TD&T TanDuc ITS

Data Visualization Cheat Sheet

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Visualize Relationships

BAR CHART

It is useful to display the absolute data that include negative values. 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

It is used to show the relationship between two different variables by using the dots that represent the values obtained from two different variables

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 CHARTS

Bubble charts show the data in the form of a circle. The values of the variables are represented by the x-axis and y-axis. The size of the circle represents the measure of the variables

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

WORLD CLOUD CHART

A convenient visualization for visualizing the most prevalent words that appear in a text. This can be used to visualize the relationship between different words that appear together or capture a trend on the most commonly prevalent words

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

Capture a Trend

LINE CHART

The most explicit way to capture the trends over a period of 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 the trend changes over time and can be used to attract the attention of the audiences to know the total changes across the trends

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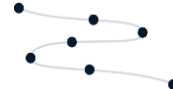2. Active users over time

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 smooth curves to account for missing values, as opposed to straight lines

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

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

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
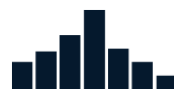2. Supply chain volumes between the largest warehouses

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

Capture Distributions

HISTOGRAMS

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
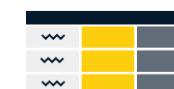
Visualize a Single Value

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