

Humidity	Wind speed	Temperature
1 1	1	1	0	NA	NA	
0 2	0	1	9	0	1	
1 3	1					
0 5	1					
0	1					
0	0					

> 10P

	d_1	d_2	d_3	d_4
x	1	3	2	1
y	2	4	3	4

$$\text{Corr} = \frac{\text{cov}}{\text{std}(x) \text{std}(y)} =$$

$$\text{cov} = \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})$$

$$\bar{x} = \frac{1+3+2+1}{4} = \frac{7}{4} = 1\frac{3}{4}$$

$$\bar{y} = \frac{2+4+3+4}{4} = \frac{13}{4} = 3\frac{1}{4}$$

$$\text{cov} = \frac{1}{3} \left[(1 - \frac{7}{4})(2 - \frac{13}{4}) + (3 - \frac{7}{4})(4 - \frac{13}{4}) + (2 - \frac{7}{4})(3 - \frac{13}{4}) + (1 - \frac{7}{4})(4 - \frac{13}{4}) \right]$$

$$\begin{aligned} \text{std}(x) &= \sqrt{\frac{1}{n-1} \sum (x_i - \bar{x})^2} \\ &= \sqrt{\frac{1}{3} \left[(1 - \frac{7}{4})^2 + \dots + (1 - \frac{7}{4})^2 \right]} \end{aligned}$$

$$\begin{aligned} \text{std}(y) &= \sqrt{\frac{1}{n-1} \sum (y_i - \bar{y})^2} \\ &= \sqrt{\frac{1}{3} \left[(2 - \frac{13}{4})^2 + \dots + (4 - \frac{13}{4})^2 \right]} \end{aligned}$$