

Assumptions

Any variable, as long as it can be sorted, can have its variance and standard deviation determined. However, the standard deviation is only a useful indicator of dispersion for a measurement variable when the data have a symmetrical distribution, which is frequently a normal distribution. If these presumptions are not true, using the standard deviation to show the variability of observations in range plots and box-and-whisker plots is misleading. This assumption is also a prerequisite for assumptions on the percentage of observations that fall within the range of agreement.

Requirements

1. First Requirement

- **ID** = F1
- **Type** = Functional Requirement
- **Version** = 1.0
- **Priority** = High
- **Description** = Standard deviation only deals with numbers and not strings.

2. Second Requirement

- **ID** = F2
- **Type** = Functional Requirement
- **Version** = 1.0
- **Priority** = High
- **Description** = Standard deviation is the square root of Variance, hence it's value should not be negative.

3. Third Requirement

- **ID** = F3
- **Type** = Functional Requirement
- **Version** = 1.0
- **Priority** = Moderate
- **Description** = The code should return correct sum of the input data values in order to find Standard Deviation

4. Fourth Requirement

- **ID** = F4
- **Type** = Functional Requirement
- **Version** = 1.0
- **Priority** = High
- **Description** = For calculating the mean, natural and real numbers should be considered.

5. Fifth Requirement

- **ID** = F5
- **Type** = Functional Requirement
- **Version** = 1.0
- **Priority** = High
- **Description** = For calculating standard deviation, at-least two numbers should be given as input.

6. Sixth Requirement

- **ID** = F6
- **Type** = Functional Requirement
- **Version** = 1.0
- **Priority** = High
- **Description** = If all the data values are same then the standard deviation should be 0.

7. Seventh Requirement

- **ID** = NF7
- **Type** = Non Functional Requirement
- **Version** = 1.0
- **Priority** = Low
- **Description** = Code should be well indented and easy to understand with proper documentation.

8. Eighth Requirement

- **ID** = NF8
- **Type** = Non Functional Requirement
- **Version** = 1.0
- **Priority** = Moderate
- **Description** = Code should be portable that is a program running on windows 8 should run on windows 10 as well despite of change in performance.