



Attribute data in Context

“Attribute values may be defined with respect to nominal, ordinal, interval, or ratio scales of measurement. It is important to recognize the scales of measurement used in GIS data as this determines the kinds of mathematical operations that can be performed on the data.”

In this module, we try to categorize data and explore the types of operation that can be applied to a dataset.



Nominal Data: it serves only to identify or distinguish one entity from another. A nominal data set is just a set of names, except the names, take the form of numbers.

Give four examples of nominal data.

Binary scale: A special case of nominal scale when there is only two dichotomous (division into two parts) possible outcomes example: wet/dry land.

Give four examples of binary scale data.

Ordinal Scale: Ordinal scale requires some ranking criterion; e.g., desirable residential areas. It requires an asymmetric relationship between objects

Give four examples of ordinal scale data.

Interval: Interval scale is a “true” metric scale. Ordering as well as “distance” is implied

Ratio: Ratio scale is another “true” metric scale. It has an inherent (or “true”) zero and can, therefore, be used to compare ratios: for example, a 50-year old person has spent twice as many years on this planet as a 25-year old.

<i>Data</i>	<i>Classification/Category</i>
Gender (Male or Female)	
Blood type (A, B, O)	
Socio economic status (rich,poor,wealthy)	
Level of agreement (yes,no,maybe)	
Time on a clock with hands	
IQ (intelligence scale rated from 1 to 10)	
The number of pizzas I can eat before fainting	
Ruler measurements	



More about categorising attribute data

When dealing with attributes it is important to understand what classification category they fall under. This helps in applying the right symbolization. For example, when dealing with discrete data only categorized classification can be used whilst when dealing with continuous data categorized and graduated classification can be used. Knowing the attribute category enables a user to efficiently use the appropriate algorithm.



Check your knowledge:

1. Can temperature and rainfall be classified as discrete data ?:

- a) Yes
- b) No
- c) Neither

2. Which of the following statement is true:

- a) Attributes for raster layers include the geometry
- b) The geometry column is always visible in a table.
- c) Attribute table can contain binary or interval data.

3. Is attribute data specific to vector data:

- True
- False

Answers: 1b 2c, 3f



Further reading:

https://cirt.gcu.edu/research/developmentresources/research_ready/quantresearch/scales

<http://simplyeducate.me/2012/12/16/4-statistical-scales-of-measurement/>

https://docs.qgis.org/2.14/en/docs/training_manual/vector_classification/index.html