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Submitted to

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***BS-Software Engineering 4th-E***

Title: Assignment 2

Stats & Prob

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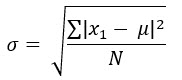
National University of Modern Languages

**Standard Deviation:**

A standard deviation (or σ) is a measure of how dispersed the data is in relation to the mean. Low standard deviation means data are clustered around the mean, and high standard deviation indicates data are more spread out. A standard deviation close to zero indicates that data points are close to the mean, whereas a high or low standard deviation indicates data points are respectively above or below the mean. In Image 7, the curve on top is more spread out and therefore has a higher standard deviation, while the curve below is more clustered around the mean and therefore has a lower standard deviation.

**Formula:**

To calculate the standard deviation, use the following formula:



**Real Life Examples**

**1.Healthcare System:**

A healthcare provider may use standard deviation to measure the consistency of a patient's blood pressure readings over time. By calculating the standard deviation of the readings, the provider can determine how much the readings vary from the average and use this information to assess the patient's overall health.

**2.Manufacturing:**

A manufacturing company may use standard deviation to measure the consistency of the dimensions of the products it produces. By calculating the standard deviation of the dimensions, the company can determine how much the dimensions of the products vary from the average and use this information to assess the quality of the manufacturing process.

**3.Finance:**

A financial analyst may use standard deviation to measure the volatility of a particular stock or the overall market. By calculating the standard deviation of the stock's returns over time, the analyst can determine how much the returns vary from the average and use this information to assess the risk associated with investing in the stock.