Exponential Smoothing

Exponential smoothing is a means of forecasting time series data when that data has no apparent pattern other than that most recent numbers tend to be more predictive of future performance. It is similar to a simple moving average, except that the most recent numbers are given a disproportionate amount of weight. The formula for exponential smoothing looks like this:

$$\hat{y}_{new} = \alpha y_{old} + (1 - \alpha)\hat{y}_{old}$$

$$\hat{y}_{new} = Current\ Forecast$$
$$y_{old} = most\ recent\ actual\ data$$
$$\hat{y}_{old} = most\ recent\ forecast$$

$$\alpha = smoothing\ constant$$

The term α is a weighting ratio. It should vary between 0 – 1. The higher the α is, the higher the weight given to the most recent information.

What this formula says is that the current forecast is a function of the most recent number in the series and the ***forecast*** for the most recent number in the series.