

Exploring Variable Types in **DATA ANALYSIS**





You are free to eat.



Am I?



You are!

Have a dumpling.



Just like that? No sit-ups,
no... no... no 10-mile hike?



What is that?



Just a small question.

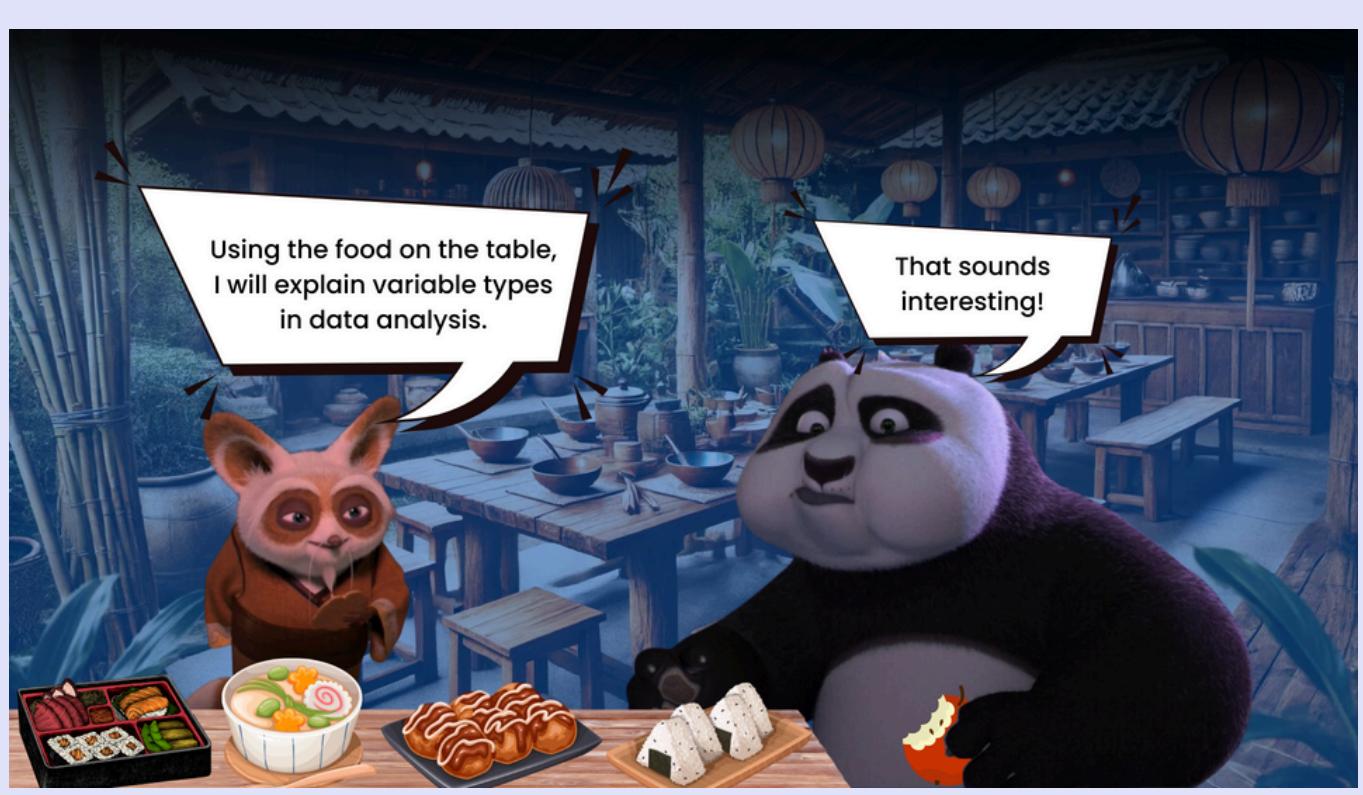


So silly!
Anyone can see yummy, delicious,
mouth-watering food.



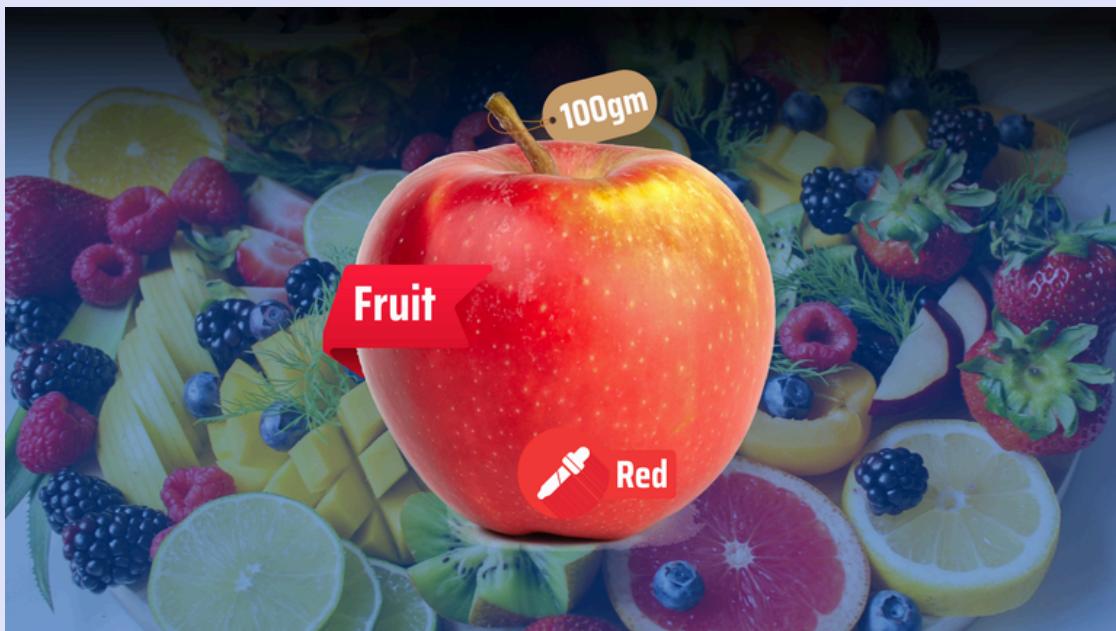
What do you see on
the table?







WHAT ARE VARIABLES?



Variables are elements, features, or quantities that can vary or change. They can represent different aspects such as measurements, categories, or states of an object or event. In data analysis, variables are used to describe data points and the relationships between them.



TYPES OF VARIABLES

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QUALITATIVE
(CATEGORICAL)

NOMINAL

ORDINAL

QUANTITATIVE
(NUMERICAL)

DISCRETE

CONTINUOUS

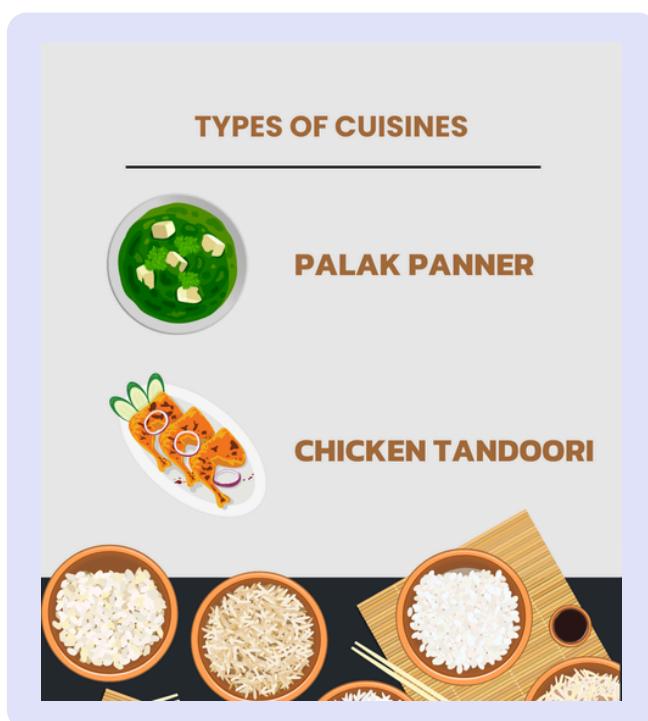
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CATEGORICAL VARIABLES

Categorical variables represent characteristics or attributes and can be divided into categories.

They consist of non-numeric data.

Example: Types of cuisines

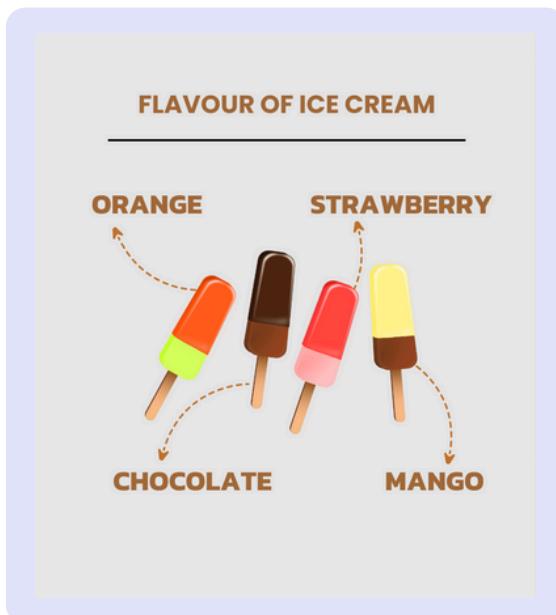


There are two types of categorical variables:

- ▶ **Nominal**
- ▶ **Ordinal**

► Nominal Variable

- Nominal variables have categories without a **specific order**.
- Examples: Gender, eye colour, flavour of ice cream etc.
- These variables are used to **label distinct categories**.



► Ordinal Variable

- Ordinal variables have categories with a **meaningful order**.
- Examples: Customer satisfaction ratings, military ranks, spice level etc.



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NUMERICAL VARIABLES

Numerical variables represent quantities that can be counted or measured.

They consist of numeric data.

Example: Price

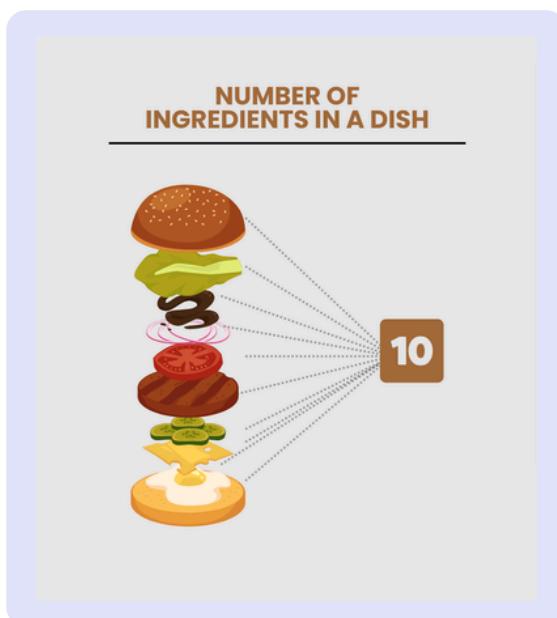


There are two types of numerical variables:

- ▶ **Discrete**
- ▶ **Continuous**

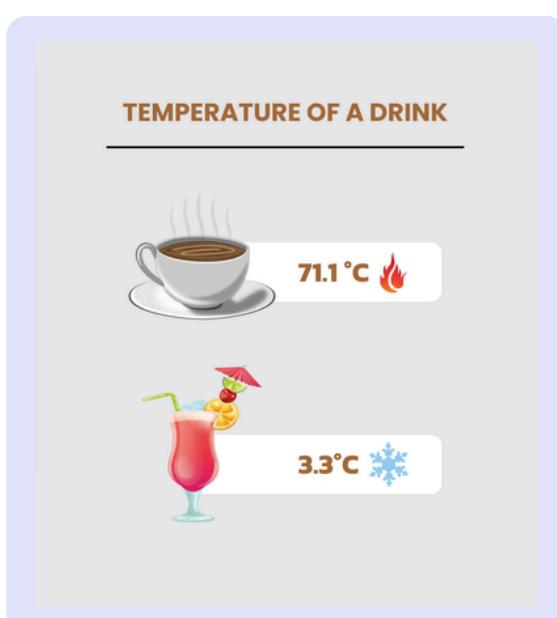
► Discrete Variable

- Discrete variables can take **specific, distinct values**.
- **Examples:** Number of children, number of cars, number of ingredients in a dish etc.
- Discrete variables are often **counted** and can be represented by integers.



► Continuous Variable

- Continuous variables can take any value within a range.
- **Examples:** Height, weight, temperature, time etc.
- Continuous variables are often **measured** and can be represented by a real number.





DATA VISUALIZATION TECHNIQUES

Visualizing data helps in understanding the distribution, relationships, and patterns among variables.

► Continuous Variables

For continuous variables use histograms, scatter plots, and box plots.

► Discrete Variables

For discrete variables use bar charts and pie charts.

► Categorical Variables

For categorical variables use bar charts, pie charts, and stacked bar charts.

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about data visualization.





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