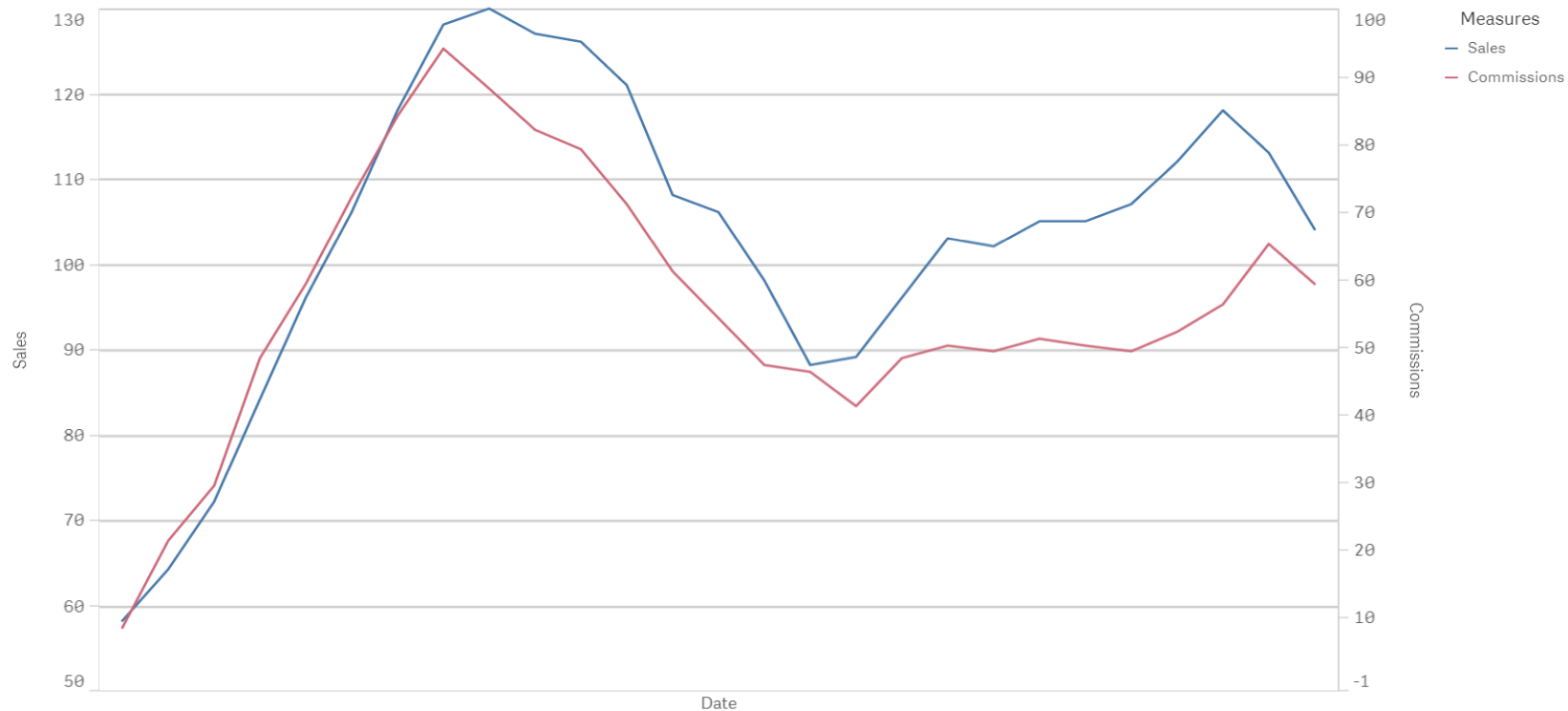


Correlation

As one variable tends to increase or decrease, a second variable tends to increase or decrease in parallel.


Correlation shows a relationship between two variables, whether positive or negative.


Sales & Commission Analysis




Correlation Coefficient

A single number representing correlation between two variables, denoted by the letter “r”; falling between 1.0 and -1.0.

- *Perfectly positive coefficient; $r = 1.0$*
- $r > 0$  *A positive relationship*
- *Positive relationship = as one variable increases, the second variable also increases*

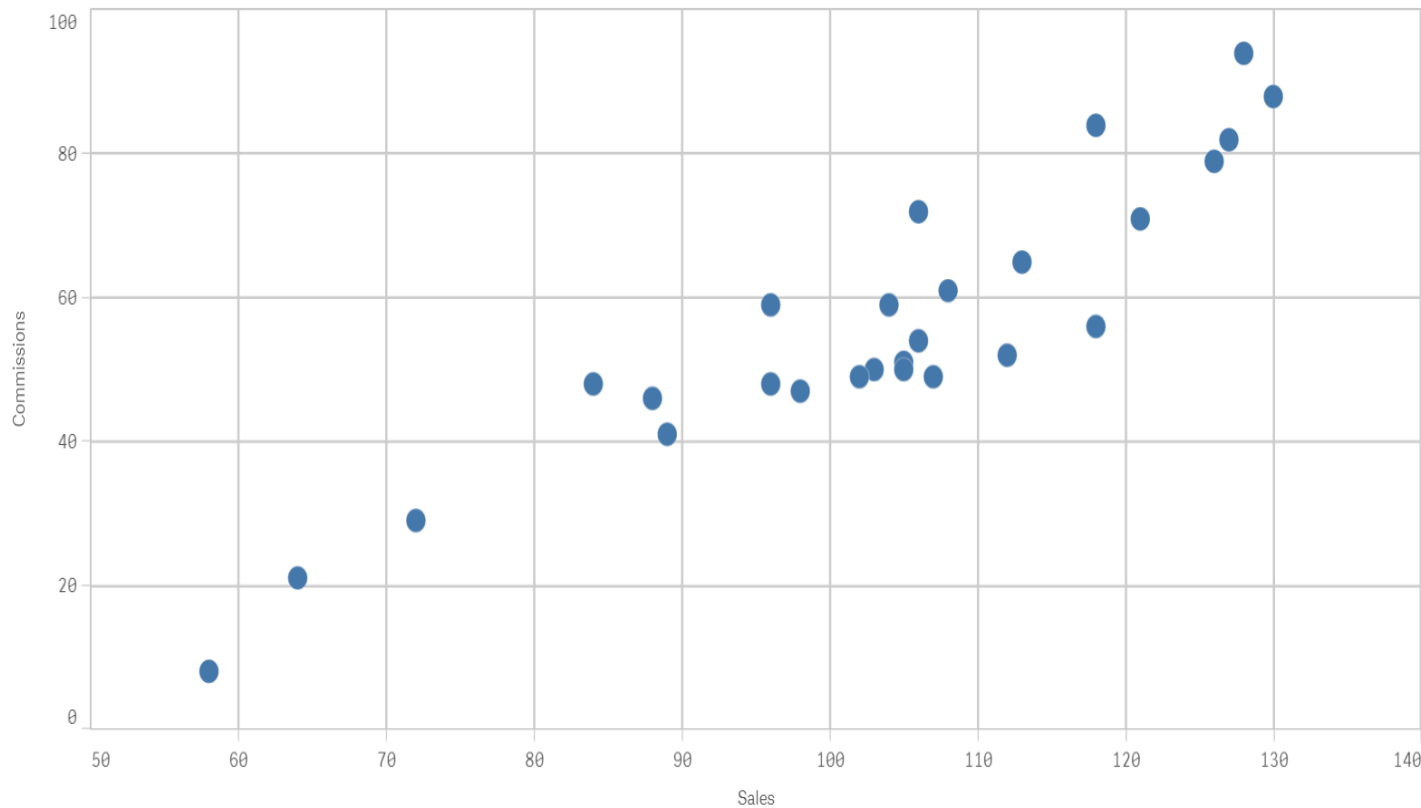
- *Perfectly negative coefficient; $r = -1.0$*
- $r < 0$  *A negative relationship*
- *Negative relationship = as one variable increases, the second variable will go in the opposite direction*

- $r = 0$  *No relationship*

Scatter Plot

A data visualization commonly used to show correlation.

Correlation: Sales & Commission



Correlation Coefficient

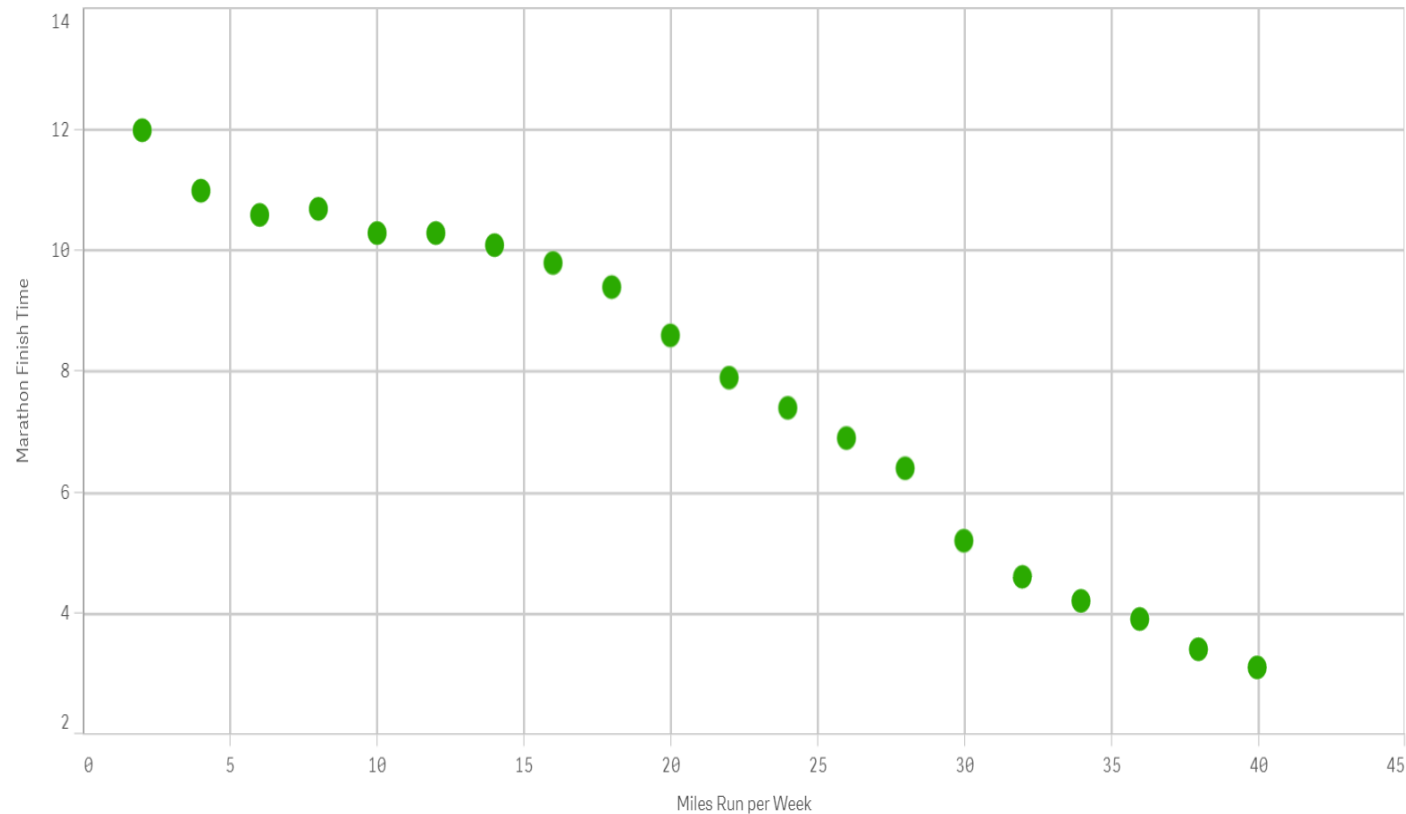
0.92

- *Positive relationship*

Scatter Plot

A data visualization commonly used to show correlation.

Marathon Time



Correlation Coefficient

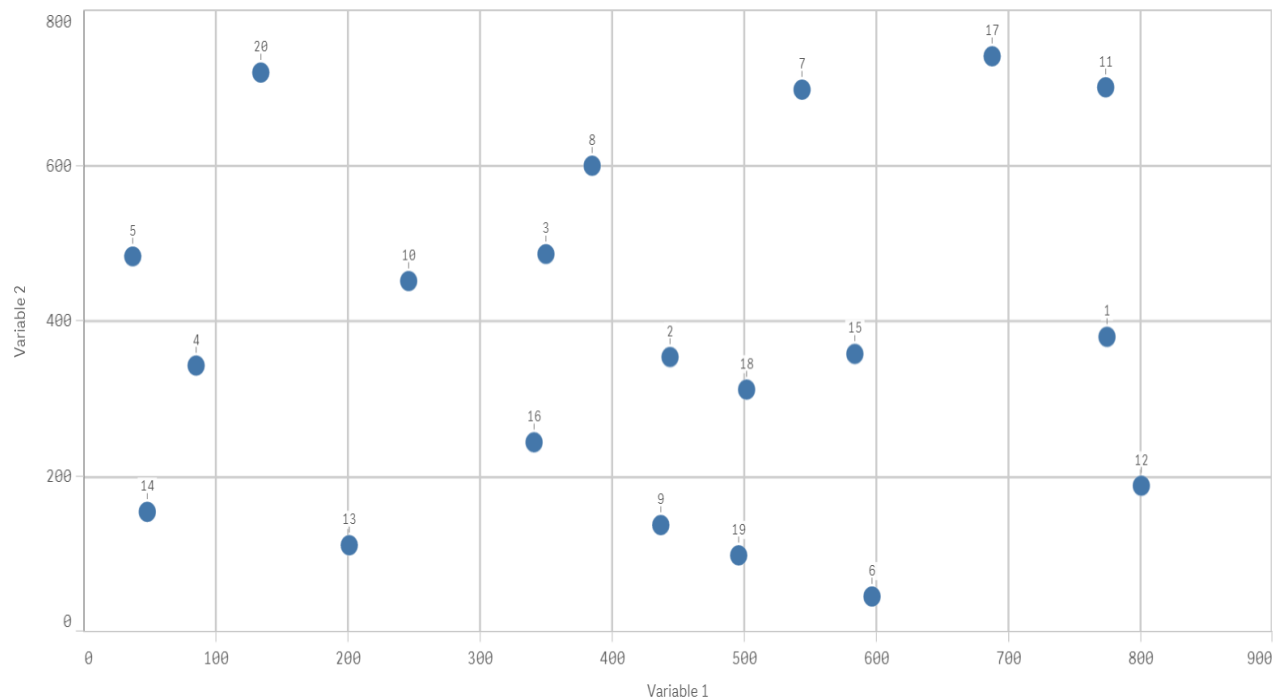
-0.98

- *Negative relationship*

Scatter Plot

A data visualization commonly used to show correlation.

No Relationship



Correlation Coefficient

0.08

- *No distinguishable pattern*
- *No relationship*
- *Correlation coefficient approaching zero*

Causation

A relationship does exist and is taken a step further: one variable causes an effect in another variable. To solve causation can take complex math and experimentation.

Correlation DOES NOT mean Causation

