# SCATTER DIAGRAM

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A scatter diagram displays pairs of numerical data, with one variable on each axis, to look for a relationship between them. Scatter plots show how much one variable is affected by another. The relationship between two variables is called their correlation. If the variables are correlated, the points will fall along a line or curve. The better the correlation, the tighter the points will hug the line.

*Example of a Scatter Diagram created using Tableau.*
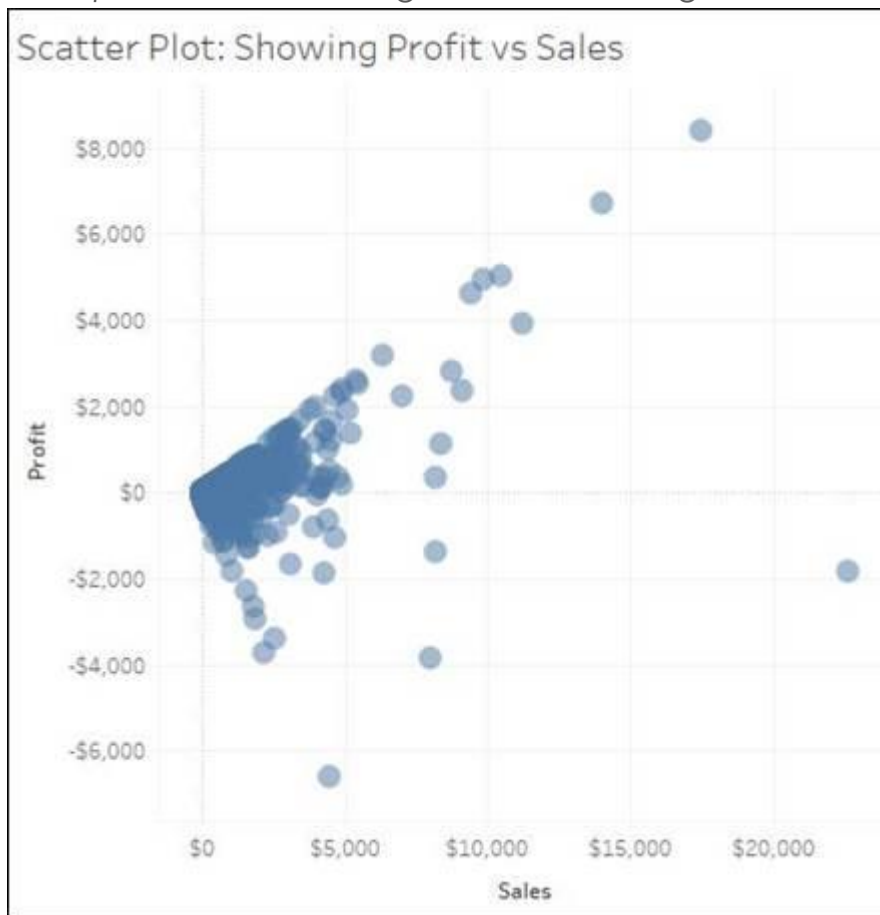
Scatter plots usually consist of a large body of data. The closer the data points come when plotted to making a straight line, the higher the correlation between the two variables, or the stronger the relationship.

If the data points make a straight line going from the origin out to high x- and y-values, then the variables are said to have a positive correlation. If the line goes from a high-value on the y-axis down to a high-value on the x-axis, the variables have a negative correlation.
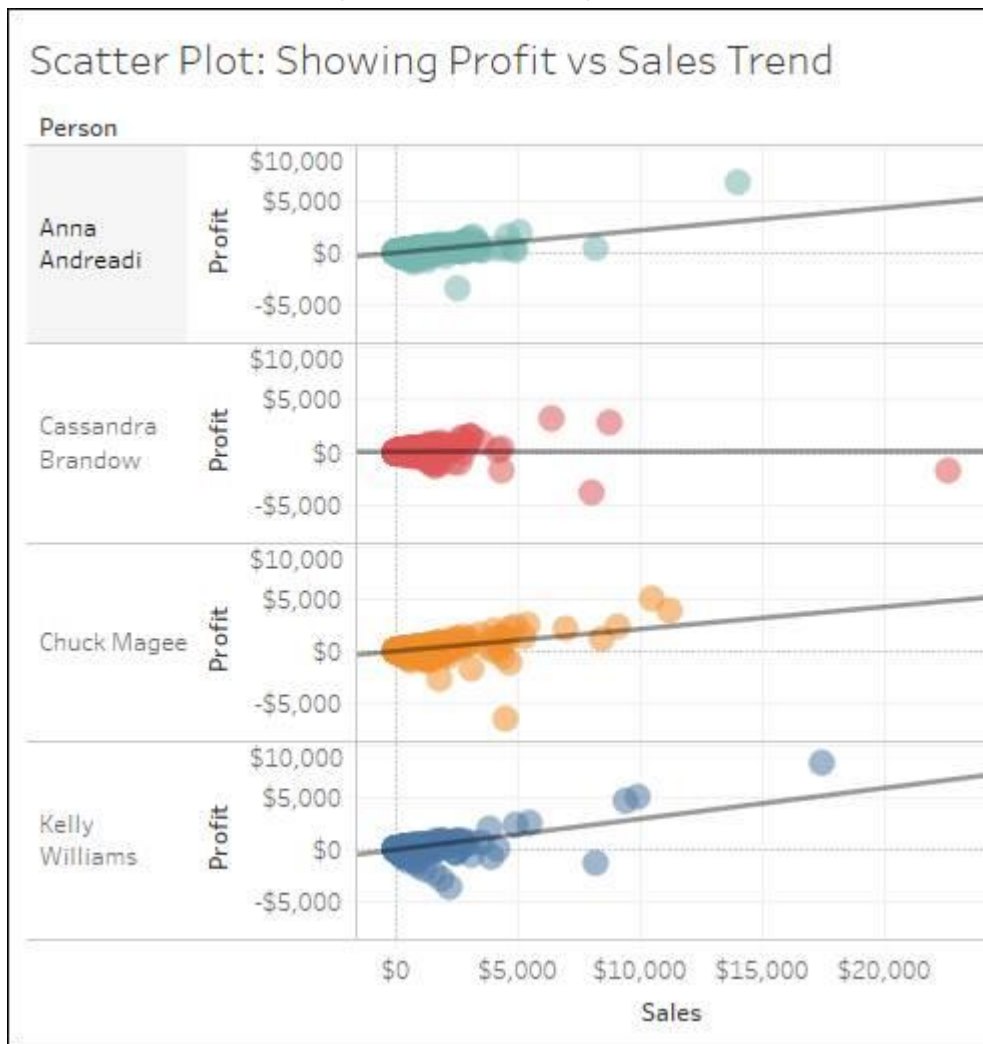
Perfect Positive Correlation
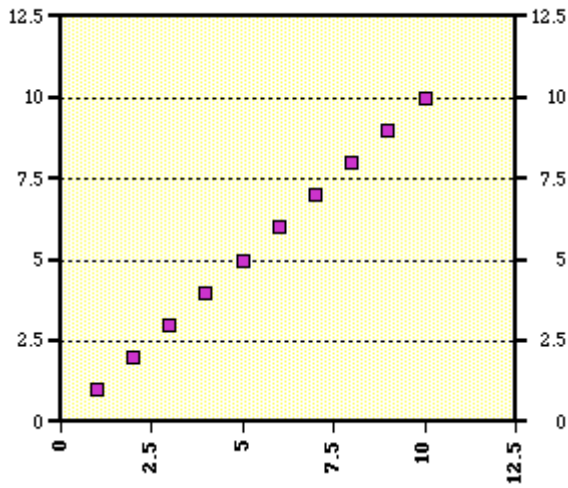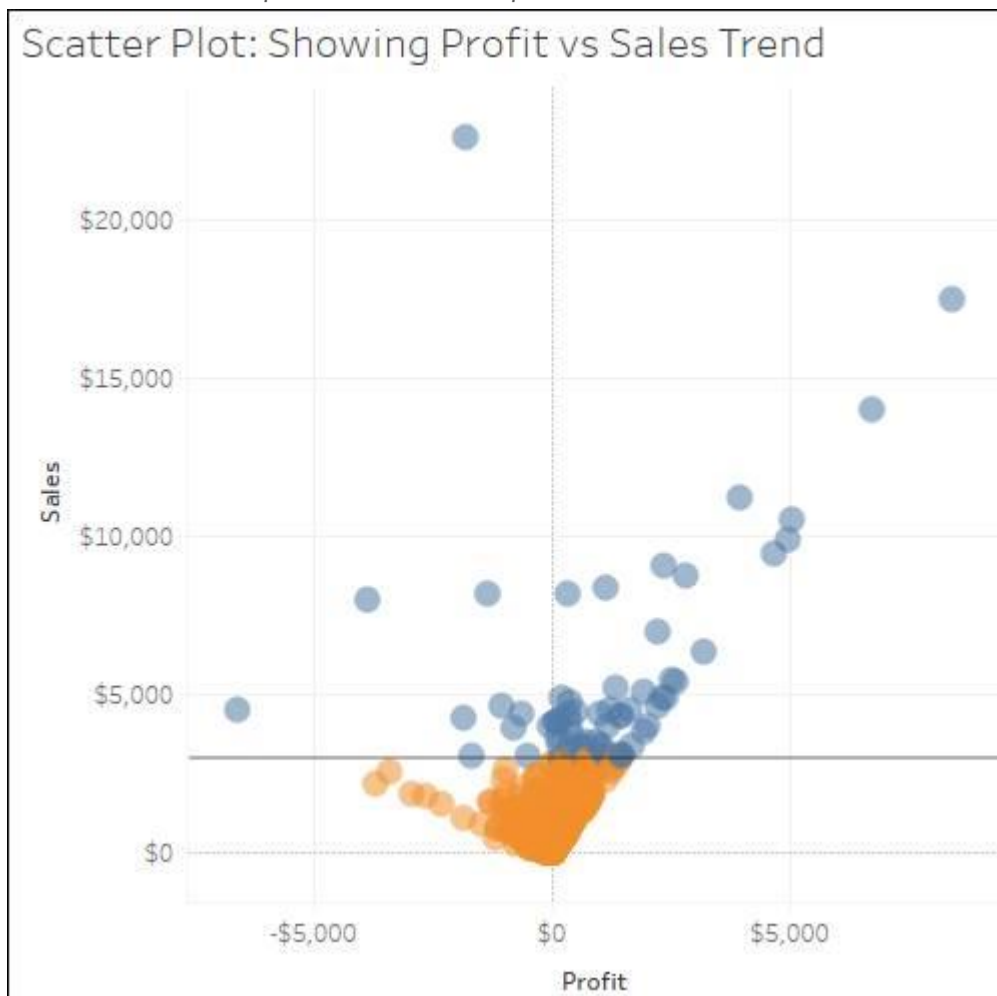

Perfect Negative Correlation
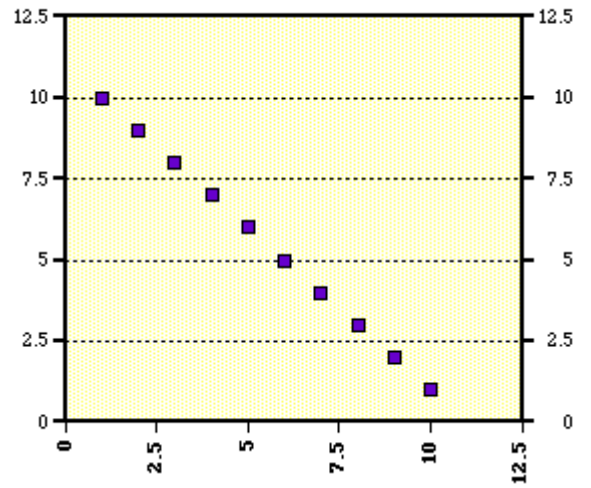
Here is another example of a Scatter plot.

Scatter Plot: Showing Profit vs Sales Trend

Applications:

- When you have paired numerical data.
- When your dependent variable may have multiple values for each value of your independent variable.
- When trying to identify potential root causes of problems.
- When determining whether two effects that appear to be related both occur with the same cause.
- When testing for autocorrelation before constructing a control chart.

One more example of a Scatter plot.

Sources:

http://mste.illinois.edu/courses/ci330ms/youtsey/scatterinfo.html

http://asq.org/learn-about-quality/cause-analysis-tools/overview/scatter.html