Covariance:

1. **covariance** is a measure of the joint variability of two [random variables](https://en.wikipedia.org/wiki/Random_variable).
2. The sign of the covariance therefore shows the tendency in the [linear relationship](https://en.wikipedia.org/wiki/Linear_relationship) between the variables.
3. The magnitude of the covariance is not easy to interpret because it is not normalized and hence depends on the magnitudes of the variables.
4. The [normalized version of the covariance](https://en.wikipedia.org/wiki/Covariance_and_correlation), the [correlation coefficient](https://en.wikipedia.org/wiki/Pearson_product-moment_correlation_coefficient), however, shows by its magnitude the strength of the linear relation.
5. The covariance is defined as the expected value (or mean) of the product of their deviations from their individual expected values



