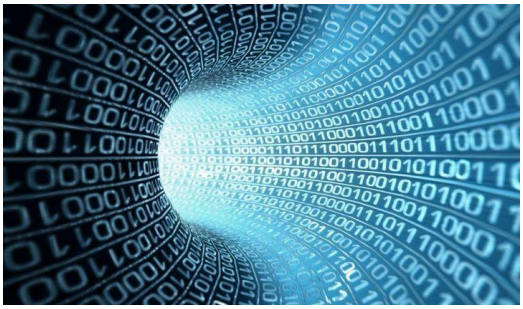
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5.1 Data Concepts and Graphical Summaries



There's a large amount of data flowing around the world. In 2012 alone, almost 3 *zeta*bytes (i.e. 3 trillion gigabytes, or 3 x 10^{21} bytes) were moved and stored online. It helps to be able to classify the kinds of data we are examining, so that we can make meaningful comparisons.

A. Categories! Consider the types of information, below:

a) Number of siblings
b) Heights of students
c) Country of birth
d) Learning skills on your report card

1. What are some general similarities or differences between a) - d) ? Can you group any similar items together? What is your reasoning for your groupings?

   Data (a) can be defined as numerical discrete data. This type of data can't be measured but it can be counted. In this case the number of siblings can be counted. On the other hand, data (d) can be referred to as categorical ordinal data which mainly represents characteristics of a variable. In this case the skills in the report card gives character to the variable.

   Data (a) and (b) are both Numerical data. Both data can be represented in form of numbers.
   Data (c) and (d) are both categorical data which represent the characteristics of a variable.

2. How are data from a) and b) similar? What general name could you give to these kinds of data?

   Data (a) and (b) are both Numerical data. Both data can be represented in form of numbers.

3. How are a) and b) different? Explain.

   Data (a) can be defined as a numerical discrete data. This type of data can't be measured but it can be counted. On the other hand, data (b) is defined as a numerical continues data. This type of data represents data that can be measures but can't be counted.

4. How are c) and d) similar? What general name could you give to these kinds of data?

   Data (c) and (d) are both categorical data which represent the characteristics of a variable.

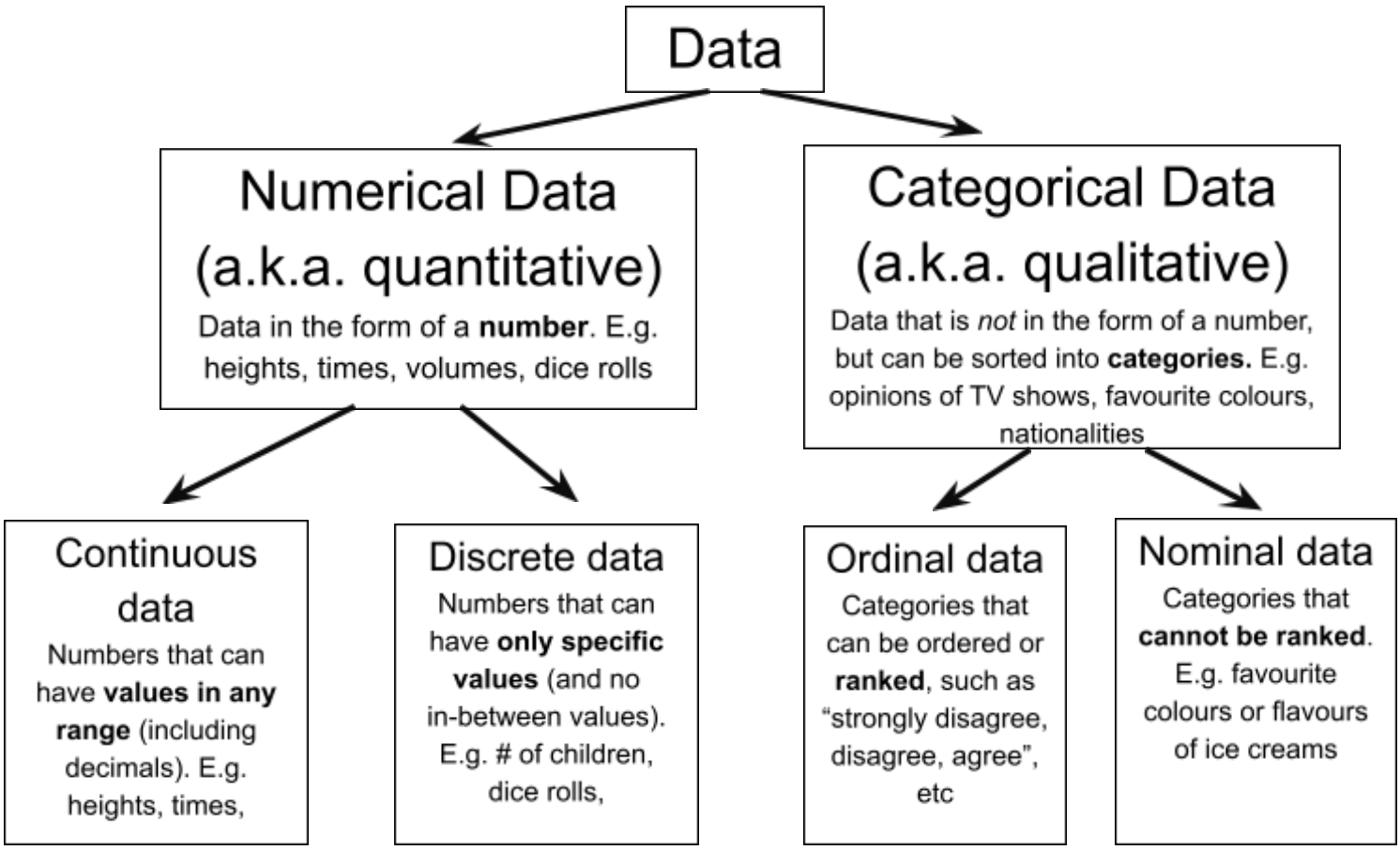
5. How are c) and d) different? Explain.

   Data (c) can be defined as a categorical nominal data. This type of data doesn't have quantitative values. They are used to label variables. In this case country is a label. On the other hand, data (d) is defined as a categorical ordinal data. This type of data represents non-numeric variables. It represents data in order of units.

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--stop here and check in with your teacher before continuing----

As you may have discovered, we can separate data into a few types:



Use the classifications above to **classify** the four types of data from the first page. (Include the **main** category and **sub**category, e.g. "categorical ordinal")

a) Number of siblings - Numerical Discrete
b) Heights of students - Numerical Continuous
c) Country of birth - Categorical Nominal
d) Learning skills on your report card - Categorical Ordinal

B. <u>Practice.</u> Classify each of the following:

1. A survey asks people to rate their concerns about online privacy from 1 – 5. - Categorical Ordinal
2. A survey asks 1000 people how many hours of TV they watch.- Numerical Continuous
3. The number of condo units in an apartment building.- Numerical Discrete
4. The sorting of songs in your song collection by genre. - Categorical Ordinal
5. The number of chocolate chips found in cookies. - Numerical Discrete
6. The brand of refrigerators that students have at home. - Categorical Nominal

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7. The volumes of carbon dioxide produced each day. - Numerical Discrete
8. A survey asking people to rate their experience of the last superhero movie.- Categorical Nominal

Check with teacher, then 5.1 HW pg 203 # 1, 2