Assignment - 2

Why $(n-1)$?

$$\sigma^2 = \sum_{i=1}^{N} \frac{(x_i - \mu)^2}{N}$$

$$S^2 = \sum_{i=1}^{n} \frac{(x_i - \bar{x})^2}{(n-1)}$$

* $N \rightarrow$ population mean , $n \rightarrow$ sample mean

\# When we have an entire population and need to calculate the the variance / standard deviation, results will be accurate by diving 'N'. This is because all the data is about the population.

\# When we have to calculate / with work with the sample mean (n), we only get a small portion / part of the population to work on. If we calculate with only divide by only 'n' then the results will not be accurate.

\# The $(n-1)$ is a smaller number than (n). So, when we divide a smaller number we will get a larger number. Hence, the estimation will be accurate by dividing by $(n-1)$.