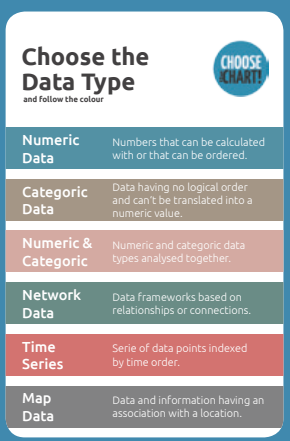
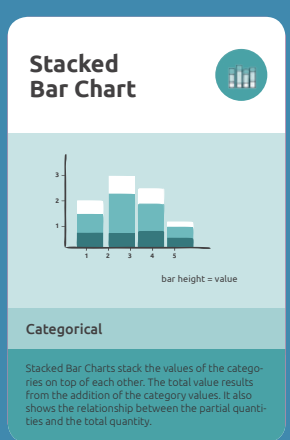
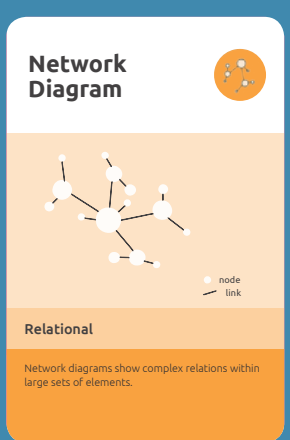
# How to use


Find the fitting chart by Chart Category or Data Type. You will find explanations on each specific card.




All charts are grouped and coloured by Chart Category.



All charts are assigned to one Data Type.

# Choose the Data Type

and follow the colour


| | |
|---|---|
| **Numeric Data** | Numbers that can be calculated with or that can be ordered. |
| **Categoric Data** | Data having no logical order and can't be translated into a numeric value. |
| **Numeric & Categoric** | Numeric and categoric data types analysed together. |
| **Network Data** | Data frameworks based on relationships or connections. |
| **Time Series** | Serie of data points indexed by time order. |
| **Map Data** | Data and information having an association with a location. |

# Choose the Chart Category

and follow the colour


| | |
|---|---|
| **Categorical** | Comparison of categories and distributions of quantitative values. |
| **Relational** | Representation of relationships to investigate correlations and connections. |
| **Hierarchical** | Representation of part-of-group relationships and hierarchies. |
| **Temporal** | Showing trends and activities over time. |
| **Spatial** | Mapping of spatial patterns through superposition and distortion. |

# About

CHOOSE the CHART!

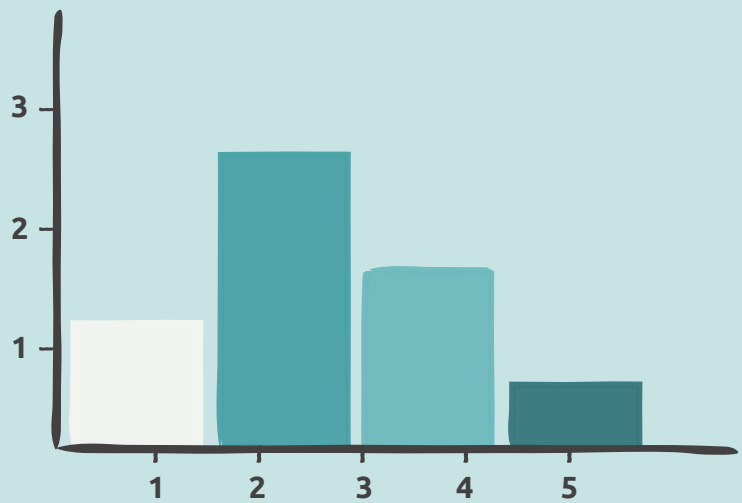
To figure out what visual form will make your point is an crucial step in data analysis. CHOOSE the CHART! shows number of ways how data can be visualised. To ensure well founded guidance current literature from the field of Data Visualisation was consulted.

PROJECT: This card set is part of a master thesis in Graphic Design at the University of Applied Sciences, St. Pölten, Austria.
The other part is an application designed to use on tablets.

CONCEPT & DESIGN: Judith Rührer

CONTACT: judithruehrer.work

# Bar Chart

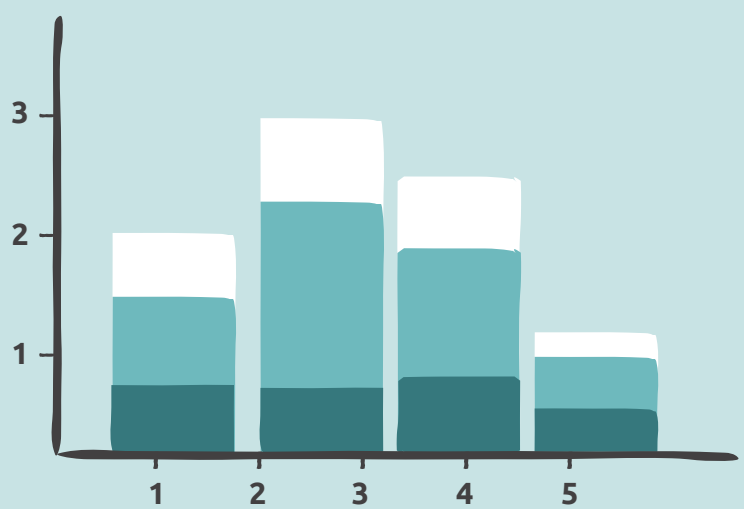



bar height = value

## Categorical

Bar Charts visualise the comparison between discrete measured values of different categories. The bars can be arranged horizontally or vertically.

# Stacked Bar Chart

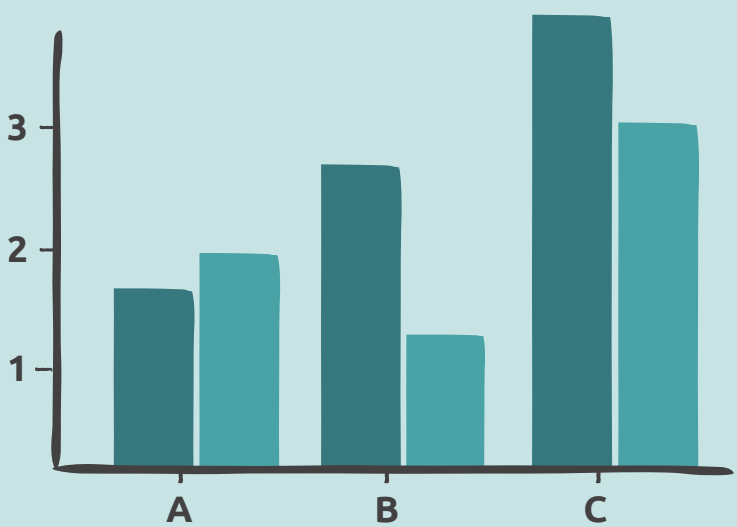



bar height = value

## Categorical

Stacked Bar Charts stack values of categories on top of each other. The total value results from addition of category values. Also relationships between partial quantities and the total quantity are shown.

# Grouped Bar Chart



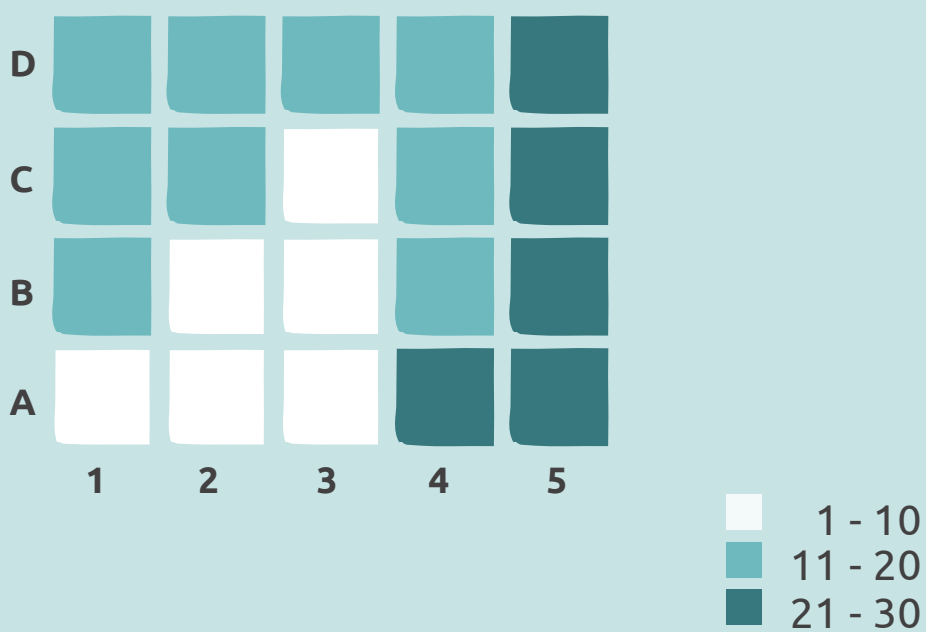

bar height = value

A, B, C = category

## Categorical

Grouped Bar Charts compare two or more data sets grouped into categories. It can become confusing if too many data sets are displayed.

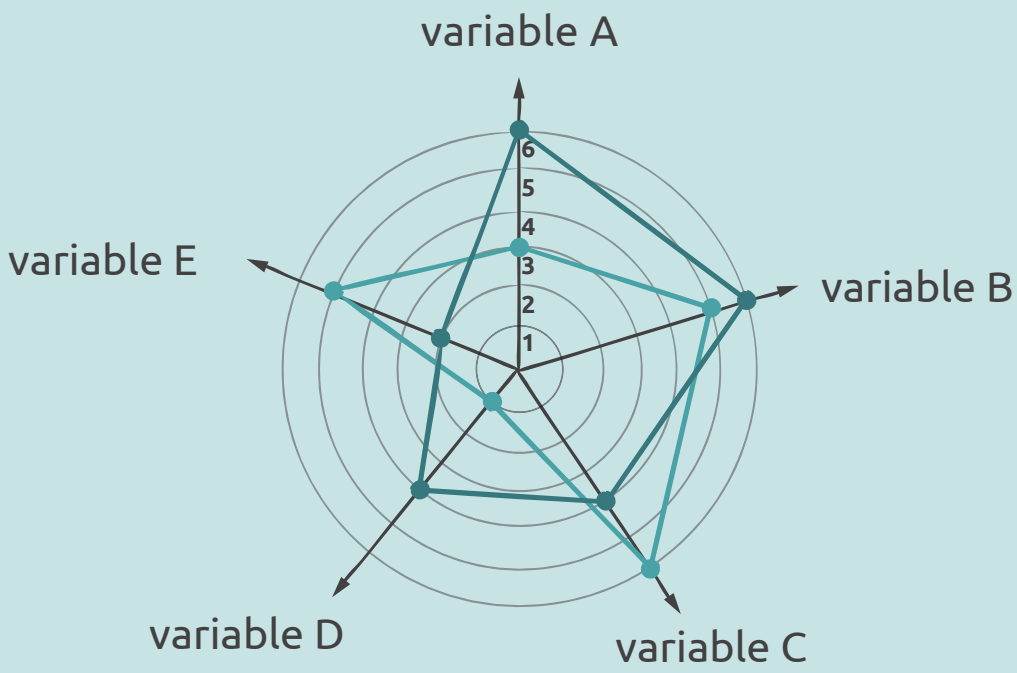
# Heat Map




## Categorical

Heat Maps show data values through colour gradation. They are good for showing variance across multiple variables or existing correlations.

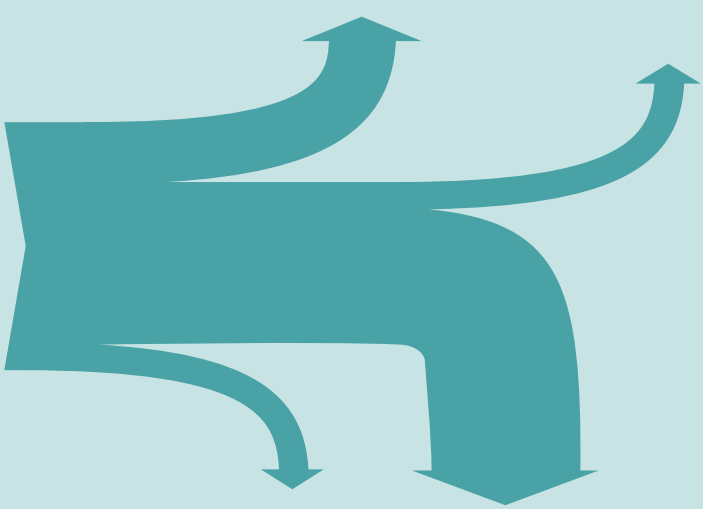
# Radar Chart




## Categorical

Radar Charts show the comparison of several quantitative variables; well suited to quickly identify outliers and analog values. To keep it clear, only a few variables should be used.

# Sankey Diagram



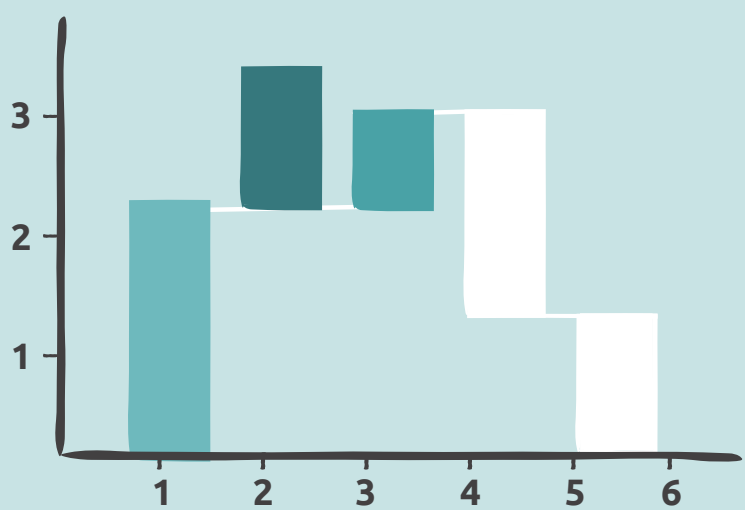
flow direction

arrow thickness = quanity

## Categorical

Sankey Charts visualise volume flows in their size and direction. Typically, energy or material flows are shown.

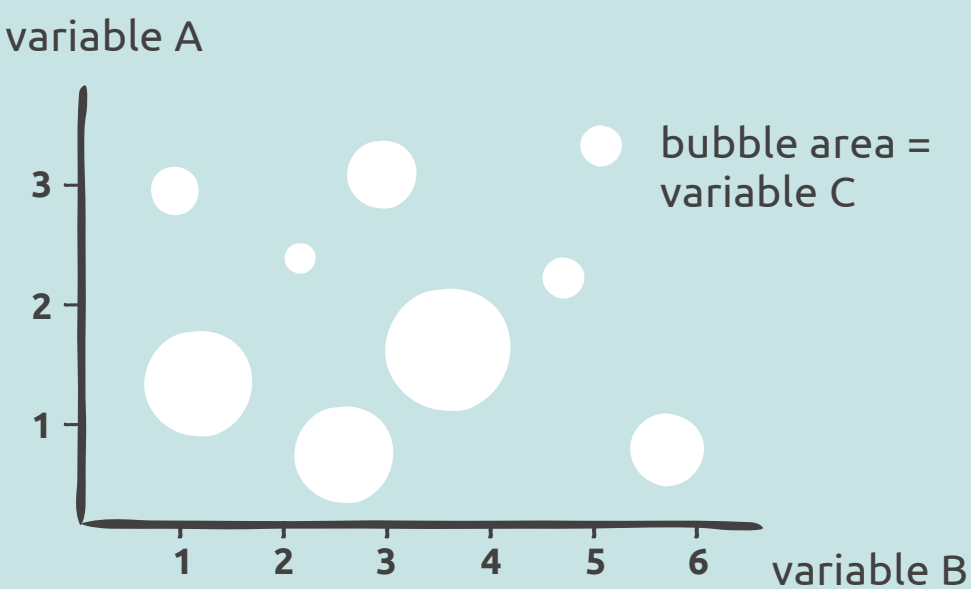
# Waterfall Chart




## Categorical

Waterfall Charts visualise the cumulative effect of sequentially effective positive or negative values. Show how the initial value changes by adding or removing certain values.

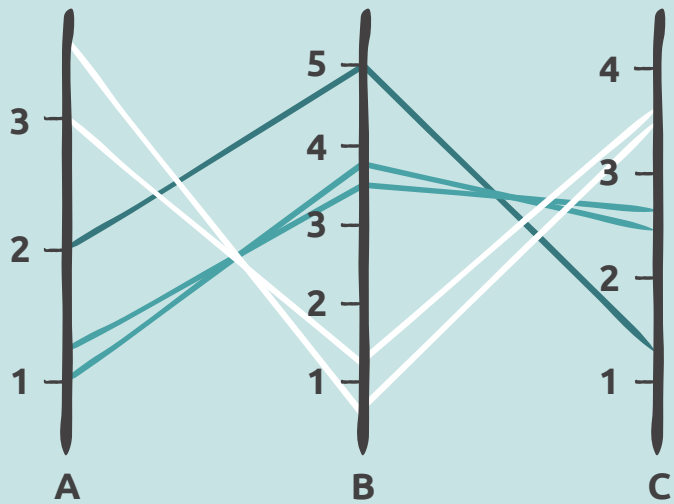
# Bubble Chart




## Categorical

Bubble Charts are a multivariable visualisation. Position and size differences of bubbles are used to compare and visualise relations.

# Parallel Coordinates Plot




= element (e.g. flower variety)

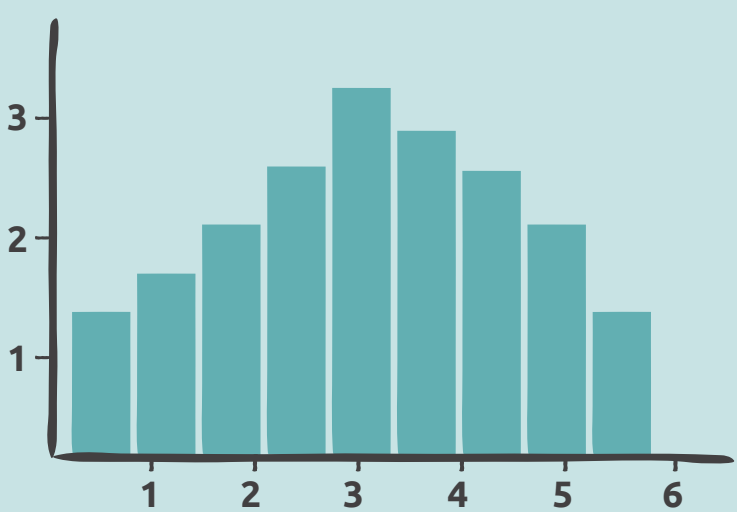
A, B, C = variable (e.g. size, width, length)

1, 2, 3, ... = value (measurand)

## Categorical

Parallel Coordinates Plots visualise multivariate quantitative data.
Result: variety white = largest flower, narrow leaf, longest stem.

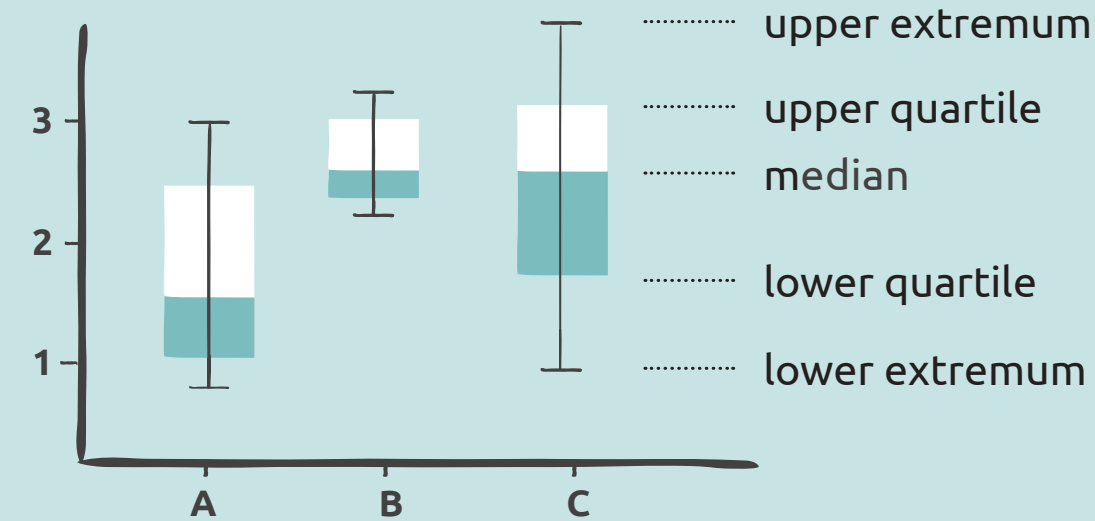
# Histogram




## Categorical

Histograms visualise distribution of data over a continuous interval or time span. The bars represent frequency in each interval.

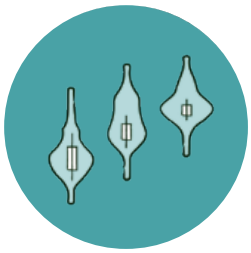
# Box Plot

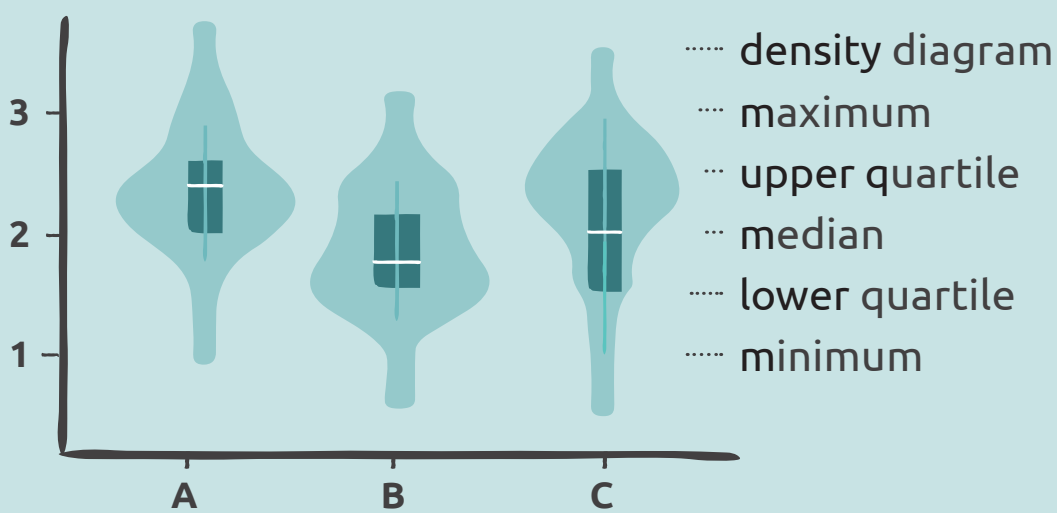



## Categorical

Box Plots are used to provide a quick overview of location and distribution of data.

# Violin Plot

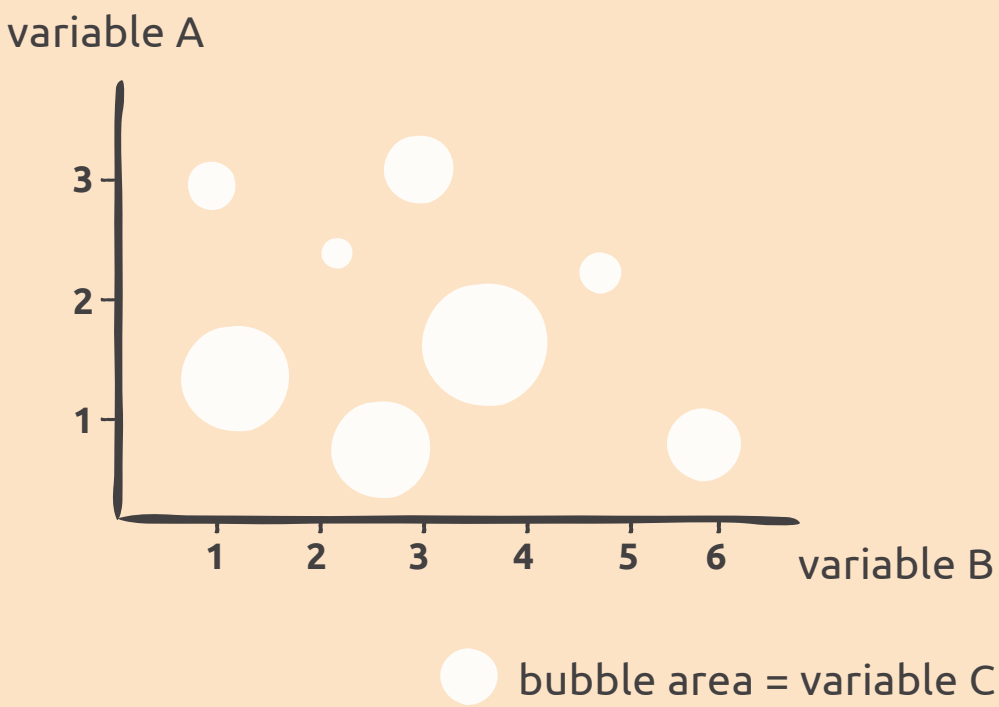





## Categorical

Violin Plots show distribution of data as well as their probability distribution.

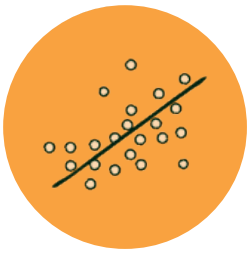
# Bubble Chart

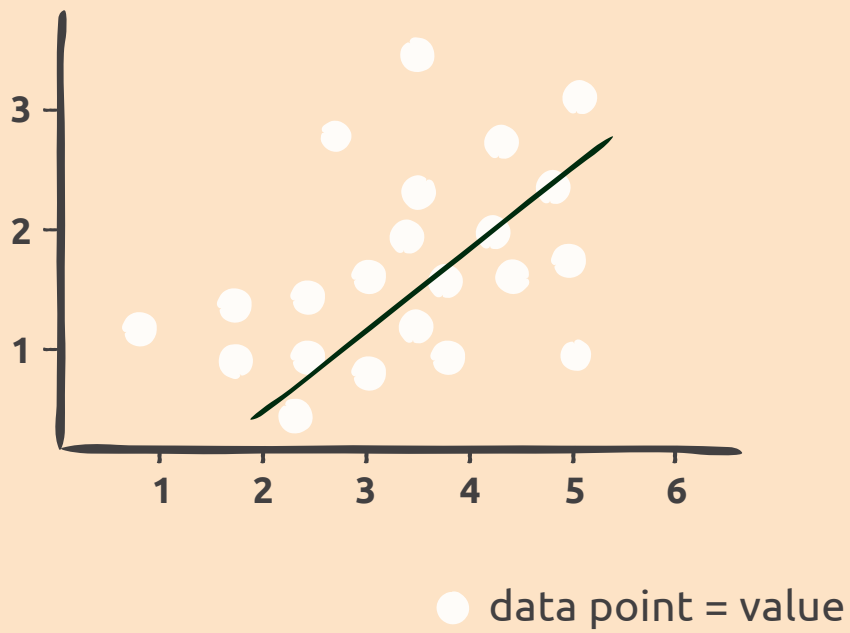



## Relational

Bubble Charts are a multivariable visualisations. Bubble position and size differences are used to compare and visualise relations.

# Scatterplot

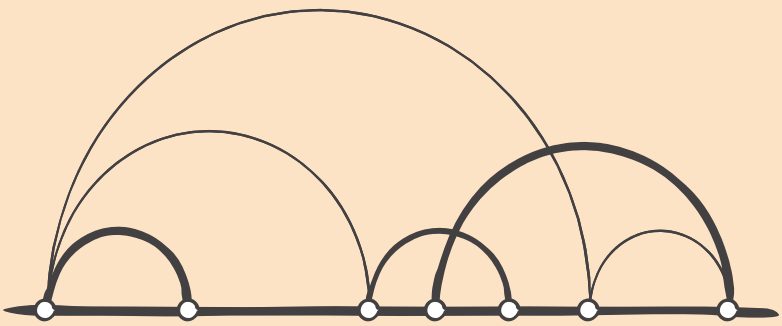


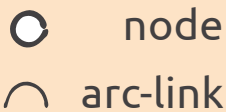



## Relational

Scatterplots show values of two variables for one data set. You can see correlation of two variables. The closer the points are, the stronger the correlation.

# Arc Diagram

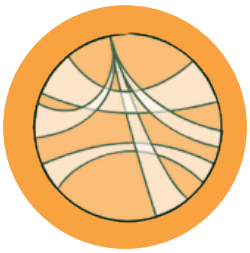


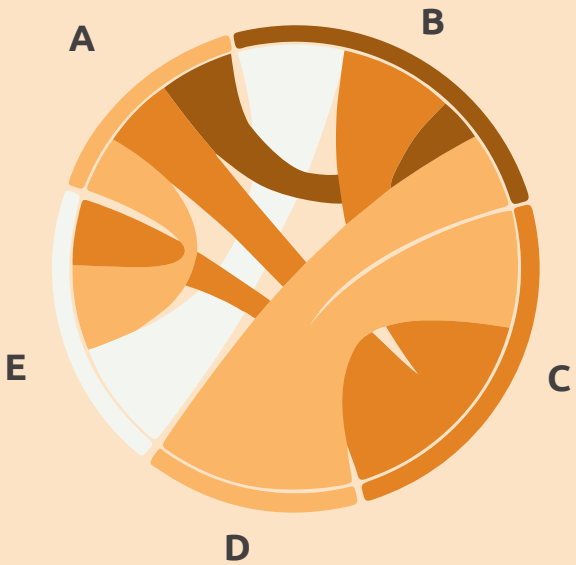



## Relational

Arc Diagrams visualise two dimensional networks. Arcs represent connections between nodes. Line thickness represents intensity of connections.

# Chord Diagram



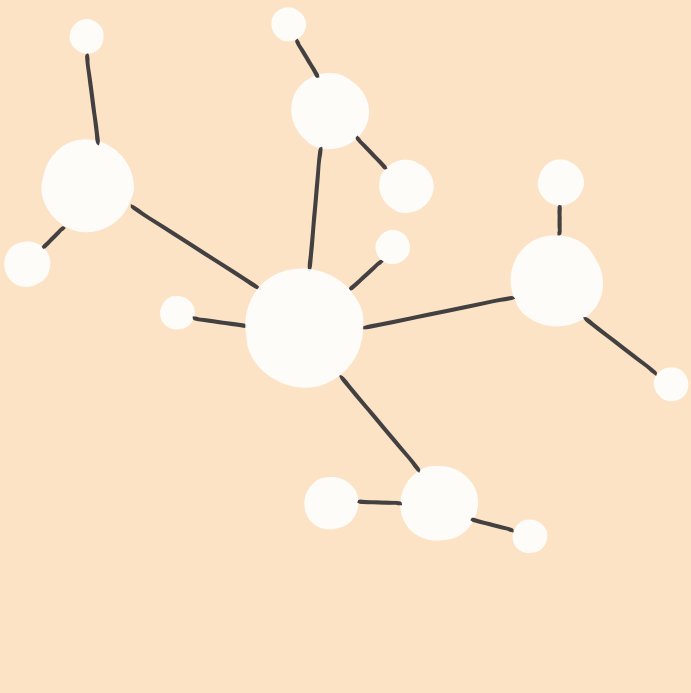





## Relational

Chord Diagrams visualise the similarities or connections of data groups. They are arranged radially around the circle. Thickness of connecting arcs represents significance.

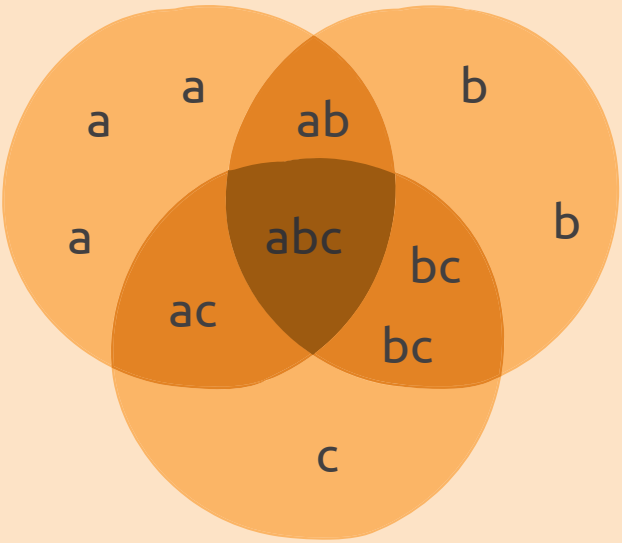
# Network Diagram




## Relational

Network Diagrams show complex relations within large sets of elements.

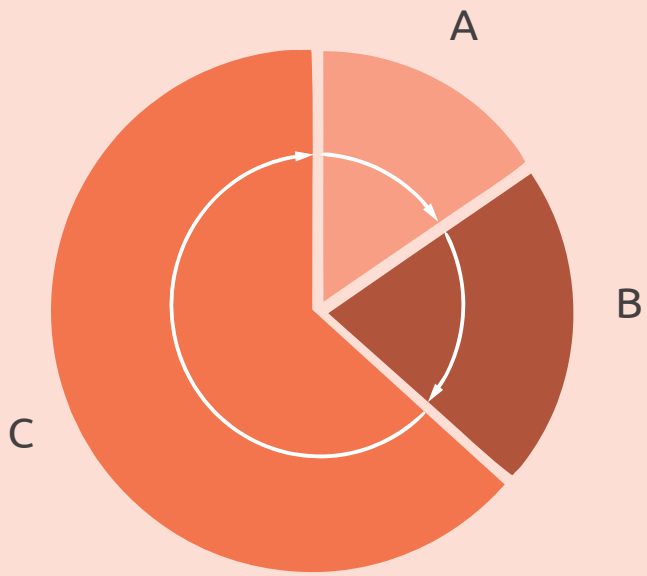
# Venn Diagram




## Relational

Venn Diagrams show logical similarities of data sets (ab, ac, bc, abc) assigned to data groups a, b, and c.

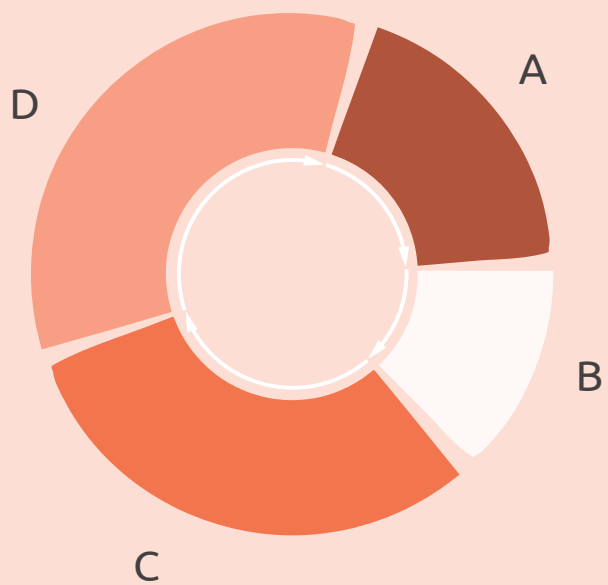
# Pie Chart




## Hierarchical

Pie Charts show proportions and percentage distribution of some categories. The arc or angle of circle segments is proportional to represented measured value.

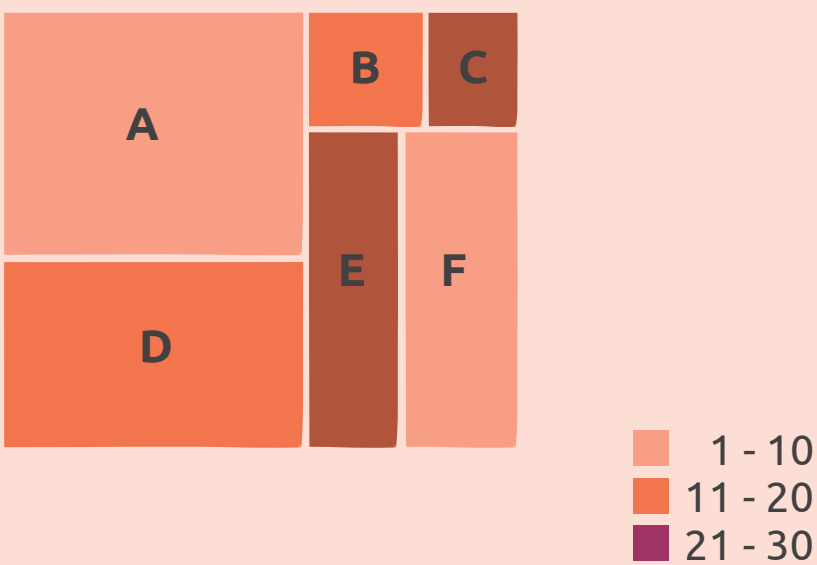
# Donut Chart




## Hierarchical

Donut Charts show proportions and percentage distribution of some categories. Length of circle segments is proportional to represented measured value.

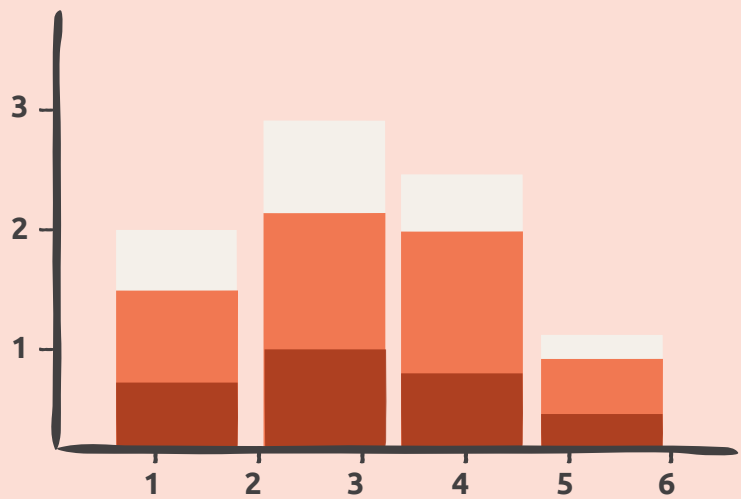
# Treemap




## Hierarchical

Treemaps visualise hierarchical data in tiled rectangles. Size of areas represents measured values.

# Stacked Bar Graph

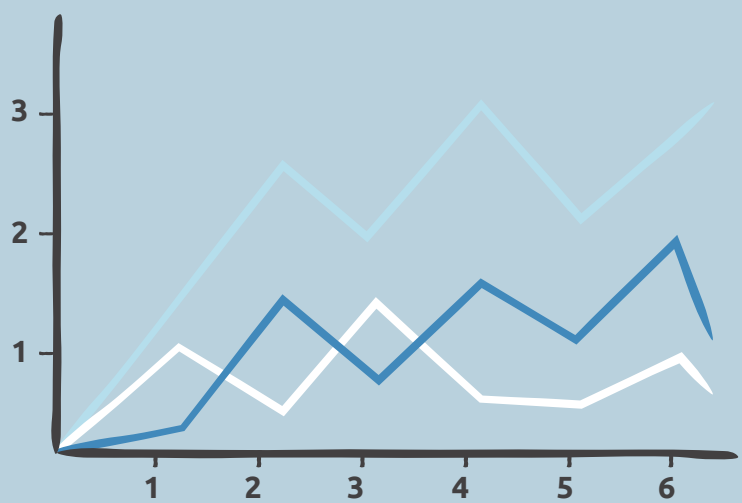



bar height = value

## Hierarchical

Stacked Bar Graphs stack values of categories on top of each other. Total values result from addition of category values. It also shows relationship of partial quantities to total quantity.

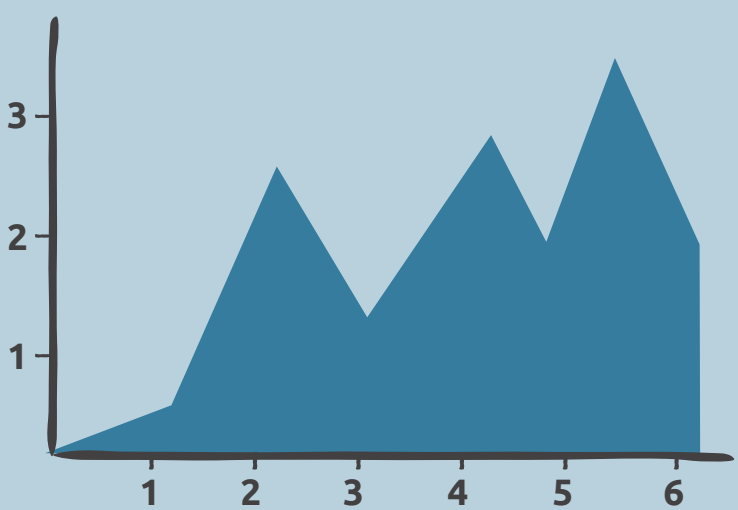
# Line Charts




## Temporal

Line Charts are used to display quantitative values over a period of time. They are used to show trends and analyse how data has changed over time.

# Area Graph




## Temporal

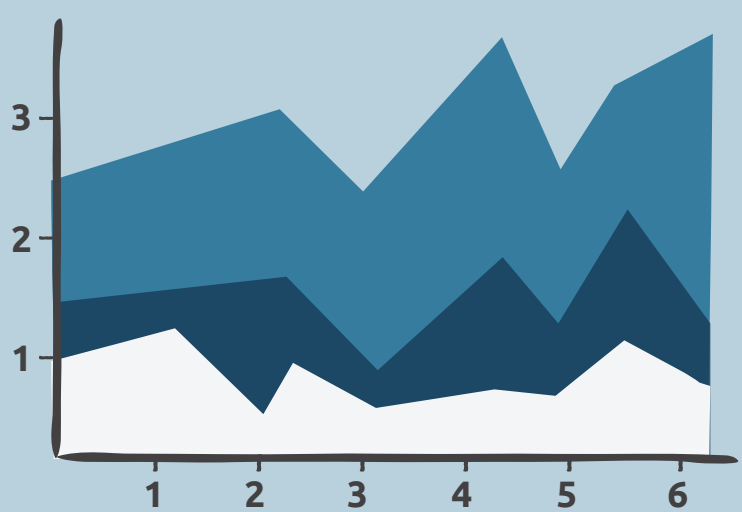
Area Graphs are used to show development of quantitative values over a period of time. It is used to show trends, not to convey specific values.

# Timeline


## Temporal

Timelines are a graphical method of displaying events in chronological order. Some timelines work with a scale, while others simply display events in sequence.

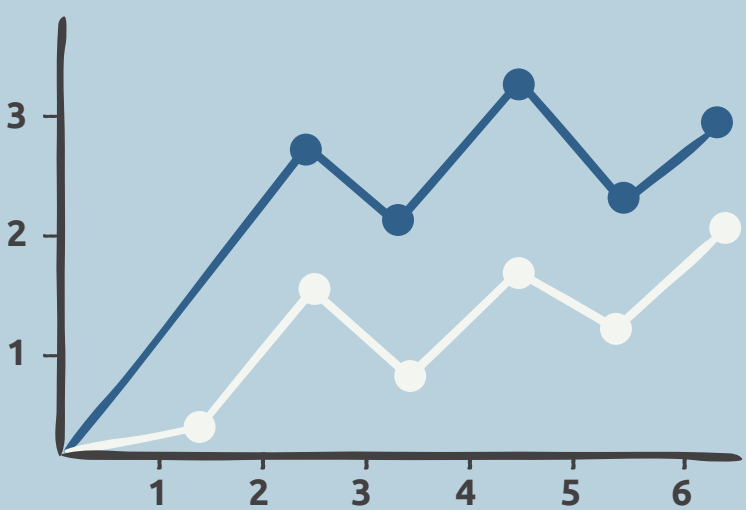
# Stacked Area Graph




## Temporal

Stacked Area Graphs work like simple area plots for multiple data series. Values are stacked on values of previous data series.

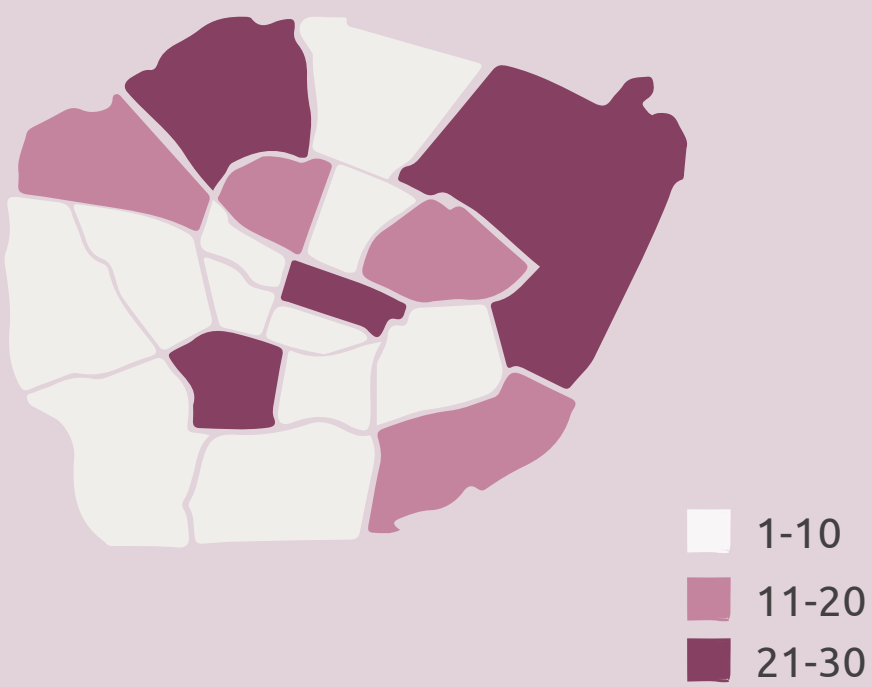
# Dot Line Chart




## Temporal

Dot Line Charts are used to show quantitative values over a period of time. They are used to show trends and analyse how data have changed over time.

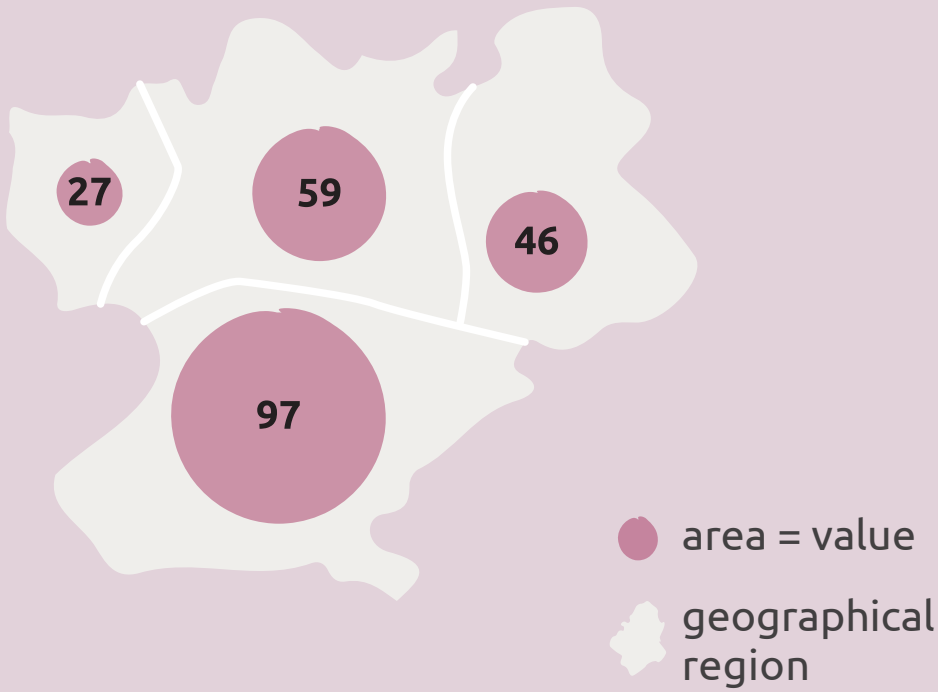
# Choropleth Map




## Spatial

Choropleth Maps visualise how measured values vary over a geographical area. Differences are represented by colour, shading or pattern.

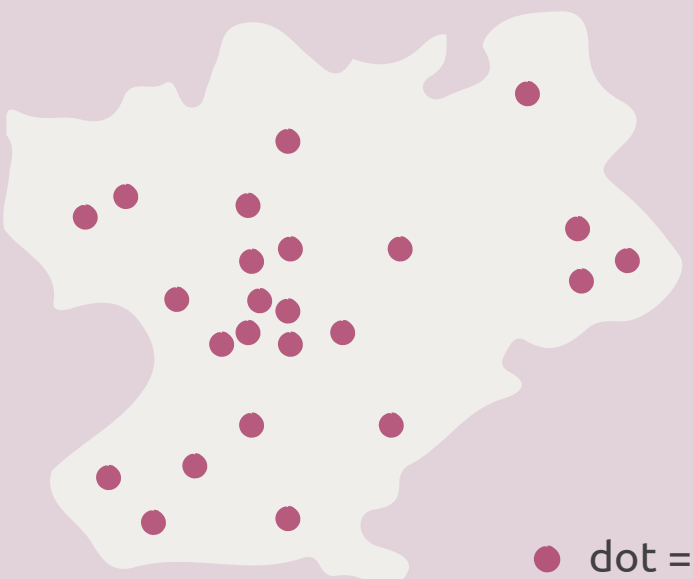
# Bubble Map




## Spatial

Bubble Maps are good for comparing measurement data over geographical regions. The size of circles should be in proportion to available space.

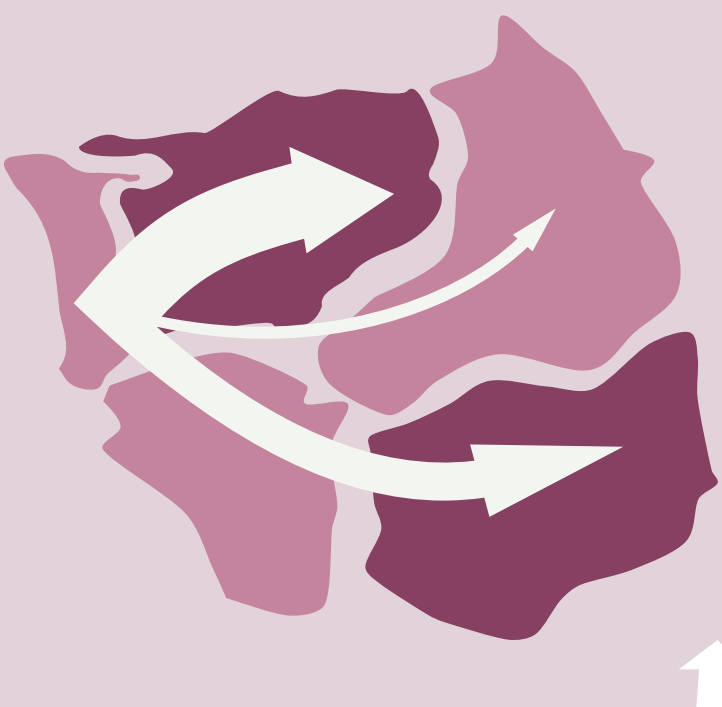
# Dot Map




## Spatial

Dot Maps show the spatial distribution of data. They are very suitable to give an overview, less to show exact measured values.

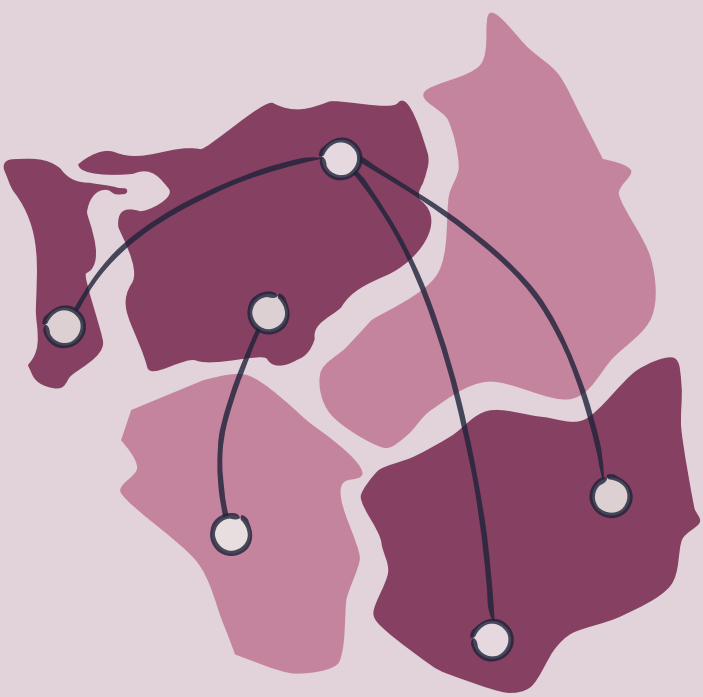
# Flow Map




## Spatial

Flow Maps show the flow of objects from one place or region to another. Amounts transferred are visualised by line thickness. Added arrows indicate direction.

# Connection Map

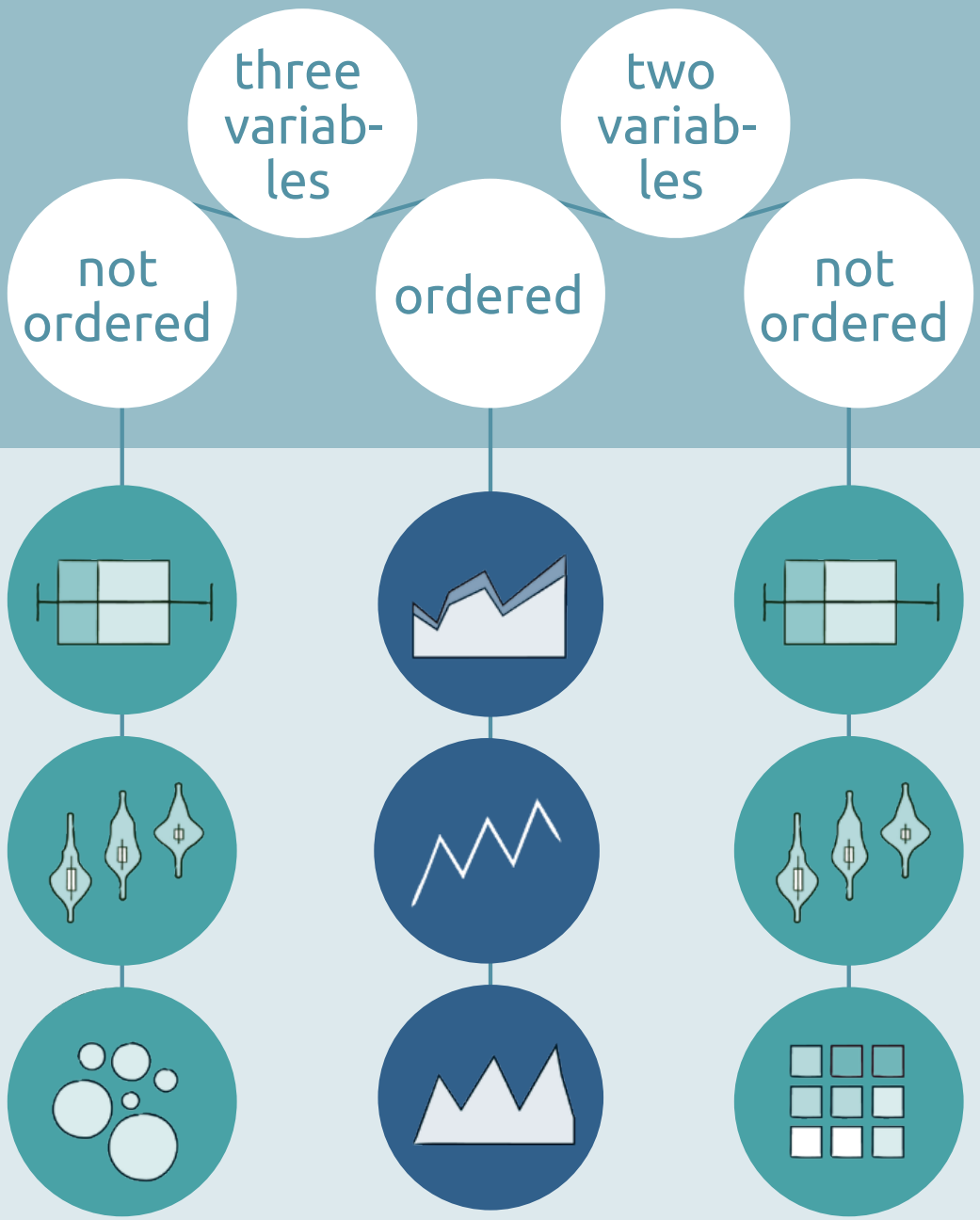


## Spatial

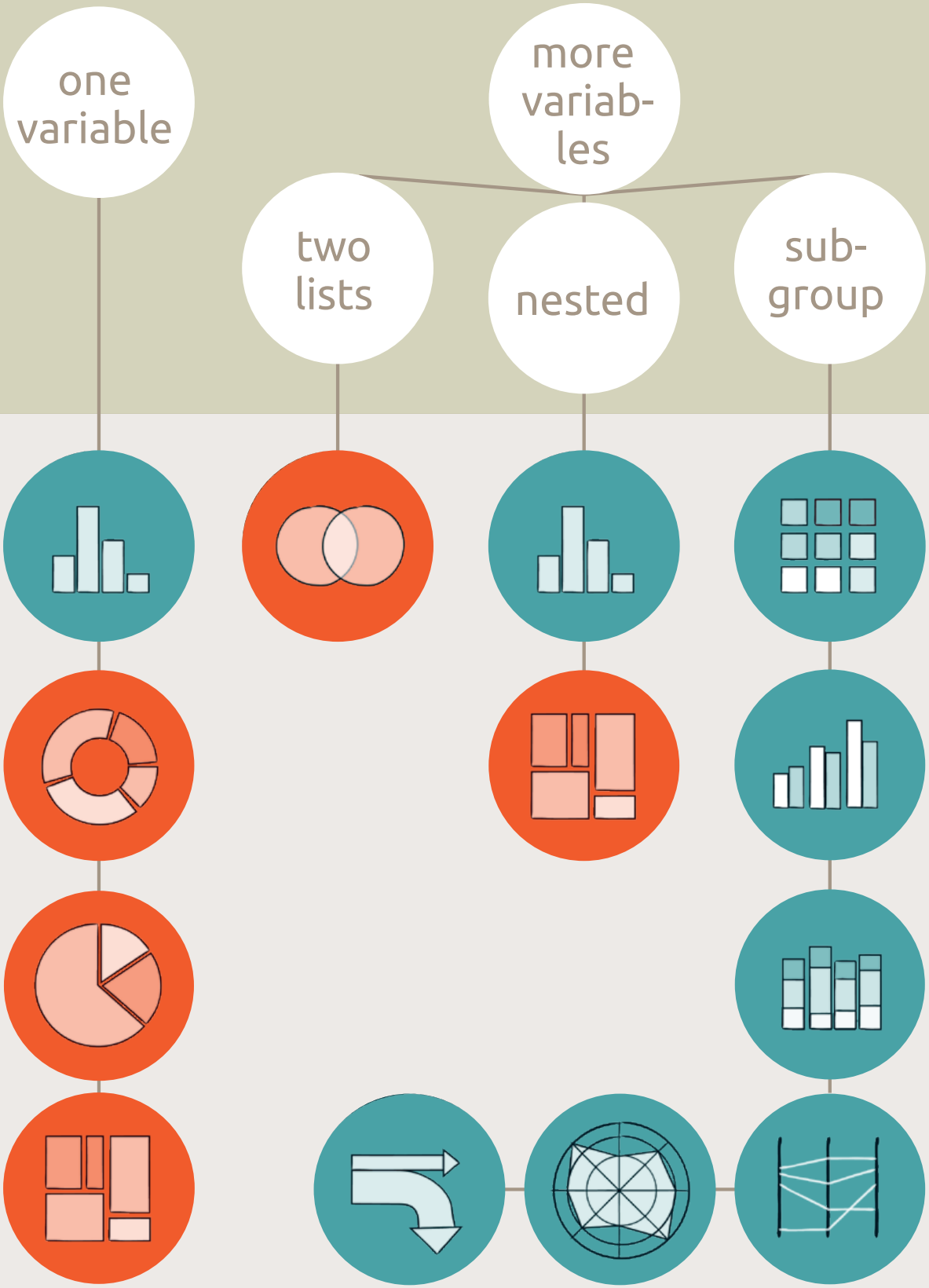
Connection Maps visualise geographical connections, routes and relationships. Distribution or concentration of connections shows spatial patterns.

# Numeric Data 01

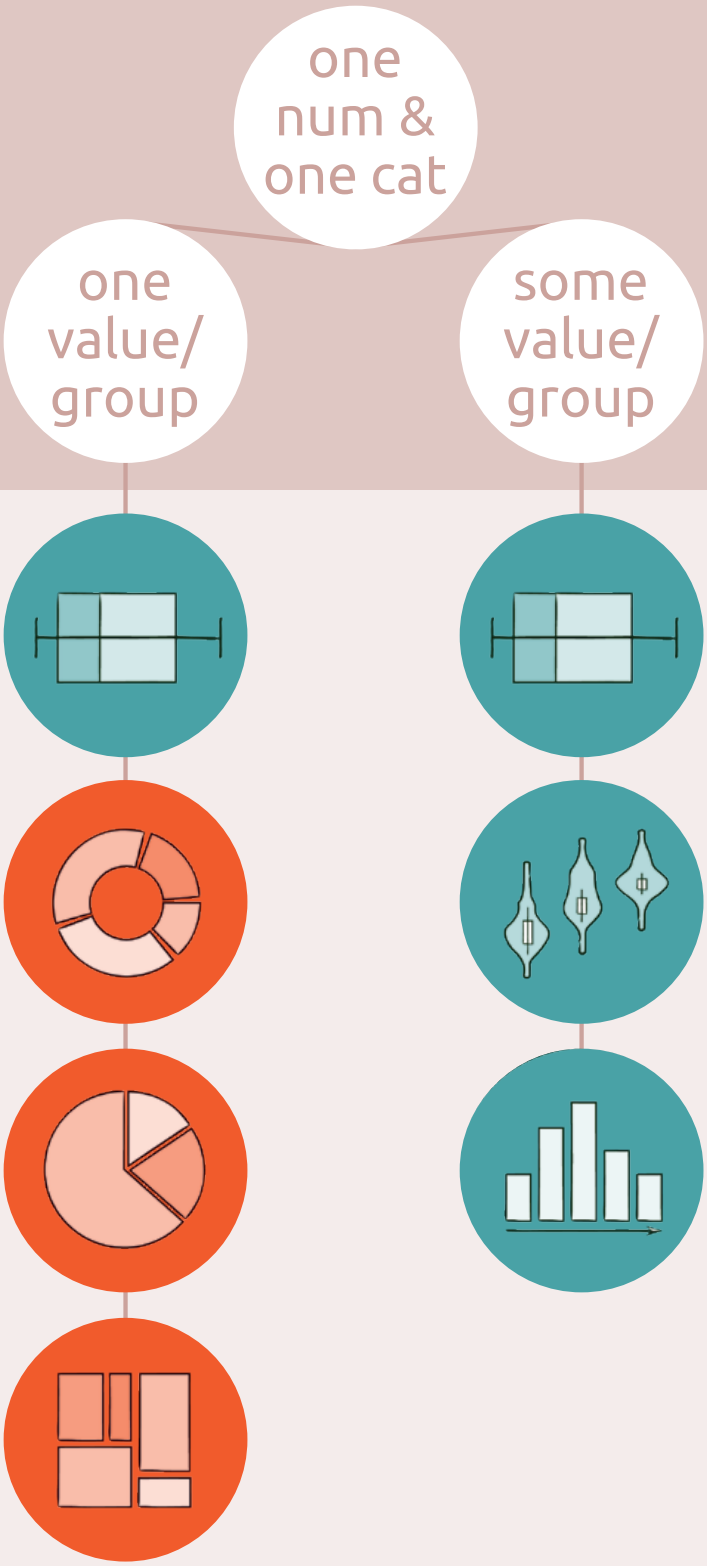
# Numeric Data 02



# Categoric Data



# Numeric & Categoric Data 01



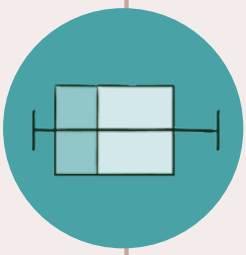
# Numeric & Categoric Data 02

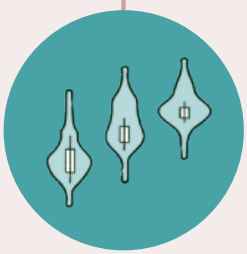
some num & one cat

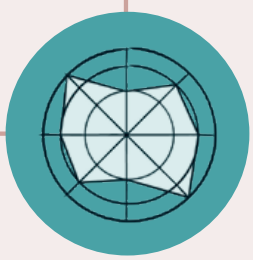
no order

one num is ordered

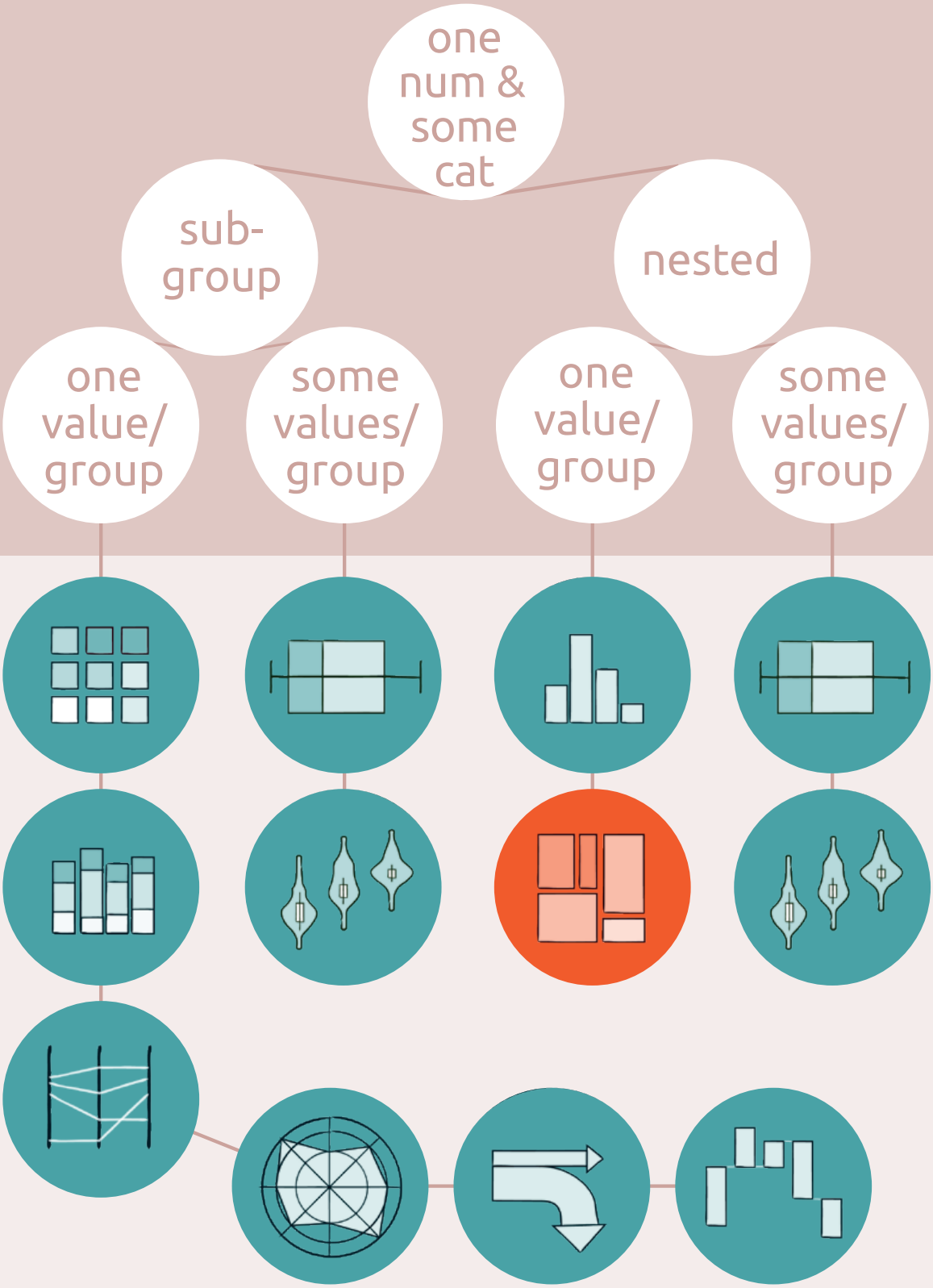
one value/ group



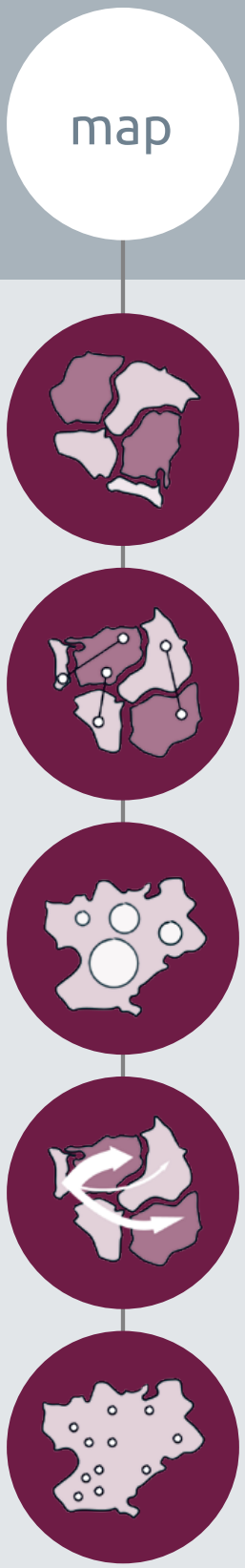




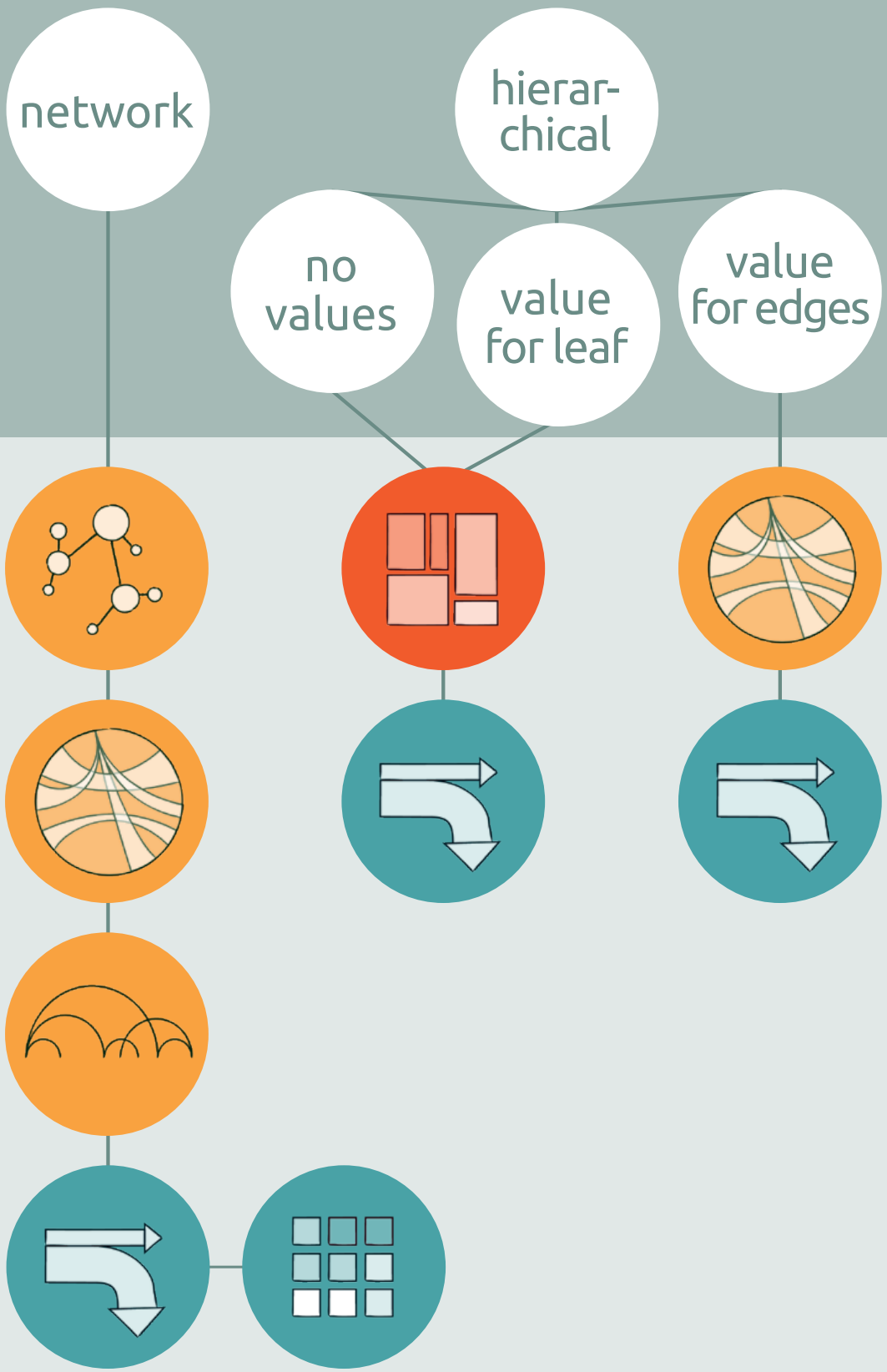
# Numeric & Categoric Data 03



# Map Data



# Network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values
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for edges

# Time Series