Reference card

Types of data

Quantitative

Measures values expressed as **numbers**.

Often associated with **measurement units**.

Answers questions such as:

"How much?"	**"How long?"**
"How many?"	**"How often?"**

Discrete

Values that can only be **integers** and within some defined range.

Integers	Positive and negative whole numbers and zero. E.g. 101 employees

NaN (Not a Number)

Values that are **undefined** or **unrepresentable**.

Mostly occurs after a mathematical operation couldn't produce a value.

E.g. the square root of a negative number.

Continuous

Any of an **infinite number** of values in some defined range.

Floating-point	A positive or negative whole number with a decimal point. E.g. $1.25
Datetime	Distinguishes dates and times from numeric data. E.g. 4:15 PM

Qualitative

Describes the qualities or **characteristics** of an **observation**.

Cannot easily be expressed using **numbers**.

Answers questions such as:

"What?"	**"Why?"**
"How?"	**"Which?"**

Nominal

Groups observations with the **same characteristics** but no intrinsic ranking.

String	E.g. job titles describe employees but can't be ordered in a meaningful way.

Ordinal

Similar to nominal except grouped data can be **assigned ranks**.

String	E.g. education level where PhD ranks higher than Master's and so on.

Binary

Only accepts two values: **1**, the attribute **is present**, and **0**, it **is not present**.

Boolean	True or False are used to represent the data.
Integer	1 or 0 are used to represent the data. E.g. a company's seniority has executive and non-executive employees.