***Session 4 – Assignment\_4.11189***

***Problem Statement:***

*You survey households in your area to find the average rent they are paying. Find the standard deviation from the following data: $1550, $1700, $900, $850, $1000, $950.*

***Solution:***

Step 1: Find the [mean](http://www.statisticshowto.com/mean):  
($1550 + $1700 + $900 + $850 + $1000 + $950)/6 = $1158.33

Step 2: Subtract the [mean](http://www.statisticshowto.com/mean)from each value. This gives you the differences:  
$1550 – $1158.33 = $391.67  
$1700 – $1158.33 = $541.67  
$900 – $1158.33 = -$258.33  
$850 – $1158.33 = -$308.33  
$1000 – $1158.33 = $158.33  
$950 – $1158.33 = $208.33

Step 3: Square the differences you found in Step 3:  
$391.672 = 153405.3889  
$541.672 = 293406.3889  
-$258.332 = 66734.3889  
-$308.332 = 95067.3889  
$158.332 = 25068.3889  
$208.332 = 43401.3889

Step 4: Calculating Variance

Add up all the squares you found in Step 3 and divide by 5 (n-1). This is called Bessel’s correction, generally we divide by n-1 than n, to avoid bias:  
(153405.3889 + 293406.3889 + 66734.3889 + 95067.3889 + 25068.3889 + 43401.3889) / 5 = 135416.66668

Step 5: Find the square root of the variance:  
√135416.66668 = 367.99. **The**[**standard deviation**](http://www.statisticshowto.com/probability-and-statistics/standard-deviation/)**is 367.99.**