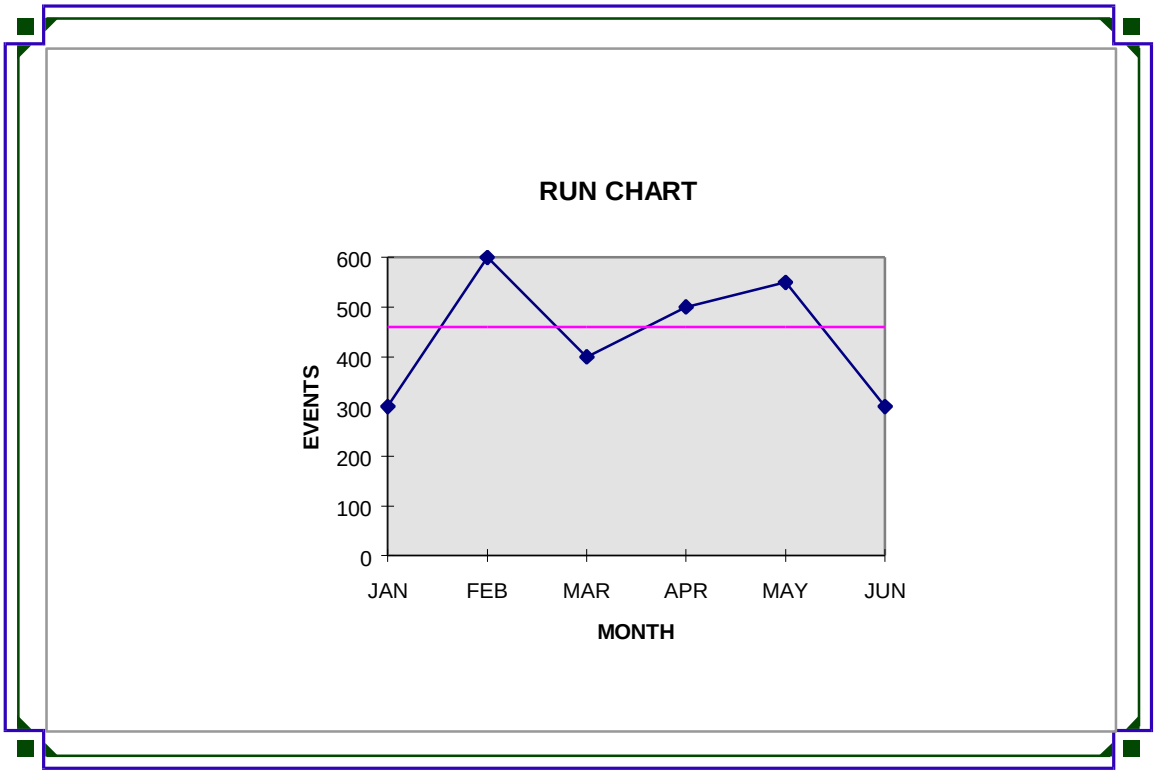
RUN/TREND CHART



Purpose

A **run chart** (aka Trend Chart) is used to display data over time. It is a simple version of a single line chart and is most used to determine if the long range average of process indicators are changing or new trends developing.

Of all charts used to represent data, the **run chart** is the easiest to construct and to interpret. If the process indicators are correct and nothing else changes, there should be approximately equal number of data points arrayed both above and below the average line.

Process

1. Determine units of time to be displayed along the horizontal (x) line of the chart. These periods might be years, months, weeks, days, hours, minutes, or seconds depending on how data is gathered.

2. Determine units of measure for data collected to be displayed along the vertical (Y) axis.

3. With the units of measure determined, decide on a scale for the (Y) axis that will fairly represent the data displayed. The scale should be large enough so data is not bunched at the bottom or top of the chart.

4. With the data gathered, place a data point along the (X) axis at the appropriate value on the (Y) axis. Continue with all data displayed.

5. Calculate the average of the data collected. Draw a straight line along the (X) axis at the appropriate level on the (Y) axis. Add labels to increase understanding.

Example

1. Units of Time:

Data collected is daily from Monday through Friday of each week.

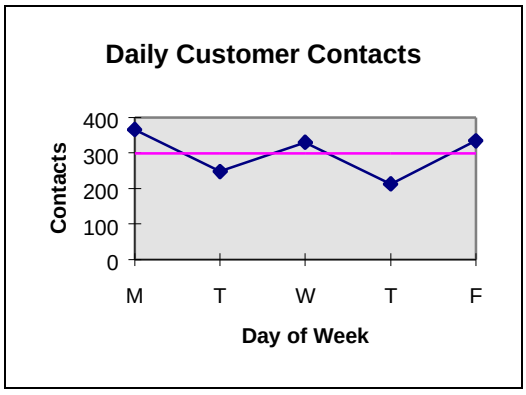
2. Units of Measure:

Data collected is for the number of customer contacts (of all kinds) per day.

3. Scale of Data Presented:

The largest number is 366 with 213 the smallest. A good scale might be by 100s.

4. Array Data & 5. Add Average Lines and Labels:



Key Points

- The use of spreadsheet software will greatly simplify the use of these charts. Scaling is automatic and most software will systematically carry the user through development of the chart.

- Collected data must remain in the order collected. Since a run chart tracks data over time, the sequence of data points is imperative.

- A marked point on the chart represents actual data collected for that period.

- If five or more periods of data show a continuous increase or decrease, this is an indicator that an important event took place to alter the data. It may be the result of a process change or other outside pressures. This clearly indicates a need for further investigation. The number of periods reflecting this change is not necessarily five, it depends on the frequency of data collection.

- When the number of points on one side or another of the average becomes more weighted, this indicates a change in the average has taken place. Thus, if an average line was drawn on the chart prior to adding new points, the average must be recomputed and will most likely change.

- If upper and lower control limits are statistically derived and used to monitor variation, you will have constructed a **Control Chart** which is another tool in this publication.

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