



# Pandas - Data Correlations

[< Previous](#)[Next >](#)

## 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'.

[Download data.csv.](#) or [Open data.csv](#)

## Example

[Get your own Python Server](#)

Show the relationship between the columns:

```
df.corr()
```

[Try it Yourself »](#)

## 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:

[Tutorials ▼](#)[Exercises ▼](#)[Services ▼](#)[Sign Up](#)[Log in](#)[≡](#) [PYTHON](#) [JAVA](#) [PHP](#) [HOW TO](#) [W3.CSS](#) [C](#) [C++](#) [C#](#) [BOOTSTRAP](#) [REACT](#)

## 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 <sup>?</sup>

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

☐ True

☐ False

[Submit Answer »](#)

[< Previous](#)[Next >](#)

Track your progress - it's free!

[Sign Up](#)[Log in](#)

[Tutorials ▼](#)[Exercises ▼](#)[Services ▼](#)[Sign Up](#)[Log in](#)[PYTHON](#) [JAVA](#) [PHP](#) [HOW TO](#) [W3.CSS](#) [C](#) [C++](#) [C#](#) [BOOTSTRAP](#) [REAC](#)

## COLOR PICKER

[PLUS](#)[SPACES](#)[GET CERTIFIED](#)[FOR TEACHERS](#)

[Tutorials ▼](#)[Exercises ▼](#)[Services ▼](#)[Sign Up](#)[Log in](#)[≡](#) [PYTHON](#) [JAVA](#) [PHP](#) [HOW TO](#) [W3.CSS](#) [C](#) [C++](#) [C#](#) [BOOTSTRAP](#) [REAC](#)

## Top Tutorials

[HTML Tutorial](#)  
[CSS Tutorial](#)  
[JavaScript Tutorial](#)  
[How To Tutorial](#)  
[SQL Tutorial](#)  
[Python Tutorial](#)  
[W3.CSS Tutorial](#)  
[Bootstrap Tutorial](#)  
[PHP Tutorial](#)  
[Java Tutorial](#)  
[C++ Tutorial](#)  
[jQuery Tutorial](#)

## Top References

[HTML Reference](#)  
[CSS Reference](#)  
[JavaScript Reference](#)  
[SQL Reference](#)  
[Python Reference](#)  
[W3.CSS Reference](#)  
[Bootstrap Reference](#)  
[PHP Reference](#)  
[HTML Colors](#)  
[Java Reference](#)  
[Angular Reference](#)  
[jQuery Reference](#)

## Top Examples

[HTML Examples](#)  
[CSS Examples](#)  
[JavaScript Examples](#)  
[How To Examples](#)  
[SQL Examples](#)  
[Python Examples](#)  
[W3.CSS Examples](#)  
[Bootstrap Examples](#)  
[PHP Examples](#)  
[Java Examples](#)  
[XML Examples](#)  
[jQuery Examples](#)

## Get Certified

[HTML Certificate](#)  
[CSS Certificate](#)  
[JavaScript Certificate](#)  
[Front End Certificate](#)  
[SQL Certificate](#)  
[Python Certificate](#)  
[PHP Certificate](#)  
[jQuery Certificate](#)  
[Java Certificate](#)  
[C++ Certificate](#)  
[C# Certificate](#)  
[XML Certificate](#)

[FORUM](#) [ABOUT](#) [ACADEMY](#)

W3Schools is optimized for learning and training. Examples might be simplified to improve reading and learning.

Tutorials, references, and examples are constantly reviewed to avoid errors, but we cannot



Tutorials ▼

Exercises ▼

Services ▼



Sign Up

Log in

☰ PYTHON JAVA PHP HOW TO W3.CSS C C++ C# BOOTSTRAP REAC