

# Statistics 2

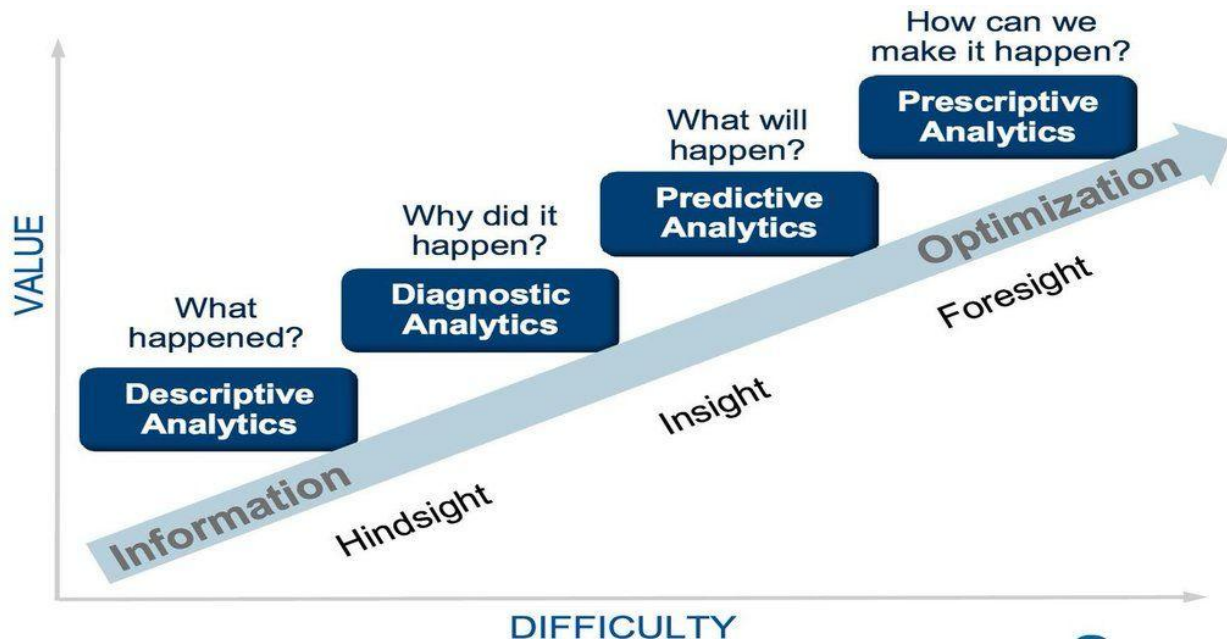
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## Different Types of Analytics in Statistics



Analytics types	Definition
1. Descriptive Analytics – <b>What happened?</b>	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 – <b>Why did it happen?</b>	It goes beyond descriptive data to assist you in comprehending why something occurred in the past. (check correlation)
3. Predictive Analytics – <b>What is likely to happen?</b>	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 – <b>What should be done ?</b>	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

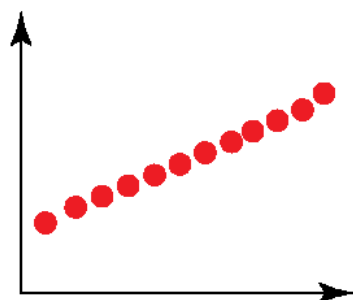
Correlation is a statistical method for determining whether or not two quantitative or categorical variables are related. To put it another way, it's a measure of how things are connected. Correlation measures the relationship between two variables and ranges from  $-1$  to  $1$

### Examples of data with a high correlation:

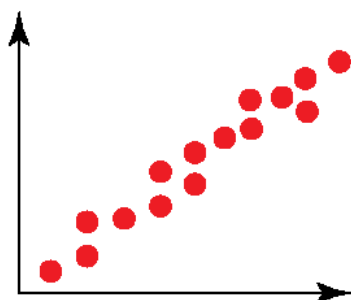
1. Your calorie consumption and weight.
2. Your eye colour and the eye colours of your relatives.

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

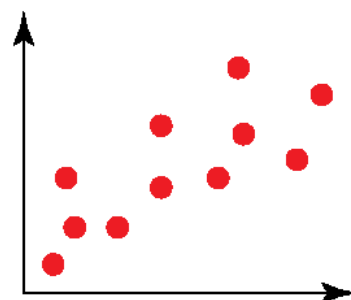
1. Your sexual preference and the cereal you eat are two factors to consider.
2. The name of a dog and the type of dog biscuit that they prefer.



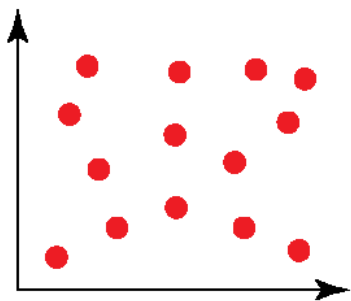
Perfect  
Positive  
Correlation



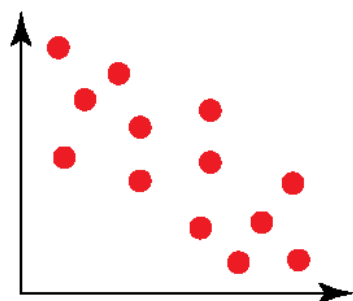
Strong  
Positive  
Correlation



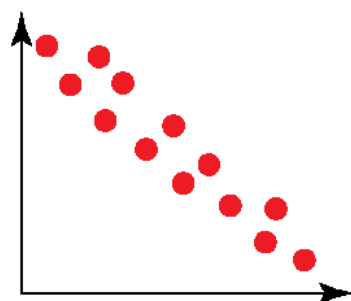
Weak  
Positive  
Correlation



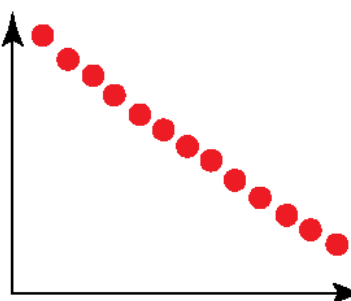
No  
Correlation



Weak  
Negative  
Correlation



Strong  
Negative  
Correlation



Perfect  
Negative  
Correlation

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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](https://makemeanalyst.com/basic-statistics-for-data-analysis/#Basic_Statistics)