

# Consistency

## Definitions

- Temporal consistency is the degree to which **data values** of a **data element** of a **dataset** at different points in time comply with a **data quality rule**.
- Consistency across datasets is the degree to which **data values** of **data elements** of different **datasets** comply with a **data element** of a **dataset** at different points in time comply with a **data quality rule**.
- Cross records consistency is the degree to which **data values** between **data records** comply with a **data element** of a **dataset** at different points in time comply with a **data quality rule**.
- Record level consistency is the degree to which two **data values** within a **data record** comply with a **data element** of a **dataset** at different points in time comply with a **data quality rule**.

## Relations

- Consistency is a **characteristic** of **data values** of **data element** of a **dataset**.
- Consistency is a **characteristic** of **data values** of **data elements** of different **datasets**
- Consistency is a **characteristic** of **data values** between **data records**.
- Consistency is a **characteristic** of **data values** within a **data record**

## Examples

### Inconsistency within a record

Adress	Postcode	City
Veldweg 11	8051 NK	Hattem

Postcode doesn't match with adress.

Data quality rule: The postcode matches the address according to the postcode table

### Inconsistency within a file

ID	Customer	City name
248	Johson	Alphen aan den rijjn
2342	Smith	Alphen a/d rijjn

Different spelling of city name.

Data quality rule: City names are spelled out in a uniform manner.

### Inconsistency between two files

ID	Initials	Name
4320	T	Sanders

ID	Initials	Name
4320	T.M.D	Sanders

Inconsistency: Different initials of the same customer.  
Data quality rule: Initials of the same person are the same.

### Inconsistency over time

License plate	Date	Mileage
123-RT-97	6 March 2020	60,543
123-RT-97	8 May 2021	45,765

Inconsistency: Mileage decreases over time.  
Data quality rule: Mileage increases over time or remained the same.

### Reference

DAMA NL (2020). Dimensions of Data Quality (DDQ). Research paper.  
<https://www.dama-nl.org/wp-content/uploads/2020/09/DDQ-Dimensions-of-Data-Quality-Research-Paper-version-1.2-d.d.-3-Sept-2020.pdf>

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