





# **Bar Charts**

Display data with rectangular bars representing the magnitude of the values they represent. The bars can be plotted vertically or horizontally.

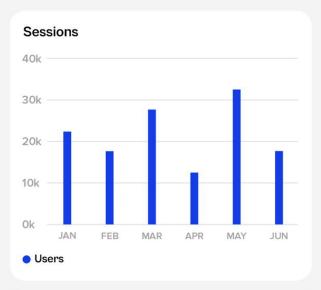
## **Advantages**

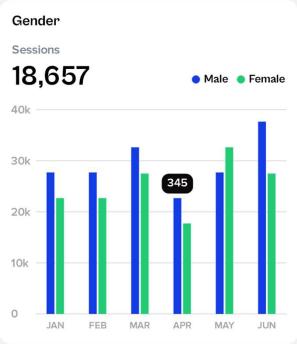
Clarity

Easily interpretable at a glance, making them effective for comparing discrete categories or groups.

Versatility

Suitable for displaying changes over time, comparisons among items, or part-to-whole relationships in a clear manner when categories are limited.







# **Line Graphs**

Plot data points connected by straight lines to show trends over a period.

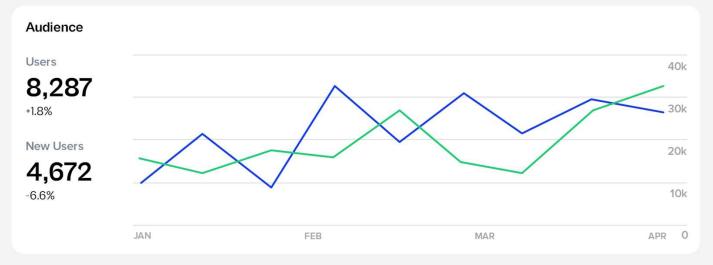
# **Advantages**

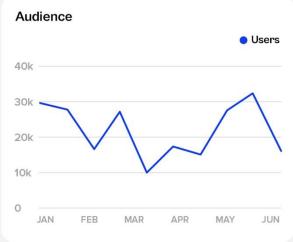
#### **Trend Visualisation**

Ideal for displaying data trends over time, allowing for the observation of patterns or changes.

#### **Comparative Analysis**

Can overlay multiple data sets for comparative analysis, making it easier to identify relationships between different series.







# Pie Charts

Circular charts divided into slices to illustrate numerical proportion.

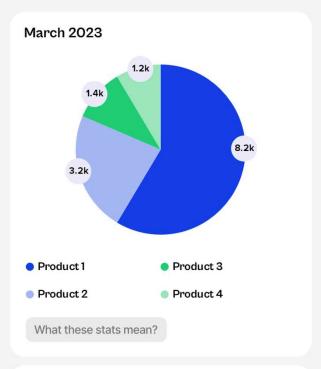
## **Advantages**

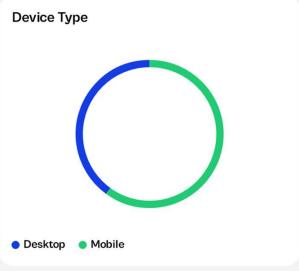
Proportion Display

Excellently visualises parts of a whole, making it straightforward to see the relative sizes of data categories.

Simplicity

Best used when the number of categories is small, ensuring the chart remains easy to read and interpret.







# **Scatter Plots**

Use Cartesian coordinates to display values for two variables for a set of data.

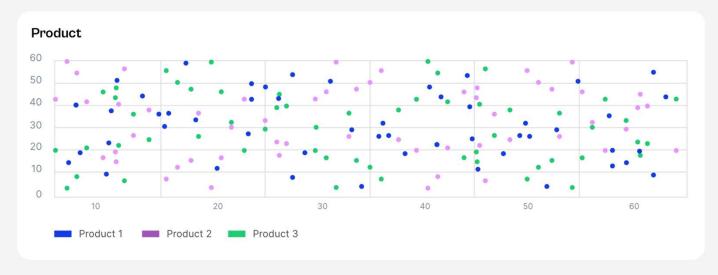
## **Advantages**

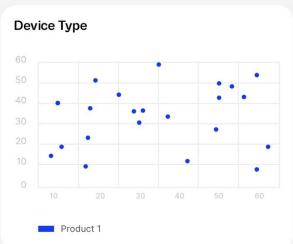
#### **Correlation Identification**

Effective for identifying the relationship or correlation between two variables.

#### **Outlier Detection**

Makes it easy to spot outliers and anomalies in the data, which can be critical for analysis.





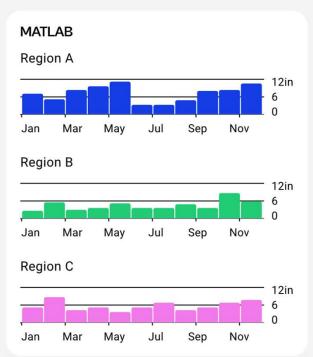


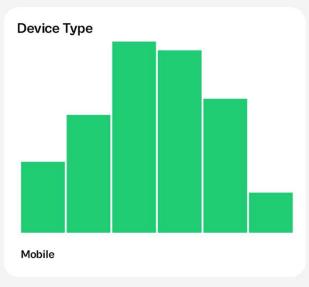
# Histograms

Similar to bar charts but are used specifically for showing the distribution of a dataset.

## **Advantages**

- Data Distribution Clarity
  Good for visualising the distribution of data, helping to understand the skewness, peak values, and variability.
- Comparison of Data Ranges
  Useful in comparing different ranges or bins of data, making it easier to see where most data points fall.







# **Heat Maps**

Use colours to represent data values in a two-dimensional matrix, showing the magnitude of a phenomenon as colour in two dimensions.

## **Advantages**

#### **Density Visualisation**

Ideal for showing variations across a data set through variations in colouring, making dense data easily digestible.

#### **Pattern Identification**

Effective in identifying patterns or trends in complex data sets, especially useful in geographical mapping and matrixed information.





# **Area Charts**

Similar to line charts but fill the area below the line with a solid colour or gradient to show volume.

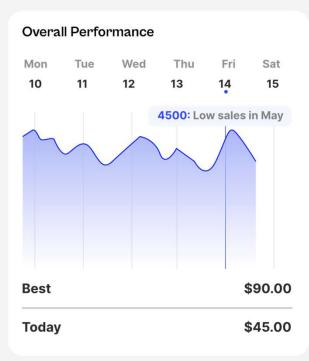
## **Advantages**

Volume Representation

Adds a visual depth to line graphs by showing the volume beneath the curve, making it suitable for demonstrating cumulative totals over time alongside trends.

Layering Capability

Can layer multiple data sets with transparency to compare different series effectively.







# **Bubble Charts**

Variation of scatter plots, where each data point is represented by a bubble, and the size of the bubble denotes a third dimension.

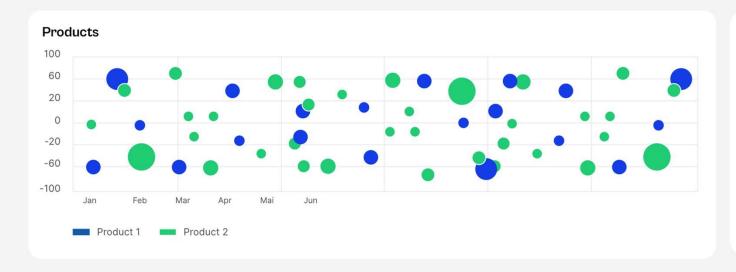
## **Advantages**

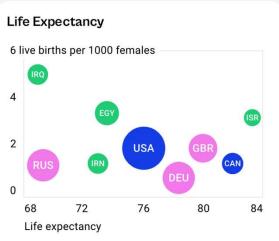
#### **Multi-dimensional Analysis**

Allows for the representation of three data dimensions, offering a more complex analysis of data sets.

#### **Interactive Potential**

Particularly effective in interactive visualisation where users can hover over bubbles to get more information.







# Treemap

Display hierarchical data as a set of nested rectangles, with each branch of the tree represented as a rectangle, which is then tiled with smaller rectangles representing subbranches.

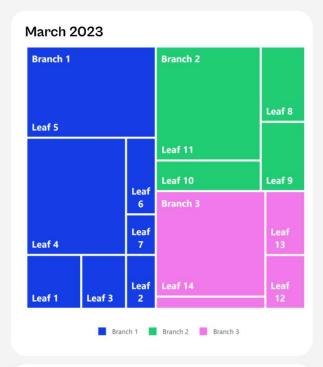
## **Advantages**

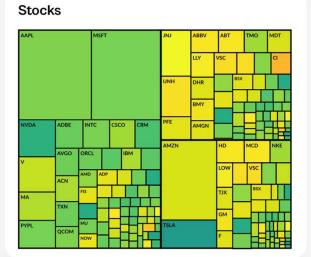
Efficient Space Use

Excellent for displaying hierarchies and part-to-whole relationships where traditional pie charts may become unreadable.

Comparative Analysis

Useful in comparing the sizes of categories and subcategories within a hierarchy.







# Radar Charts

Display multivariate data in the form of a two-dimensional chart of three or more quantitative variables represented on axes starting from the same point.

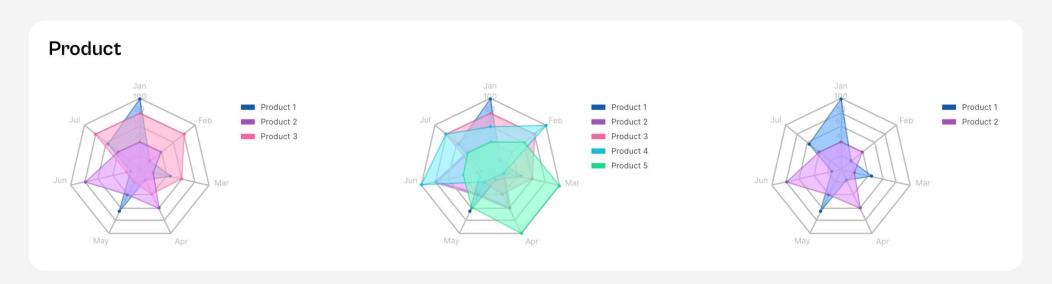
## **Advantages**

### **Multi-variable Comparison**

Ideal for comparing several items or observations over multiple characteristics.

## **Pattern Recognition**

Makes it easier to spot outliers and similarities between different data points based on shape patterns.





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