This lecture provides us knowledgeable information on moving average such as analyzing moving averages and evaluating the quality of a forecasting technique. Examples of moving averages which we have learned in the past, is sometimes called one period moving average, two period moving average, three period moving average, and so on.

First, we begin with a set of data in a random form, but we need to copy and paste them onto excel by value. We will consider column B as our input data, however, these outputs will change based on the changes in input. For now, they are fixed and we have these 12 pieces of data that we want to forecast for the next period. Cautiously, we have to be conservative and take all numbers into consideration. For example, if we combine all these numbers and ideas, we can use this as a forecast. This will generate an average, which will become our forecast for the next period.

In order to determine which average is better, we need to establish a base point. We need to examine the baseline (MAD) to find the difference between actual and forecast. This will point out the middle for which this difference is minimal. If you see here, we add all the differences to the summation and it is zero. This is because negative numbers and positive numbers cancel each other out. Therefore, we should ignore both signs that are positive and negative. This will establish an absolute value and we can now compute the average of the gaps. The average comes out to around 11 and this is called mean absolute deviation. Now if we utilize another technique with a lower MAD, that technique may come out better than average. If this doesn’t work out, then the average should stay the same. As long as we ignore everything except the last period this will give me the forecast for next period equal to the actual for this period.

Another technique is called naïve technique or one period moving average. Under this technique, our forecast for this data for the next period will be 66 under and average is 31. Now, we need to analyze which technique is better. We need to look at the point of departure whether mad of average is better or mad of one period moving average is equal to actual minus forecast with absolute value. By computing the average of the gaps, this interprets as 9 compared to 10. We need to compare them over the same number of periods to determine which is reasonable. Therefore, this MAD should be computed starting from period 2 and ending in period 12.

If we alter our data, sometimes the average can be calculated more accurately. Here, the average is shown better in this data and I have the ability to compute two period and three period moving averages. So for instance, if we take the two period moving average, we can compute the average of period one and two and set it as our forecast for period three. So for each one, we need to set our data equal to the average of periods one, two, and three and set it as a forecast for period four. Therefore, MAD for all of them should be computed for period four to period twelve. Once all the MADs have been computed, we can compare them through moving average or naïve technique. When analyzing the moving averages we can equal them to the minimum on the data. Another technique can be used is called squaring. Where we take away the absolute value to drop the sign between actual and forecast. So when we use square, we can define which metrics is better. In our data, it does not allow big gaps between actual and forecast because it becomes a square technique, which makes the result larger than others. However, by utilizing all these techniques, we see this set of data by having the same results. Don’t be fooled though, sometimes not all data ends up having the same results like this one.

Finally, we can draw these graphs from the data using a insert-scattered graph which will show us our actual data that is changing. Once we insert the scattered graph, you will see that the numbers in the data is changing. This shows our data in a more detailed explanation of analyzing moving averages and our forecasting techniques.