BESSEL'S CORRECTION

Samples are picked randomly from a population data. And in skewed data there are high chances that the samples are taken from one side only and which creates a bias in the values of Mean, Variance and Standard Deviation. So, in order to reduce the bias various experiments were done and the sample data was (for experiment) was divided by various values like: n-1, n-2, n-3, n-4 etc. And after extensive research it was found that when the sample variance is divided by n-1, it was approximately equal to the variance of the population data.
This correction is known as Bessel's correction. This technique is named after Friedrich Bessel.

In statistics, Bessel's correction is the use of $n - 1$ instead of n in the formula for the sample variance and sample standard deviation, where n is the number of observations in a sample. This method corrects the bias in the estimation of the population variance. It also partially corrects the bias in the estimation of the population standard deviation. However, the correction often increases the mean squared error in these estimations

There are three caveats to consider regarding Bessel's correction:

1. It does not yield an unbiased estimator of standard *deviation*.
2. The corrected estimator often has a higher mean squared error (MSE) than the uncorrected estimator. Furthermore, there is no population distribution for which it has the minimum MSE because a different scale factor can always be chosen to minimize MSE.
3. It is only necessary when the population mean is unknown (and estimated as the sample mean). In practice, this generally happens.