**Problem​ ​Statement​ ​1:**

**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.**

**Answer as Follows:**

Standard Deviation of the below sample

Treating this data as a sample, and not population, because, this is only the six rents pain in the given area, but not of the whole population.

Given test Data:

Rents Paid in the given area are

$1550,​ ​$1700,​ ​$900,​ ​$850,​ ​$1000,​ ​$950.

Sorted Order : 850, 900, 950, 1000, 1550, 1700

Mean of the sample: (850 + 900 + 950 + 1000 + 1550 + 1700) / 6 = 6950/6 = 1158.333333333333

Variance of the sample (sigma)2= [(850 - 1158.333333333333)2 + (900 - 1158.333333333333)2 + (950 -1158.333333333333)2 + (1000-1158.333333333333)2 + (1550 - 1158.333333333333)2 + (1700 - 1158.333333333333)2] / (6-1)

= (95069.44444 + 66736.11111 + 43402.77778 + 25069.44444 + 153402.7778 + 293402.7778)/5

= 677083.33333 / 5 = 135416.7

Standard Deviation = √135416.7 = 367.9900813880722

Hence Variance of the Above Sample is 367.9900813880722