Co-variance:

Covariance is a statistical measure that quantifies the degree to which two random variables change together. In other words, it indicates whether there is a linear relationship between the two variables. Specifically, it measures how much the variables tend to increase or decrease together.

Here's a basic explanation of covariance:

1. Positive Covariance: If the values of both variables tend to increase together and decrease together, the covariance is positive. This indicates a positive linear relationship between the variables.
2. Negative Covariance: If one variable tends to increase when the other decreases and vice versa, the covariance is negative. This suggests a negative linear relationship between the variables.
3. Zero Covariance: If there is no systematic relationship between the two variables, the covariance is close to zero. This does not necessarily mean there is no relationship between the variables; it just means there is no linear relationship.