Warm-Up 6

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1 Formula Area

- *Standard deviation, s*:

$$s^2 = \frac{1}{n-1}\sum_{i=1}^{N}(x_i - \bar{x})^2 \tag{1}$$

- In the previous equation, $\bar{x}$ is the mean of the sample of size n.

2 Understanding the Spread of Data

1. The standard deviation describes how far a typical piece of data is from the mean. First, calculate the mean of the stock prices in Tab. 1 using Calc or Excel[1].

2. Next, calculate the difference between each data point and the mean. Then, square that difference to obtain the deviation-squared.

3. Finally, sum the deviations-squared, and divide by $n-1$, where n is the number of stocks in the sample. What result do you find? If you create a histogram of the data, you can see the meaning of the standard deviation visually.

Stock Label	Price (USD)
A	46.4
B	57.2
C	38.2
D	48.3
E	33.2
F	56.2
G	38.3
H	45.3
I	41.1
J	53.2
K	51.9
L	38.4
M	60.7
N	49.8
O	46.2

Table 1: A listing of stock prices in USD for today.

[1] By the way, an analysis of Yahoo Finance historical stock prices would make an excellent final project.