Standard Deviation

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Standard deviation is a quantity calculated to indicate the extent of deviation for a group as a whole. The standard deviation is calculated using the equation:

$$\sigma = \sqrt{\frac{\sum (Xi - \bar{X})^2}{n}} \tag{1}$$

Where σ is the standard deviation, Xi is an index of the array, $\bar{X}$ is the average X value, and n is the number of entries in the array. So essentially, the program will take the sum of all the entries in the array to find $\bar{X}$, then it will calculate the summation of $(Xi - \bar{X})^2$, divide by the size of the data, n, which is given through a parameter in the function, and finally take the square root of everything to give us the standard deviation.