(iv) Moving Average Method:

It consists in measurement of trend by smoothing out the fluctuations of the data by means of a moving average. Moving average of extent (or period) 'm' is a series of successive averages (arithmetic means) of 'm' terms at a time, starting with 1st, 2nd, 3rd term etc. Thus, the first average is the mean of the 1st, m terms; the 2nd is the mean of the m terms from 2nd to (m+1)th term, the third is the mean of the m terms from 3rd to (m+2)th term, and so on.

If m is odd = (2k+1) say, moving average is placed against the mid-value of the time intervals it covers, i.e., against t = k+1 and if m is even = 2k (say), it is placed between the two middle values of the time intervals it covers, i.e., between t = k and t = k+1. The Original data by centering the moving averages which consists in taking a moving average of extent two, of these moving averages and putting the first of these values against t = k+1. The graph obtained on plotting the moving average values against the corresponding time values gives trend curve.

Drawbacks:

1) It does not provide trend values for all the terms, (e.g.) for a moving average of extent 2k+1, we have to forego the trend values for the first k and last k terms of the series.

2. It cannot be used for forecasting or predicting future trend, which is the main objective of trend analysis.

Pb 1. In a certain industry, the production of a certain commodity (in '000 units) during the years 1994 – 2004.

(i) Obtain the least square line, fitting the data and const the trend line.

(ii) Compute the trend values for the year 1994–04 and estimate the production of commodity during the years 2005 and 2006

Year:	1994	95	96	97	98	99	2000	01	02	03	04
Production:	66.6	84.9	88.6	78	96.8	105.2	93.2	111.6	88.3	117	115.2

Sol: Here n = odd, we shift the origin to middle time period, viz the year 1999. Let $x = t - 1999$.

Year t	Prod. y_t	x	xy_t	x^2	Trend values $y = 95.49 + 3.95x$

2. The following figures are the production data of a certain factory manufacturing air conditioners:

Year:	1990	91	92	...	2000
Production ('000 units):	17	20	19	26	24	40	35	55	51	74	79

Fit a second degree parabolic trend curve to the above data and obtain the trend values.