# Statistics 2

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## Different Types of Analytics in Statistics


| Analytics types | Definition |
|---|---|
| 1. Descriptive Analytics – **What happened?** | It tells us what happened in the past and helps businesses understand how they are performing by providing context to help stakeholders interpret data. |
| 2. Diagnostic Analytics – **Why did it happen?** | It goes beyond descriptive data to assist you in comprehending why something occurred in the past. (check correlation) |
| | |

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|---|---|
| 3. Predictive Analytics – **What is likely to happen?** | It forecasts what is likely to happen in the future and provides businesses with data-driven actionable insights. (Statistics is a building block of data science) |
| 4. Prescriptive Analytics – **What should be done ?** | It makes recommendations for actions that will capitalise on the predictions and guide the potential actions toward a solution. Prescriptive analytics is the final and most advanced level of analytics. |

# Diagnostic Analytics - Statistical Concepts for Data Scientists

## 4. Correlation - Multivariate Measures

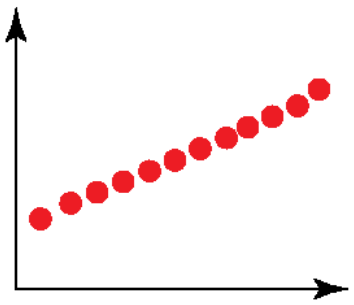
Correlation is a statistical method for determining whether or not two quantitative or categorical variables are related. To put it another way, it's a measure of how things are connected. Correlation measures the relationship between two variables and ranges from *-1 to 1*

**Examples of data with a high correlation:**

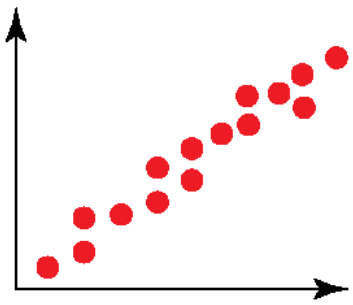
1. Your calorie consumption and weight.
2. Your eye colour and the eye colours of your relatives.

**Examples of data with poor (or no) correlation:**

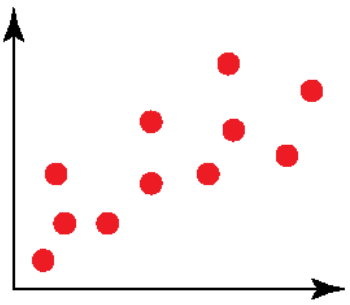
1. Your sexual preference and the cereal you eat are two factors to consider.
2. The name of a dog and the type of dog biscuit that they prefer.



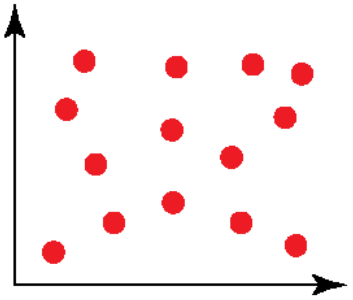
Perfect Positive Correlation



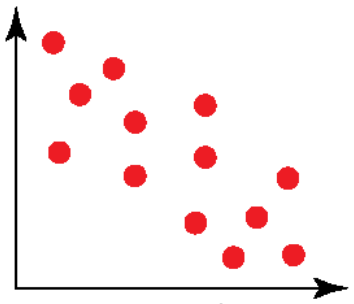
Strong Positive Correlation



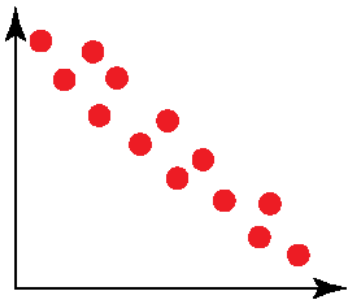
Weak Positive Correlation



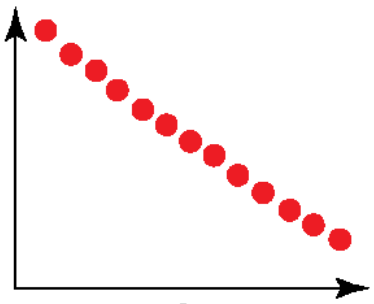
No Correlation



Weak Negative Correlation



Strong Negative Correlation



Perfect Negative Correlation

*User-uploaded image: diksha-q-how-to-calculate-correlation-coefficient-01-1609233340.png*

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## Resources:

- https://www.w3schools.com/statistics/
- https://www.analyticsvidhya.com/blog/2021/10/end-to-end-statistics-for-data-science/
- https://www.kdnuggets.com/2020/06/8-basic-statistics-concepts.html
- https://hevodata.com/learn/statistics-for-data-analytics/
- https://makemeanalyst.com/basic-statistics-for-data-analysis/#Basic_Statistics