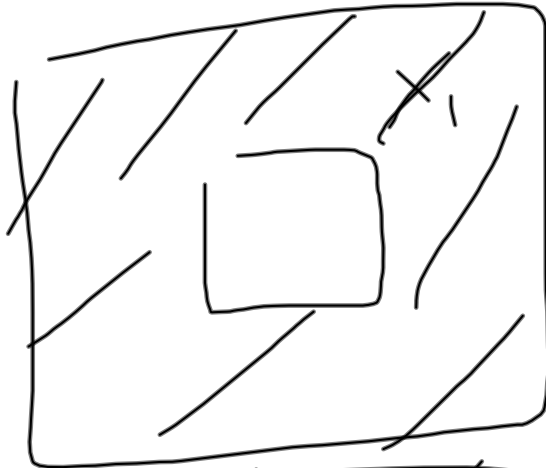
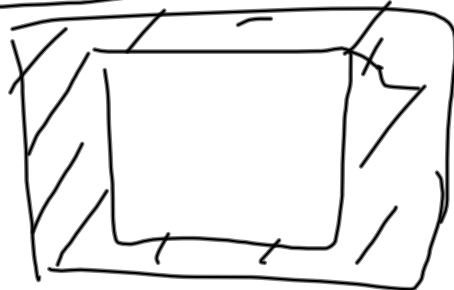


set lag 0



set lag 1



set lag 2

Variance: $E(x - \bar{x})^2$

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

Variance composed from subsets:

$$(x_i - x_j)^2 = (x_i - \bar{x} - x_j + \bar{x})^2$$
$$= ([x_i - \bar{x}] - [x_j - \bar{x}])^2$$

2 points

x_i, x_j

$$\text{variance: } \left((x_i - \bar{x})^2 + \right.$$

$$\left. (x_j - \bar{x})^2 \right) \frac{1}{2}$$

$$\left\{ \bar{x} = \frac{x_i + x_j}{2} \right\}$$

$$\frac{1}{2} \left(x_i - \frac{x_i + x_j}{2} \right)^2 + \frac{1}{2} \left(x_j - \frac{x_i + x_j}{2} \right)^2$$

$$\begin{array}{l}
 X_0: \{x_1, x_2, \dots, x_n\} \\
 X_1: \{x_2, x_3, \dots, x_n\} \\
 X_2: \{x_3, x_4, \dots, x_n\}
 \end{array}
 \left. \vphantom{\begin{array}{l} X_0 \\ X_1 \\ X_2 \end{array}} \right\} \begin{array}{l} \text{Cov}(x_1, x_1) \\ \text{Cov}(x_1, x_2) \end{array}$$

