Assignment 16.1, Session(16)

Solution:-

Dataset = $1550, $1700, $900, $850, $1000, $950

Step 1:- Finding $\mu$ in $\sqrt{\frac{\Sigma|x-\mu|^2}{N}}$.

where $\mu$ = Mean of data set

$$\mu = \frac{1550+1700+900+850+1000+950}{6}$$

$$= 6950/6$$

$$= 1158.33$$

Step 2:- Variance $\sigma^2$

Finding $\frac{|x-\mu|^2}{N}$ in $\sqrt{\frac{\Sigma|x-\mu|^2}{N}}$

$$\sigma^2 = \frac{(1550-1158.33)^2+(1700-1158.33)^2+(900-1158.33)^2+(850-1158.33)^2+(1000-1158.33)^2+(950-1158.33)^2}{6}$$

$$= \frac{153405.38+293406.38+66734.38+95067.38+25068.38+43401.38}{6}$$

$$= 112847.213$$

Step 3:- Standard deviation $= \sqrt{112847.213}$

$= 335.927$

Hence, Standard deviation = $335.927 (nearest $ value)