

# The Data Visualization Cheat Sheet

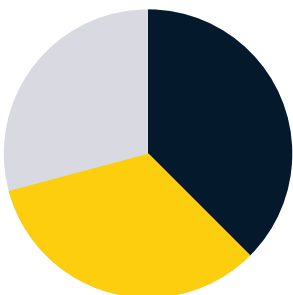
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## How to use this cheat sheet

Use this cheat sheet for inspiration when making your next data visualizations. For more data visualization cheat sheets, check out our cheat sheets repository [here](#).

### > Part-to-whole charts

Pie chart



One of the most common ways to show part to whole data. It is also commonly used with percentages

- USE CASES
- 1. Voting preference by age group
  - 2. Market share of cloud providers

Donut pie chart



The donut pie chart is a variant of the pie chart, the difference being it has a hole in the center for readability

- USE CASES
- 1. Android OS market share
  - 2. Monthly sales by channel

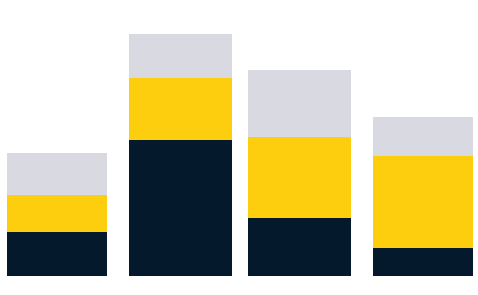
Heat maps



Heatmaps are two-dimensional charts that use color shading to represent data trends.

- USE CASES
- 1. Average monthly temperatures across the year
  - 2. Departments with the highest amount of attrition over time

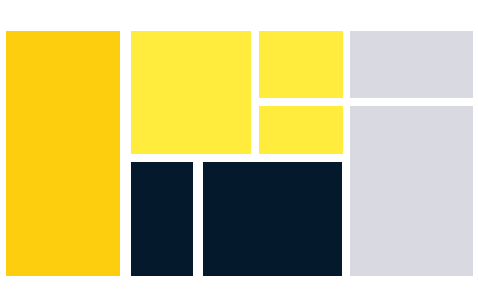
Stacked column chart



Best to compare subcategories within categorical data. Can also be used to compare percentages

- USE CASES
- 1. Quarterly sales per region
  - 2. Total car sales by producer

Treemap charts



2D rectangles whose size is proportional to the value being measured and can be used to display hierarchically structured data

- USE CASES
- 1. Grocery sales count with categories
  - 2. Stock price comparison by industry and company

### > Capture a trend

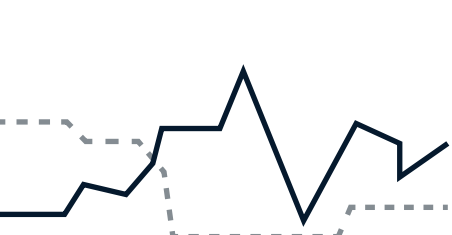
Line chart



The most straightforward way to capture how a numeric variable is changing over time

- USE CASES
- 1. Revenue in \$ over time
  - 2. Energy consumption in kWh over time
  - 3. Google searches over time

Multi-line chart



Captures multiple numeric variables over time. It can include multiple axes allowing comparison of different units and scale ranges

- USE CASES
- 1. Apple vs Amazon stocks over time
  - 2. Lebron vs Steph Curry searches over time
  - 3. Bitcoin vs Ethereum price over time

Area chart



Shows how a numeric value progresses by shading the area between line and the x-axis

- USE CASES
- 1. Total sales over time
  - 2. Active users over time

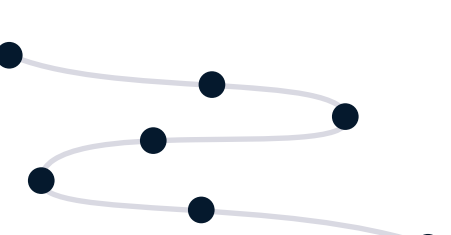
Stacked area chart



Most commonly used variation of area charts, the best use is to track the breakdown of a numeric value by subgroups

- USE CASES
- 1. Active users over time by segment
  - 2. Total revenue over time by country

Spline chart

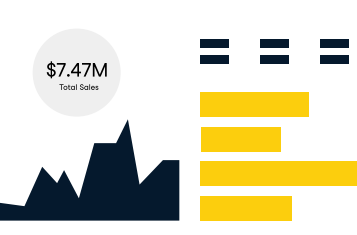


Smoothened version of a line chart. It differs in that data points are connected with smoothed curves to account for missing values, as opposed to straight lines

- USE CASES
- 1. Electricity consumption over time
  - 2. CO2 emissions over time

### > Visualize a single value

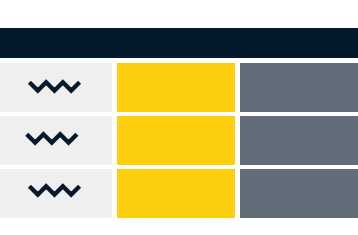
Card



Cards are great for showing and tracking KPIs in dashboards or presentations

- USE CASES
- 1. Revenue to date on a sales dashboard
  - 2. Total sign-ups after a promotion

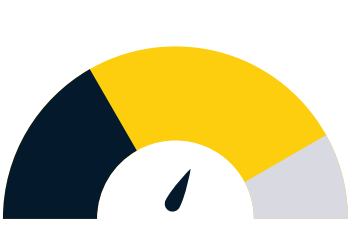
Table chart



Best to be used on small datasets, it displays tabular data in a table

- USE CASES
- 1. Account executive leaderboards
  - 2. Registrations per webinar

Gauge chart

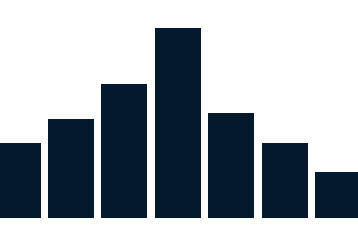


This chart is often used in executive dashboard reports to show relevant KPIs

- USE CASES
- 1. NPS scores
  - 2. Revenue to target

### > Capture distributions

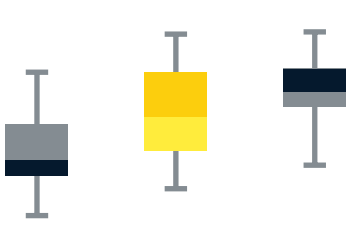
Histogram



Shows the distribution of a variable. It converts numerical data into bins as columns. The x-axis shows the range, and the y-axis represents the frequency

- USE CASES
- 1. Distribution of salaries in an organization
  - 2. Distribution of height in one cohort

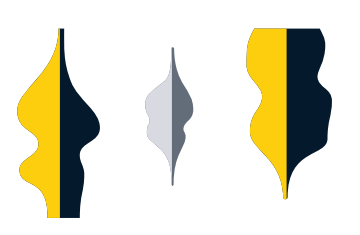
Box plot



Shows the distribution of a variable using 5 key summary statistics—minimum, first quartile, median, third quartile, and maximum

- USE CASES
- 1. Gas efficiency of vehicles
  - 2. Time spent reading across readers

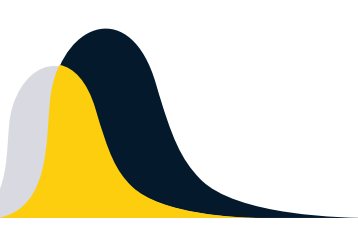
Violin plot



A variation of the box plot. It also shows the full distribution of the data alongside summary statistics

- USE CASES
- 1. Time spent in restaurants across age groups
  - 2. Length of pill effects by dose

Density plot



Visualizes a distribution by using smoothing to allow smoother distributions and better capture the distribution shape of the data

- USE CASES
- 1. Distribution of price of hotel listings
  - 2. Comparing NPS scores by customer segment

### > Visualize relationships

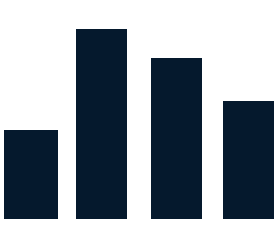
Bar chart



One of the easiest charts to read which helps in quick comparison of categorical data. One axis contains categories and the other axis represents values

- USE CASES
- 1. Volume of google searches by region
  - 2. Market share in revenue by product

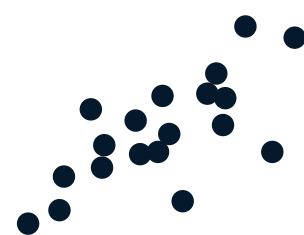
Column chart



Also known as a vertical bar chart, where the categories are placed on the x-axis. These are preferred over bar charts for short labels, date ranges, or negatives in values

- USE CASES
- 1. Brand market share
  - 2. Profit Analysis by region

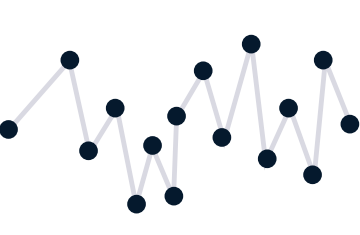
Scatter plot



Most commonly used chart when observing the relationship between two variables. It is especially useful for quickly surfacing potential correlations between data points

- USE CASES
- 1. Display the relationship between time-on-platform and churn
  - 2. Display the relationship between salary and years spent at company

Connected scatterplot



A hybrid between a scatter plot and a line plot, the scatter dots are connected with a line

- USE CASES
- 1. Cryptocurrency price index
  - 2. Visualizing timelines and events when analyzing two variables

Bubble chart



Often used to visualize data points with 3 dimensions, namely visualized on the x-axis, y-axis, and with the size of the bubble. It tries to show relations between data points using location and size

- USE CASES
- 1. Adwords analysis: CPC vs Conversions vs Share of total conversions
  - 2. Relationship between life expectancy, GDP per capita, & population size

Word cloud chart



A convenient visualization for visualizing the most prevalent words that appear in a text

- USE CASES
- 1. Top 100 used words by customers in customer service tickets

### > Visualize a flow

Sankey chart



Useful for representing flows in systems. This flow can be any measurable quantity

- USE CASES
- 1. Energy flow between countries
  - 2. Supply chain volumes between warehouses

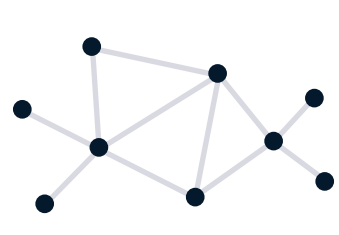
Chord chart



Useful for presenting weighted relationships or flows between nodes. Especially useful for highlighting the dominant or important flows

- USE CASES
- 1. Export between countries to showcase biggest export partners
  - 2. Supply chain volumes between the largest warehouses

Network chart



Similar to a graph, it consists of nodes and interconnected edges. It illustrates how different items have relationships with each other

- USE CASES
- 1. How different airports are connected worldwide
  - 2. Social media friend group analysis

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