

Pandas - Data Correlations

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Finding Relationships

A great aspect of the Pandas module is the corr() method.

The corr() method calculates the relationship between each column in your data set.

The examples in this page uses a CSV file called: 'data.csv'.

<u>Download data.csv</u>. or <u>Open data.csv</u>

Example

Get your own Python Server

Show the relationship between the columns:

df.corr()

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Result

```
Duration Pulse Maxpulse Calories
Duration 1.000000 -0.155408 0.009403 0.922721
Pulse -0.155408 1.000000 0.786535 0.025120
```



Note: The corr() method ignores "not numeric" columns.

Result Explained

The Result of the corr() method is a table with a lot of numbers that represents how well the relationship is between two columns.

The number varies from -1 to 1.

1 means that there is a 1 to 1 relationship (a perfect correlation), and for this data set, each time a value went up in the first column, the other one went up as well.

- 0.9 is also a good relationship, and if you increase one value, the other will probably increase as well.
- -0.9 would be just as good relationship as 0.9, but if you increase one value, the other will probably go down.
- 0.2 means NOT a good relationship, meaning that if one value goes up does not mean that the other will.

What is a good correlation? It depends on the use, but I think it is safe to say you have to have at least 0.6 (or -0.6) to call it a good correlation.

Perfect Correlation:

We can see that "Duration" and "Duration" got the number 1.000000, which makes sense, each column always has a perfect relationship with itself.

Good Correlation:



Bad Correlation:

"Duration" and "Maxpulse" got a 0.009403 correlation, which is a very bad correlation, meaning that we can not predict the max pulse by just looking at the duration of the work out, and vice versa.

Exercise?

True or false: A correlation of 0.9 is considered a good correlation.

- O True
- O False

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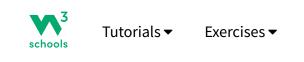


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