**Response for Assignment 6.1**

Below shows the step wise calculation of Standard Deviation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data | Data - Mean | Square of (Data-Mean) | Sum of Squares | Divide Sum by N-1 | **Standard Deviation** (SquareRoot) |
| 1550 | 391.6666667 | 153402.7778 |  |  |  |
| 1700 | 541.6666667 | 293402.7778 |  |  |  |
| 900 | -258.3333333 | 66736.11111 |  |  |  |
| 850 | -308.3333333 | 95069.44444 |  |  |  |
| 1000 | -158.3333333 | 25069.44444 |  |  |  |
| 950 | -208.3333333 | 43402.77778 |  |  |  |
|  |  |  | 677083.3333 | 135416.6667 | $ 367.9900361 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Mean | $ 1158.333333 |  |  |  |  |

1. Step 1: Calculate Mean of the data points, which is 1158.33 in this case
2. Step 2: Subtract Mean from each data point
3. Step 3: Square each value (derived from subtraction in Step 2)
4. Step 4: Calculate sum of Squares (derived in Step 3) – 677083.33 in this case
5. Step 5: Divide Sum of Squares by N-1 (6-1=5 in this case)
   1. As this is not mentioned whether these data points are from Population or Sample, it is assumed that this is Sample.
   2. If the data points are from Population, we divide by N (no of observations)
   3. If the data points are from Sample, we divide by N-1 (no of observations - 1)
6. Step 6: Calculate Square Root of number derived in Step 5 – this number is Standard Deviation (**$ 367.99**)

\*\* Excel sheet showing the calculation is also uploaded on Github assignment