Spread of Data

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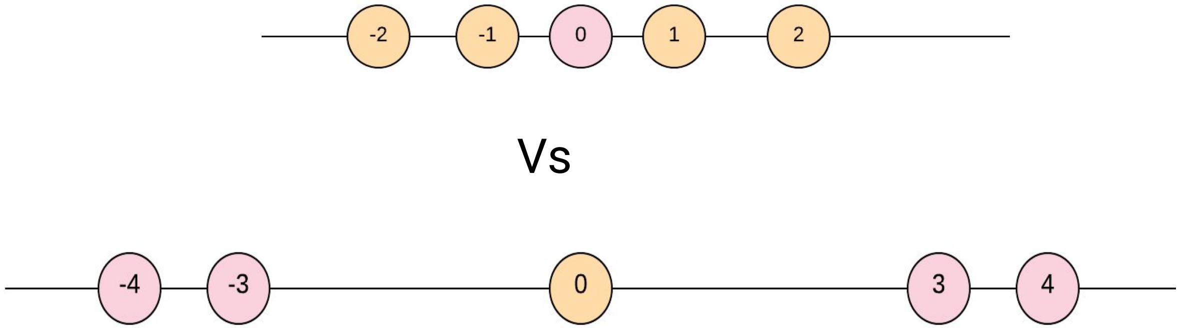

Mean = 0

Median = 0

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Spread of Data

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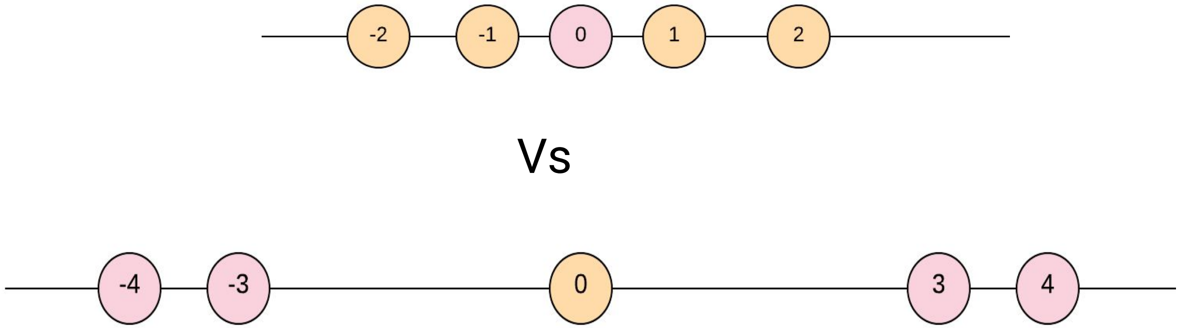

Mean, Median = 0 for both

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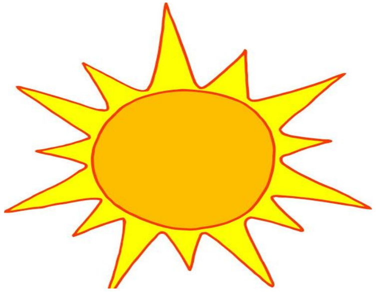

Temperature in Summer Month
Vs
Temperature throughout the year

Variance and Standard Deviation

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1. the mean

2. squared distances from mean

3. variance (σ^2)

4. standard deviation (σ)

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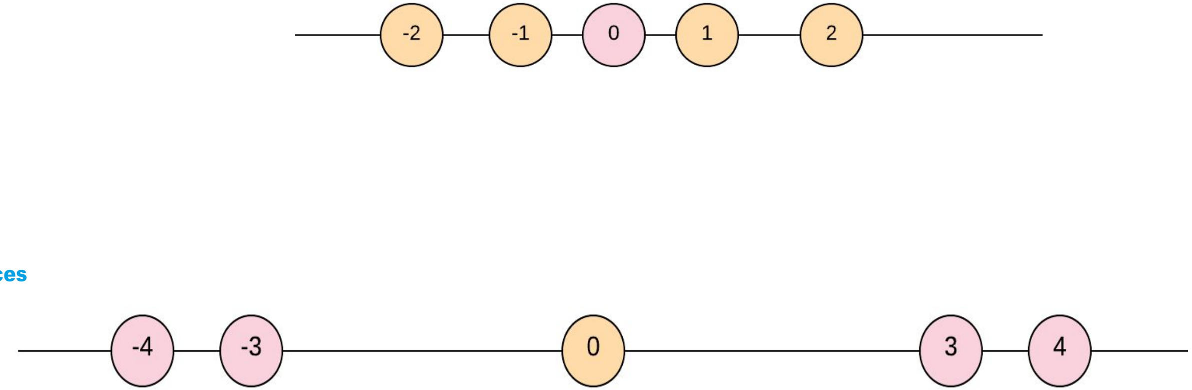

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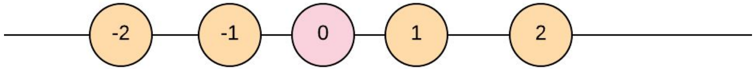

$$\sigma^2 = \frac{(-2-0)^2 + (-1-0)^2 + (0-0)^2 + (1-0)^2 + (2-0)^2}{5}$$

$$\sigma^2 = 2$$

$$\sigma = \sqrt{2} = 1.41$$

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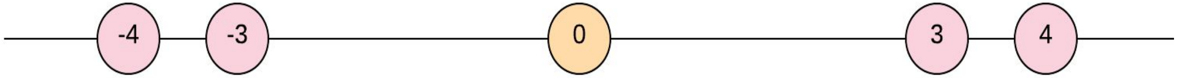

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$$\sigma^2 = \frac{(-4-0)^2 + (-3-0)^2 + (0-0)^2 + (3-0)^2 + (4-0)^2}{5}$$

$$\sigma^2 = 10$$

$$\sigma = \sqrt{10} = 3.162$$

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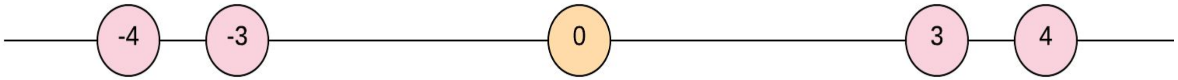

Average Difference (Not squared)

$$\frac{(-4-0) + (-3-0) + (0-0) + (3-0) + (4-0)}{5} = \mathbf{0}$$

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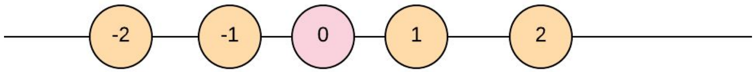

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- If not squared positive deviation can cancel the negative deviation so taking Square of difference actually helps.

Thank You!

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