$

## Algorithm for Volatility Calculator

Step 1: Collect information about the closing price of the security's over a period of time.
Step 2: Calculate the average (mean) of these closing price.
Step 3: Calculate the difference between each closing price from the data set with the calculated Mean(average).
Step 4: Calculate the square of each difference.
Step 5:Calculate the sum of squared differences.
Step 6: Divide the sum with total number closing price which we have taken for observation. This result is variance.
Step 7: Calculate the square root of variance , this will give standard deviation i.e Volatility.