Because they do so in different ways, variance and standard deviation both represent the dispersion or spread of a group of measures around their mean. The mean of all squared leaving from the mean is known as variance. This formula is used to compute it: (σ2) Variance = n∑i = 1n(xi−μ)2, The number of data points in this example is n, the mean of the data points is μ, and each data point's representation is xi. Since the variance employs squared differences, the units of variance are the square of the original data units. The variance provides a measure of how far the data points differ from the mean. To return the measure to the original units of the data, one takes the square root of the variance, which is the standard deviation. It uses this formula: Standard Deviation(σ)=n∑i=1n​(xi​−μ)2​​

The standard deviation provides a more understandable distribution measurement in the same units as the data by taking the square root. Because standard deviation is measured in the same units as the data, it is frequently chosen for analyzing data spread even though variance offers a more comprehensive measure of dispersion.