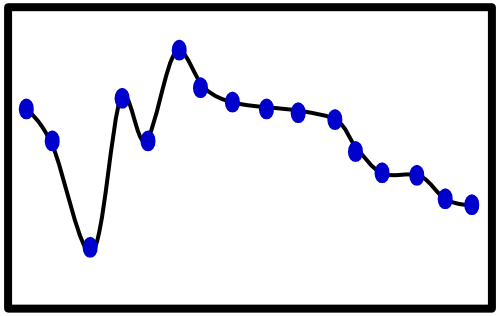
Continuous Improvement Toolkit

Run Charts




Managing Risk
PDPC
FMEA
RAID Logs
Fault Tree Analysis
Risk Assessment*
Traffic Light Assessment
Deciding & Selecting
Pros and Cons
Importance-Urgency Mapping
Break-even Analysis
Cost -Benefit Analysis
Force Field Analysis
Voting
Pugh Matrix
Decision Tree
TPN Analysis
QFD
Matrix Diagram
Kano Analysis
Prioritization Matrix
Critical-to Tree
Paired Comparison
Planning & Project Management*
RACI Matrix
Stakeholders Analysis
PEST
PERT/CPM
Activity Diagram
SWOT
Roadmaps
Project Charter
Gantt Chart
PDCA
Control Planning
Gap Analysis
Hoshin Kanri
Kaizen
How-How Diagram
Tree Diagram**
Standard work
Lean Measures
KPIs
OEE
Capability Indices
MSA
RTY
Descriptive Statistics
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Graphical Analysis
Cause & Effect Matrix
Pareto Analysis
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Hypothesis Testing
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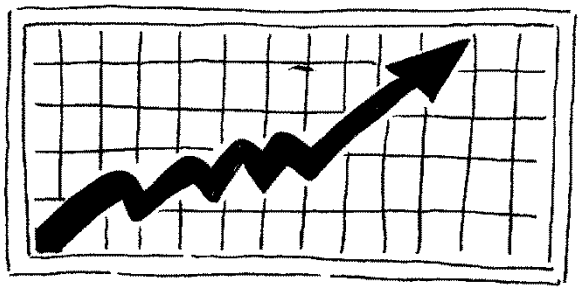
Run Charts
Understanding Performance
Control Charts
5 Whys
Chi-Square Test
Multi-Vari Charts
Relations Mapping*
Fishbone Diagram
Benchmarking
Sampling
TRIZ***
Brainstorming
Analogy
SCAMPER***
Focus groups
Interviews
Nominal Group Technique
Mind Mapping*
Photography
Check Sheets
Affinity Diagram
Attribute Analysis
Measles Charts
Surveys
Data Collection
Critical Incident Technique
Observations
Lateral Thinking
Visioning
Creating Ideas**
Identifying & Implementing Solutions***
Simulation
TPM
Mistake Proofing
Pull Systems
JIT
Ergonomics
Work Balancing
Automation
Bottleneck Analysis
Visual Management
Flow
Value Analysis
5S
Wastes Analysis
SMED
Time Value Map
Process Redesign
IDEF0
Value Stream Mapping
SIPOC
Flow Process Chart
Process Mapping
Flowcharting
Service Blueprints
Designing & Analyzing Processes

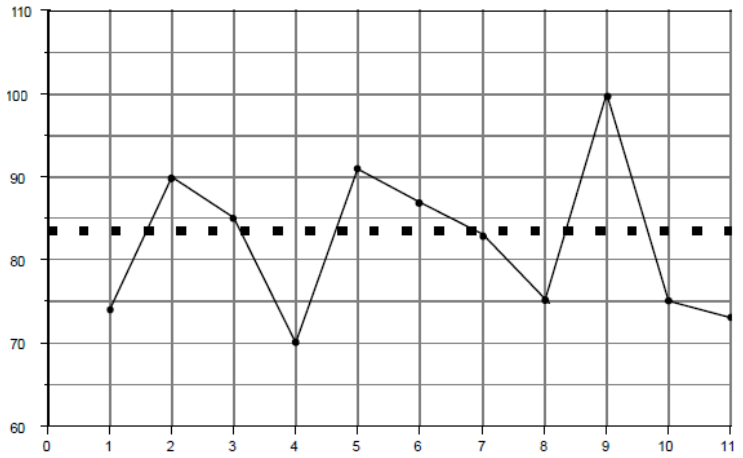
- Run Charts

- A run chart is a plot of data overtime.
- It is a line graph of data points plotted in chronological order.
- These data points represent measurements, counts, or percentages of process output.
- It is a quick and easy approach of deciding if the process is stable.
- It highlights signals of special causes of variation in a process such as trends and patterns.



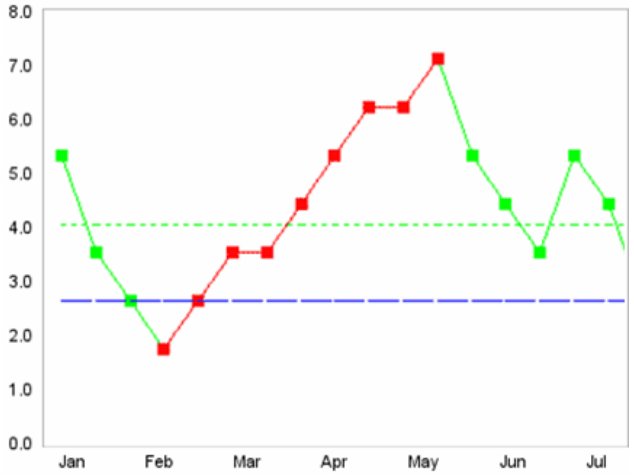
- Run Charts

- Used to monitor changes that occur within a process.
- A completed chart can show if an implemented improvement idea was successful.
- The horizontal axis shows the order of the data were collected.
- The vertical axis shows the data values.
- Used to visualize the process overtime without regard to specification limits.



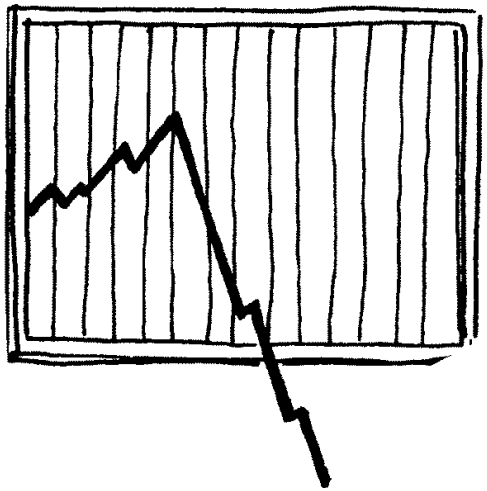
- Run Charts

- It often uses the median to show the central location.
- Run charts are similar in some regards to the control charts.
- It doesn’t show the control limits of the process.
- They are therefore simpler to produce.
- However, they do not allow for the full range of analytic techniques supported by control charts.



- Run Charts

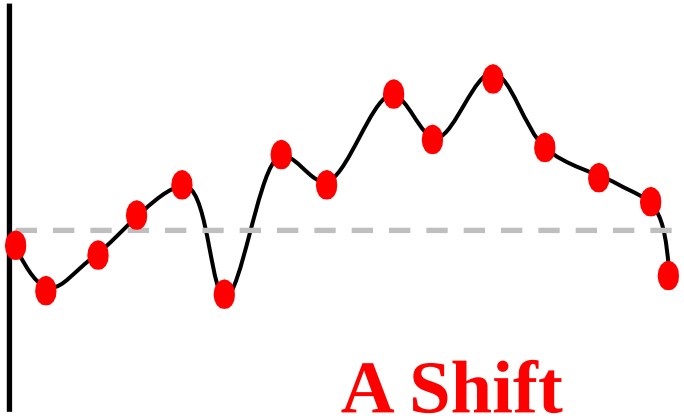
- **Shifts:**
  - When you see a number of consecutive points on one side of the center line.
- **Trends:**
  - When you see a number of consecutive points in the same direction (up or down).
- **Patterns:**
  - When you see a pattern that recurs a number of times in a row.



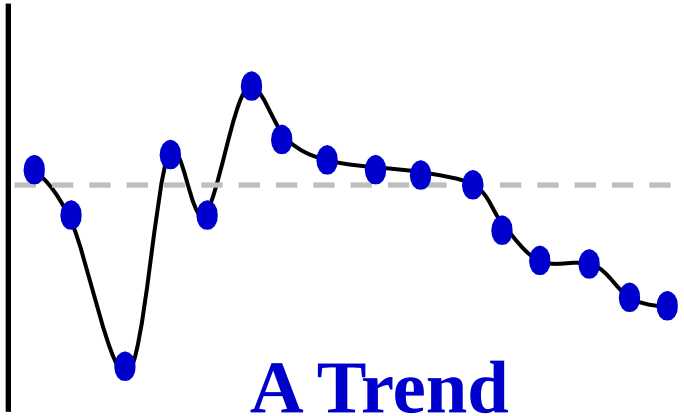
- Run Charts

A Run Exists When:

- A number of consecutive points lie on one side of the median.
- A number of consecutive data points that all increase or decrease.
- A pattern recurs *a number* of times in a row.



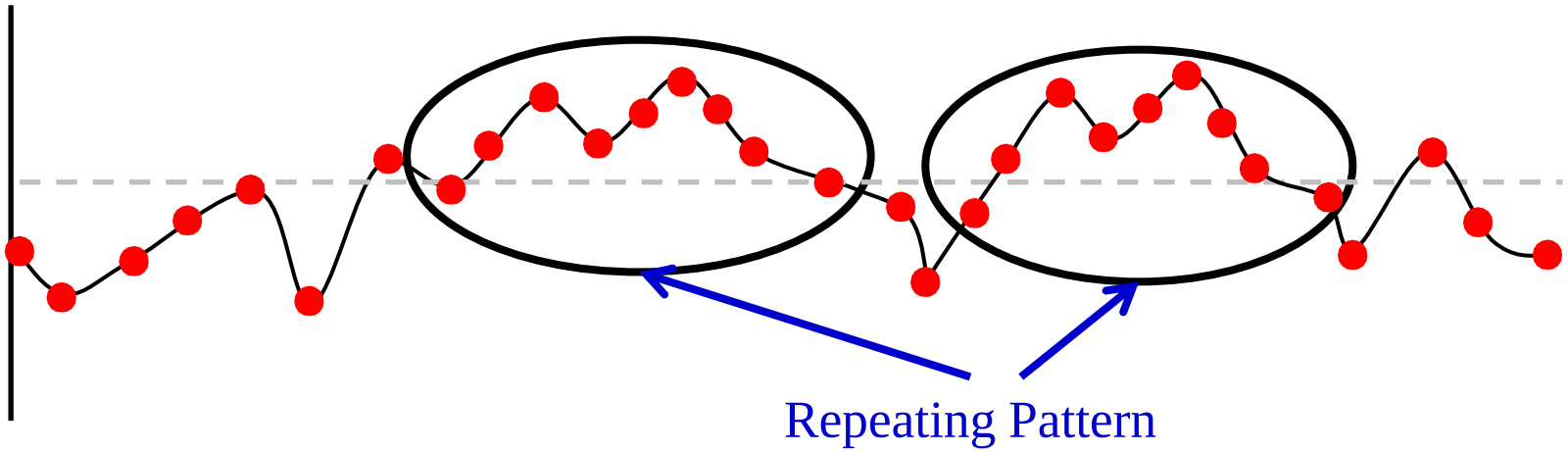
A Shift



A Trend

- Run Charts

- Is there a significant trend or pattern that should be investigated?



- Run Charts

Tips:

- You need to have 25 points or more in your data series.
- A long run might be a signal of:
  - A special cause variation.
  - A beginning of a common cause shift.
  - An improvement in the process.
- Whether or not a run is significant depends on the number of data points plotted.
- Run charts can also be used to track improvements that have been put into place, checking their success.