Date ___/___/___

Subtracting sample mean in the

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

this makes this sum as small as it possibly could be, Roughly the sample mean must fall near the centre of observations whereas population mean could be any value.

So sum in the above equation is going to be smaller than the sum in population ~~standard~~ variance equation. Hence above equation tends to underestimate the true value of population variance.

To compensate this, we divide by n-1 makes the sample variance a little bigger than it would be if divided by n. And also only n-1 degree of freedom of variability are left for calculation of sample variance