



PLURALSIGHT

# M&T Bank Data Academy

Week 8



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# INTRODUCTION TO DATA VISUALIZATION AND STORYTELLING

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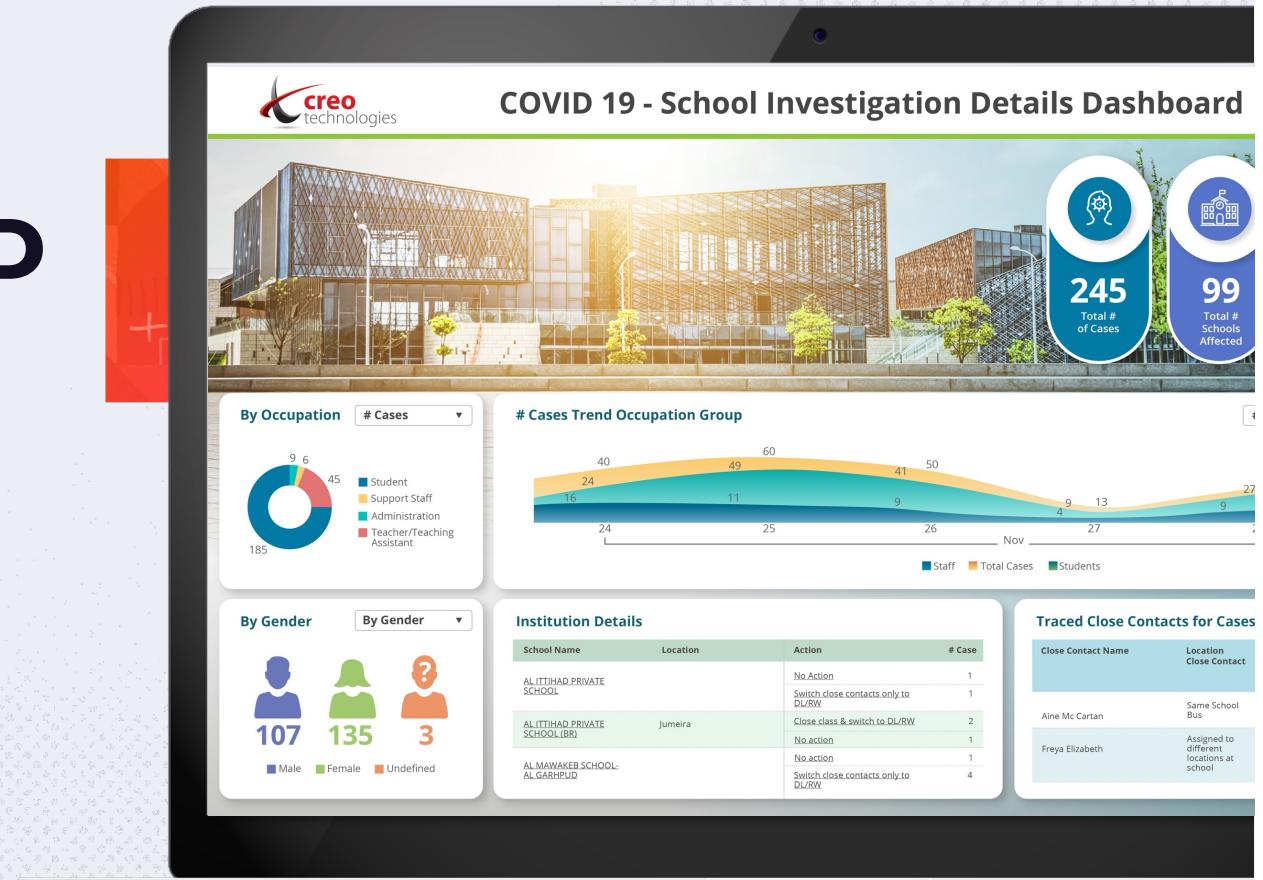
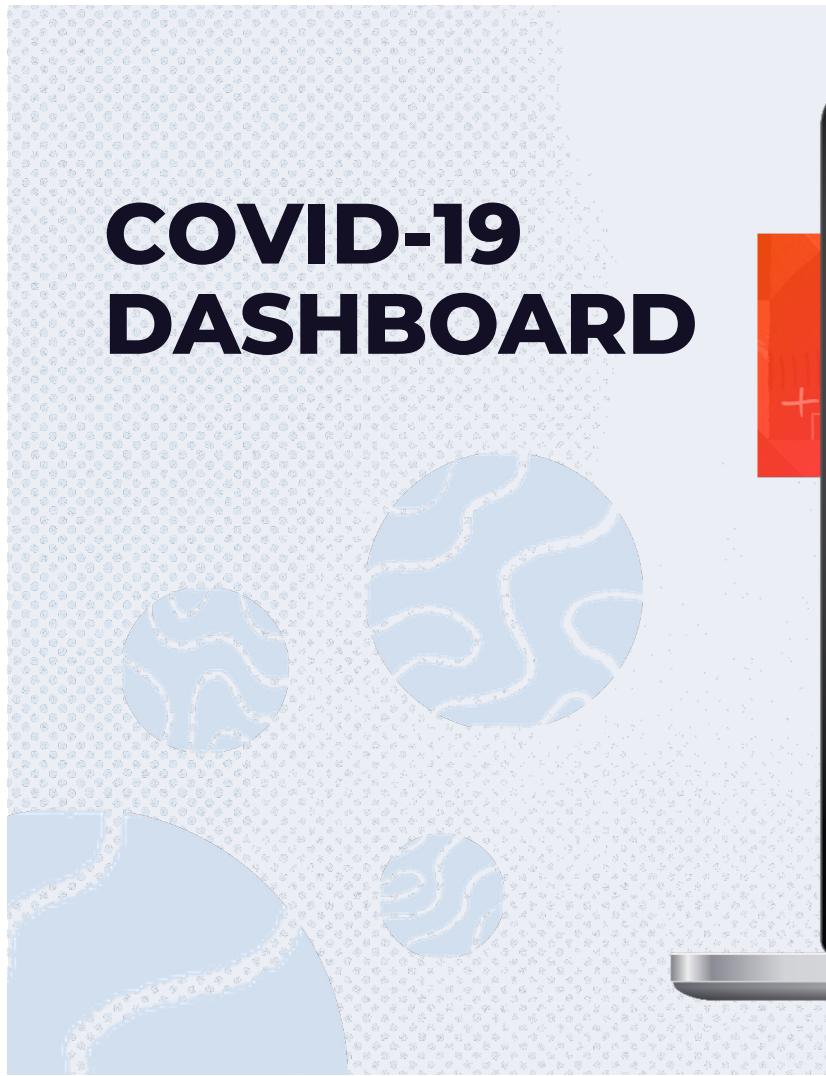


# PROJECT PORTFOLIO MANAGEMENT



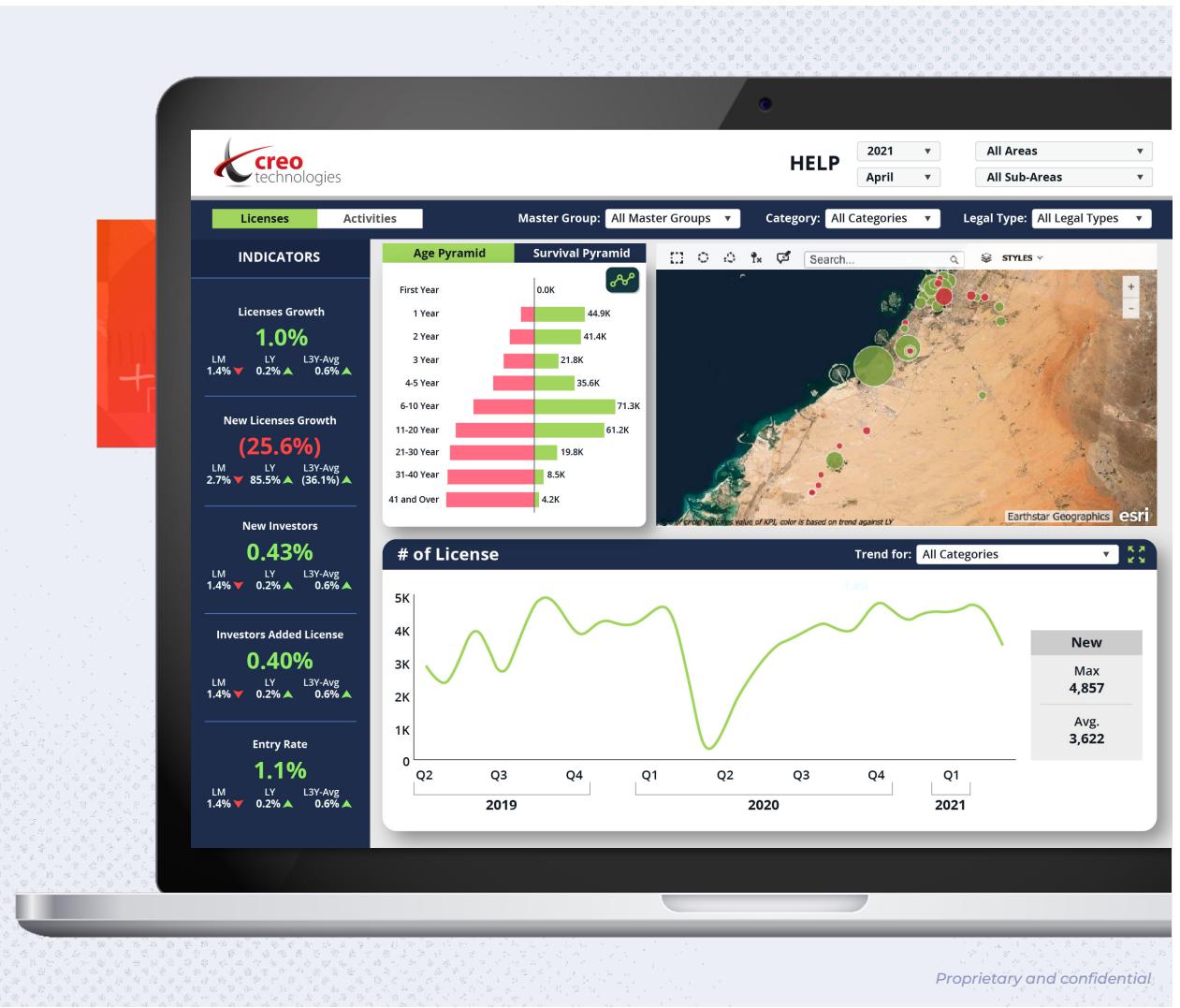
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# COVID-19 DASHBOARD

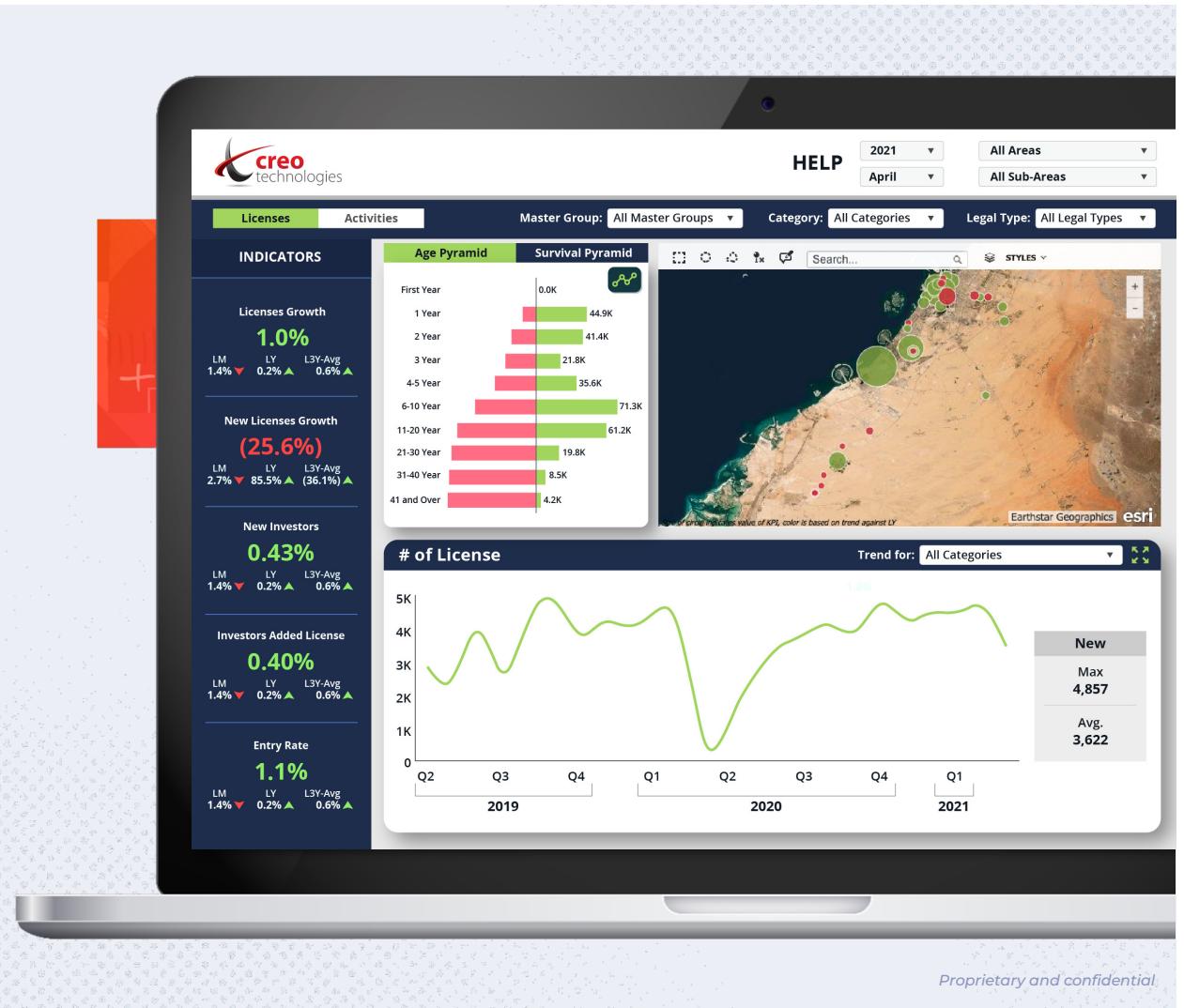


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# SALES



# SALES



“

Data storytelling is the art of **presenting** complex data and analytics in a compelling narrative that helps **tell a story** and **influence** and **inform** a particular audience

Microsoft

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# DATA STORYTELLING

- A powerful tool for conveying complex information in a way that is easily digestible and can greatly benefit businesses in their marketing campaigns, as it helps target audiences grasp the information being presented
- Data storytelling involves using data to craft a compelling narrative, often employing mediums like **infographics**, data **visualizations**, **interactive** maps, and feature insights.

# IMPORTANCE IN A BUSINESS CONTEXT

## Facilitates Informed Decision-Making

- Understand the “**Why**” behind the data
- **Data-Driven Insights:** Transforms raw data into actionable insights that guide strategic decisions

## Enhance Communication

- **Bridging the Gap:** Translates complex data into a format that is easily understandable, bridging the gap between data experts and non-experts.
- **Engagement:** Stories are inherently engaging, making the conveyed data more compelling and memorable.

# IMPORTANCE IN A BUSINESS CONTEXT

## Drive Organizational Alignment

- **Unified Understanding:** Ensures that all stakeholders, regardless of their technical expertise, have a unified understanding of key data points and insights.
- **Strategic Alignment:** Helps in aligning various departments towards common organizational goals and objectives by providing a clear picture of the data.

## Enhance Data Accessibility

- **Democratizing Data:** Makes data accessible and comprehensible to all, fostering a data-driven culture within the organization.
- **Encouraging Participation & Collaboration:** Enables more employees to participate in data-driven dialogues and decision-making processes.

# IMPORTANCE IN A BUSINESS CONTEXT

## Increasing the memorability and persuasiveness of data insights

- Effective data storytelling increases the memorability, persuasiveness, and engagement of data insights
- **Standardizing** communication of data: Data storytelling can be a way to standardize the communication of data, ensuring that it can reach as broad an audience as possible

# Storytelling with Data

**1.Understand the context:** Before creating a data story, it is essential to understand the context of the data, including the audience, the purpose of the story, and the message that needs to be conveyed

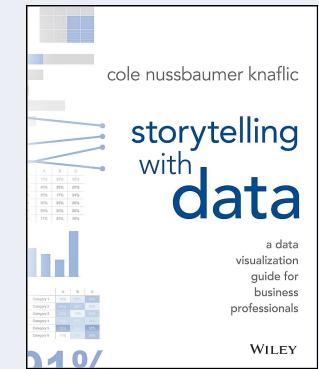
**2.Choose an effective visual display:** Selecting the right visual display is crucial to ensure that the data is presented in a clear and understandable way. The choice of visual display should be based on the type of data and the message that needs to be conveyed

**3.Eliminate clutter:** Clutter can distract the audience from the message and make the data story difficult to understand. It is essential to eliminate unnecessary elements and simplify the visual display to ensure that the message is clear

**4.Direct the audience's attention:** Highlighting the most important parts of the data and directing the audience's attention to them is crucial to ensure that the message is understood. This can be achieved through the use of color, size, and other visual cues

**5.Think like a designer:** Design thinking involves considering the audience's needs and preferences when creating a data story. It is essential to create a story that is visually appealing, easy to understand, and engaging

**6.Leverage the power of storytelling:** Storytelling is a powerful tool that can help make data more relatable and memorable. By incorporating a narrative into the data story, it is possible to create a more engaging and impactful message



# FOUNDATIONS OF DATA VISUALIZATION

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# Introduction to Data Visualization

Data Visualization refers to the graphical representation of information and data. By using visual elements like charts, graphs, and maps, data visualization tools provide an accessible way to see and understand trends, outliers, and patterns in data.

# Key Components

## 1. Elements of Visualization:

- **Charts and Graphs:** Bar, line, pie, scatter plots, etc.
- **Maps:** Geographical data representation.
- **Tables:** Grids of text or numbers.
- **Infographics:** Visual representations of information.
- **Dashboards:** Consolidated visualizations for data monitoring and analysis

## 2. Data:

- **Quantitative:** Numerical data.
- **Categorical:** Descriptive data.
- **Temporal:** Time-related data.
- **Spatial:** Location-related data.

# Key Components

## 3. Design Principles:

- **Clarity:** Clear and unambiguous visuals.
- **Accuracy:** Precise representation of data.
- **Efficiency:** Quick and easy comprehension of data.
- **Aesthetics:** Visually pleasing and engaging.

## 4. Tools and Technologies:

- **Software:** Tableau, Power BI, Excel, etc.
- **Programming Languages:** Python (with libraries like Matplotlib, Seaborn), R, etc.

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The importance of data visualization is evident in the "age of Big Data," where it helps make sense of the trillions of rows of data generated every day

Someone Said So

# Dashboards

A dashboard is a **visual interface** that provides a **consolidated, interactive** view of various data points, metrics, and key performance indicators (**KPIs**), typically designed to enable quick analysis and decision-making.

# Key Components/Considerations of a Dashboard

## 1. Visual Elements:

- **Charts/Graphs:** Visual representations of data (e.g., bar, line, pie charts).
- **Gauges:** Indicators to show performance against predefined metrics.
- **Maps:** Geographical representations of spatial data.
- **Tables:** Organized grids of numerical and textual data.

## 2. Interactivity:

- **Filters:** Allow users to refine and focus on specific data subsets.
- **Drill-Downs:** Enable users to explore deeper layers of data.
- **Hover Tools:** Provide additional information when hovering over data points.

# Key Components/Considerations of a Dashboard

## 3. Data Integration:

- **Real-Time Data:** Live data feeds that update visualizations in real-time.
- **Historical Data:** Past data to analyze trends over time.

## 4. Layout and Design:

- **User-Friendly:** Intuitive and easy to navigate.
- **Aesthetically Pleasing:** Visually appealing and professional-looking.
- **Responsive:** Adapts to various screen sizes and devices.

# Role of a Dashboard

## 1. Decision Support Tool:

- Aids leaders and decision-makers by providing actionable insights.
- Supports strategic planning and operational adjustments.

## 2. Communication Medium:

- Communicates the status, health, and performance of various aspects to all relevant stakeholders.
- Ensures transparency and clarity across the organization.

## 3. Operational Monitoring:

- Monitors operational processes and workflows.
- Helps in optimizing and streamlining operations

# Role of a Dashboard

## 4. Strategic Management:

- Assists in tracking the progress towards strategic objectives and goals.
- Provides a visual representation of performance against set benchmarks.

## 5. Collaboration Facilitator:

- Serves as a common platform for various departments to align and collaborate.
- Ensures consistency in data and metrics viewed by different teams.

# Types of Dashboards

- Operational Dashboards
- Analytical Dashboards
- Strategic Dashboards
- Tactical Dashboards
- Executive Dashboards
- Performance Dashboards
- Self-Service Dashboards

# Types of Dashboards

## Operational Dashboards

- **Purpose:** Monitor real-time operations and activities.
- **Characteristics:**
  - High data refresh rates to provide real-time or near-real-time insights.
  - Often contain gauges, dials, or other real-time data visualizations.
- **Use-Cases:**
  - Tracking call center metrics.
  - Monitoring network performance.

# Types of Dashboards

## Analytical Dashboards

- **Purpose:** Analyze data to identify trends, insights, and inform strategic decision-making.
- **Characteristics:**
  - Typically interact with large data volumes and allow for data exploration.
  - May include capabilities for users to perform ad-hoc analysis.
- **Use-Cases:**
  - Analyzing sales trends over time.
  - Evaluating marketing campaign effectiveness.

# Types of Dashboards

## Strategic Dashboards

- **Purpose:** Monitor performance metrics and KPIs against strategic objectives and goals.
- **Characteristics:**
  - Often include high-level KPIs and metrics with the ability to drill down.
  - May provide long-term data and trends.
- **Use-Cases:**
  - Tracking organizational performance against strategic goals.
  - Monitoring departmental KPIs.

# Types of Dashboards

## Tactical Dashboards

- **Purpose:** Track departmental processes and operations and inform tactical decision-making.
- **Characteristics:**
  - Focus on mid-level operations and departmental data.
  - May include more detailed data than strategic dashboards but less than operational dashboards.
- **Use-Cases:**
  - Monitoring monthly departmental expenses.
  - Tracking project progress.

# Types of Dashboards

## Executive Dashboards

- **Purpose:** Provide executives and leaders with a quick overview of critical metrics and KPIs.
- **Characteristics:**
  - High-level view with the ability to drill down into more detailed data.
  - Simplified and clear visualizations to convey key insights quickly.
- **Use-Cases:**
  - Monitoring overall organizational health and performance.
  - Tracking high-level financial metrics.

# Types of Dashboards

## Self-Service Dashboards

- **Purpose:** Enable users to create and customize their own dashboards.

- **Characteristics:**

- User-friendly and intuitive design allowing users to select and visualize their own data.
- May include pre-built widgets or visualizations for users to choose from.

- **Use-Cases:**

- Allowing team members to create their own project tracking dashboards.
- Enabling non-technical users to explore and visualize data.

# Types of Visualizations

- **Bar Charts:** Useful for comparing the size of items across the same category.
- **Line Charts:** Ideal for visualizing trends over a continuous interval or time span.
- **Pie Charts:** Used to show the proportion of whole categories.
- **Scatter Plots:** Useful for observing relationships between two numerical variables.
- **Maps:** Geographical visualizations that can display location-based data.
- **Heat Maps:** Useful for comparing categories using color and size variations.
- **Treemaps:** Display hierarchical data as nested rectangles.
- **Box Plots (Box-and-Whisker Plots):** Used to depict groups of numerical data through their quartiles.

# Types of Visualizations

- **Bullet Graphs:** A variation of a bar graph developed to replace dashboard gauges and meters.
- **Gantt Charts:** Useful for displaying activity over time, often utilized in project management.
- **Histograms:** Useful for showing the distribution of a dataset.
- **Stacked Bar Charts:** Can be used to display the totals across different sub-categories.
- **Bubble Charts:** Similar to scatter plots, but data points are replaced with bubbles.
- **Packed Bubble Charts:** Bubbles are packed into a chart, useful for displaying hierarchical data.
- **Word Clouds:** Display a list of words, with the size of each word indicating its frequency or importance.

## Data Puke

"**Data puke**" is a term used in the data visualization field to describe charts, graphs, or dashboards that present an overwhelming amount of data without clear organization, focus, or meaningful interpretation.

Essentially, it's when a visualization offers a lot of data but little to no insight or clarity.

# Data Puke

Here are a few characteristics often associated with data puke:

- **Overwhelming Information:** Too many data points, metrics, or dimensions are presented all at once without clear categorization or prioritization.
- **Lack of Clarity:** The visualization may lack a clear message or key takeaway, making it difficult for the audience to understand the main point or action item.
- **Poor Design:** This might involve using too many colors, overly complex charts, or cluttered layouts, which can distract from the data and make it hard to discern any meaningful patterns or trends.
- **No Narrative or Context:** Data puke often lacks a storyline or context to guide the viewer through the data and to understand its relevance or importance.
- **Inaccessibility:** It might be difficult for a wide range of audiences to understand due to jargon, complex data representations, or lack of explanatory text.

# User Interface (UI) and User Experience (UX) in Data Visualization

## User Interface (UI)

- UI design is concerned with the visual elements and interactive features of a data visualization tool or application.
- It focuses on creating a visually appealing and intuitive interface for users to interact with the data.
- UI designers work on aspects such as layout, color schemes, typography, and iconography to ensure a cohesive and engaging user experience

## User Experience (UX)

- UX design is responsible for the overall experience and satisfaction of users when interacting with a data visualization tool or application.
- It focuses on understanding user needs, goals, and behaviors to create a seamless and meaningful experience.
- UX designers work on aspects such as information architecture, interaction design, and usability testing to ensure that the data visualization tool is effective and easy to use

# Role of UI and UX in Storytelling

## User Interface (UI)

- Facilitate Interaction
- Present Information
- Guide Navigation

## User Experience (UX)

- Enhance Navigation
- Ensure Satisfaction
- Drive Engagement

# DATA VISUALIZATION CHART CATEGORIES

# Visual Vocabulary

## Visual Vocabulary

There are so many ways to visualise data - how do we know which one to pick? Click on a category below to decide which data relationship is most important in your story, then look at the different types of charts within the category to form some initial ideas about what might work best. This list is not meant to be exhaustive, nor a wizard, but is a useful starting point for making informative and meaningful data visualisations.

Click any section below to view the charts



### Deviation

Emphasise variations (+/-) from a fixed reference point. Typically the reference point is zero but it can also be a target or a long-term average. Can also be used to show sentiment (positive/neutral/negative).

### Correlation

Show the relationship between two or more variables. Be mindful that, unless you tell them otherwise, many readers will assume the relationships you show them to be causal (i.e., one causes the other).

### Ranking

Use where an item's position in an ordered list is more important than its absolute or relative value. Don't be afraid to highlight the points of interest.

### Distribution

Show values in a dataset and how often they occur. The shape (or 'skew') of a distribution can be a memorable way of highlighting the lack of uniformity or equality in the data.

### Change over Time

Give emphasis to changing trends. These can be short (intra-day) movements or extended series traversing decades or centuries: Choosing the correct time period is important to provide suitable context for the reader.

### Part-to-Whole

Show how a single entity can be broken down into its component elements. If the reader's interest is solely in the size of the components, consider a magnitude-type chart instead.

### Magnitude

Show size comparisons. These can be relative (just being able to see larger/bigger) or absolute (need to see fine differences). Usually these show a 'counted' number (for example, barrels, dollars or people) rather than a calculated rate or per cent.

### Spatial

Used only when precise locations or geographical patterns in data are more important to the reader than anything else.

### Flow

Show the reader volumes or intensity of movement between two or more states or conditions. These might be logical sequences or geographical locations.

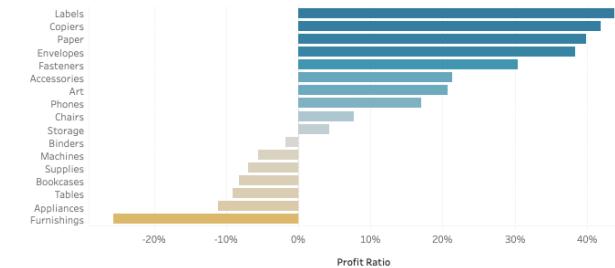
# Deviation Chart Type

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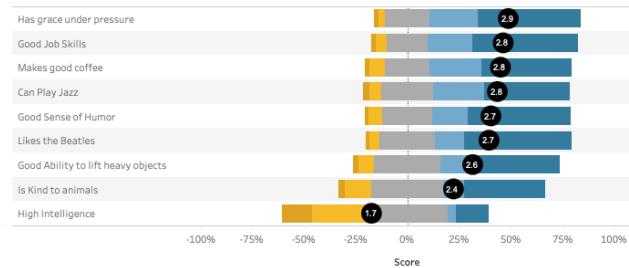
### Diverging Bar

A simple standard bar chart that can handle both negative and positive magnitude values



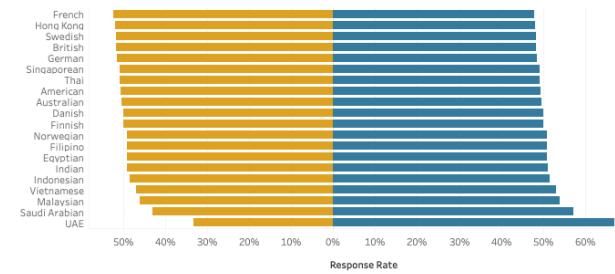
### Diverging Stacked Bar

Perfect for presenting survey results which involve sentiment (e.g., disagree/neutral/agree)



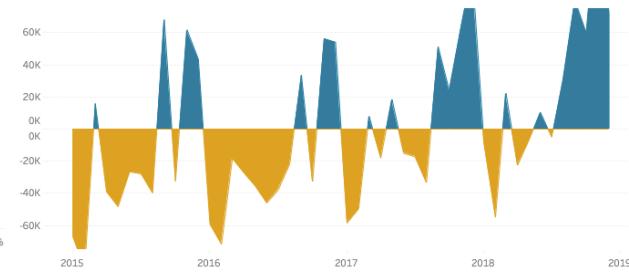
### Spine Chart

Splits a single value into 2 contrasting components (e.g., Male/Female)



### Surplus/Deficit Filled Line

The shaded area of these charts allows a balance to be shown – either against a baseline or between two series.



## Deviation Chart Type

- They emphasize variations from a fixed reference point , typically the reference point is 0 but it can be a target or a long-term average for example
- They can be used to show sentiment
- Examples using Diverging Bar or a Diverging Stacked Bar

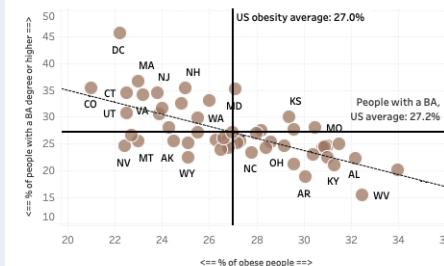
# Correlation Chart Type

## Correlation

Show the relationship between two or more variables. Be mindful that, unless you tell them otherwise, many readers will assume the relationships you show them to be causal (i.e., one causes the other).

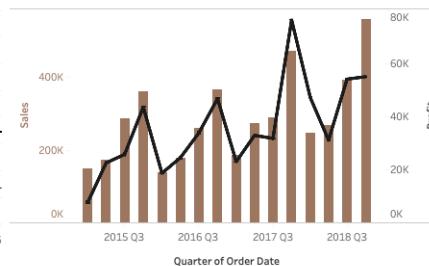
### Scatterplot

The standard way to show the relationship between two continuous variables, each of which has its own axis.



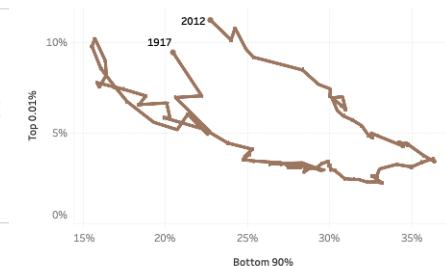
### Line + Column

A good way of showing the relationship between an amount (columns) and a rate (line).



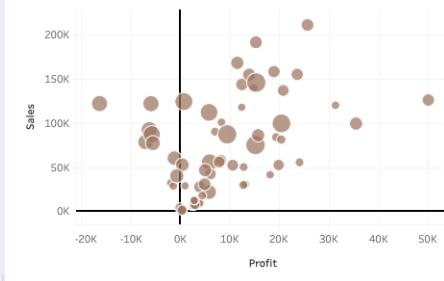
### Connected Scatterplot

Usually used to show how the relationship between 2 variables has changed over time.



### Bubble

Like a scatterplot, but adds additional detail by sizing the circles according to a third variable.



### XY Heatmap

A good way of showing the patterns between 2 categories of data, less good at showing fine differences in amounts.

| Age Range | I don't have a savings account | \$0   | Just the minimum balance requirement | Less than \$1,000 | \$1,000-\$4,999 | \$5,000-\$9,999 | \$10,000 or more |
|-----------|--------------------------------|-------|--------------------------------------|-------------------|-----------------|-----------------|------------------|
| Overall   | 21.0%                          | 28.0% | 9.0%                                 | 13.0%             | 10.0%           | 5.0%            | 14.0%            |
| 18-24     | 22.4%                          | 21.8% | 9.7%                                 | 19.1%             | 14.7%           | 4.7%            | 7.5%             |
| 25-34     | 18.0%                          | 26.3% | 10.6%                                | 15.2%             | 12.5%           | 5.4%            | 12.1%            |
| 35-44     | 18.9%                          | 31.6% | 6.6%                                 | 11.6%             | 9.8%            | 5.6%            | 16.0%            |
| 45-54     | 21.6%                          | 30.8% | 7.7%                                 | 10.9%             | 7.5%            | 5.2%            | 16.2%            |
| 55-64     | 22.8%                          | 28.4% | 8.4%                                 | 10.7%             | 8.0%            | 4.8%            | 16.8%            |
| 65+       | 21.6%                          | 27.6% | 10.7%                                | 8.2%              | 7.2%            | 4.7%            | 20.0%            |

# Correlation Chart Type

- Show the relationship between two or more variables
- Relationship does not indicated causality (that one causes the other)
- Examples Scatterplot and XY Heatmap or highlight table

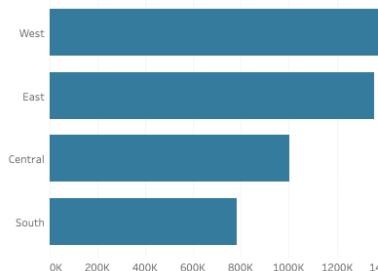
# Rankin Chart Type

## Ranking

Use where an item's position in an ordered list is more important than its absolute or relative value. Don't be afraid to highlight the points of interest.

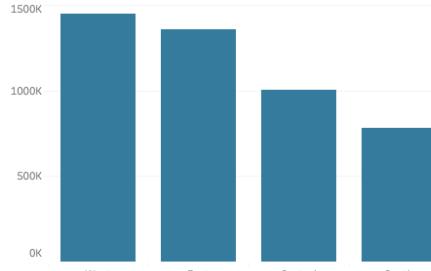
### Ordered Bar

Standard bar charts display the ranks of values much more easily when sorted into order.



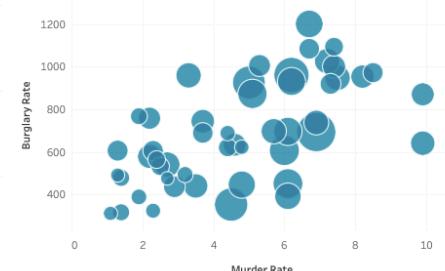
### Ordered Column

Standard bar charts display the ranks of values much more easily when sorted into order.



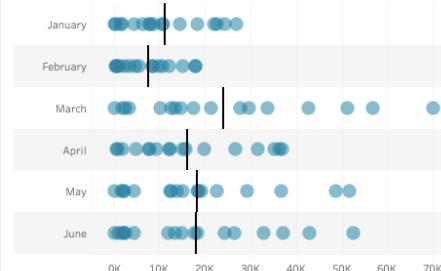
### Ordered Proportional Symbol

Use when there are big variations between values and/or seeing fine differences between data is not so important.



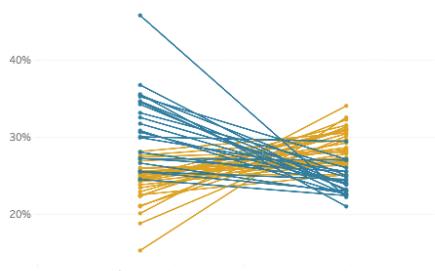
### Dot Strip Plot

Dots placed in order on a strip are a space-efficient method of laying out ranks across multiple categories.



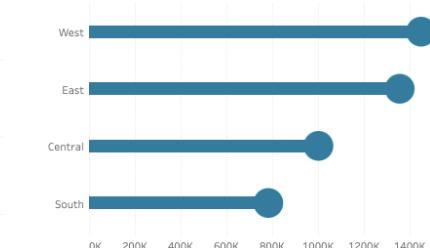
### Slope

Perfect for showing how ranks have changed over time or vary between categories.



### Lollipop Chart

Lollipops draw more attention to the data value than standard bar/column and can also show rank and value effectively.



## Rankin Chart Type

- They show where an item's position is an ordered list and that is more important than its absolute or relative value (that is the ranking is more important)
- Examples like Ordered Bar or the Ordered Column

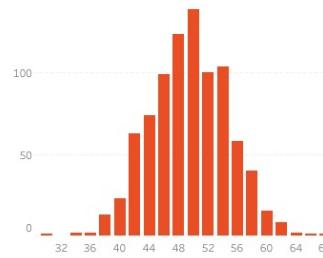
# Distribution Chart Type

## Distribution

Show values in a dataset and how often they occur. The shape (or 'skew') of a distribution can be a memorable way of highlighting the lack of uniformity or equality in the data.

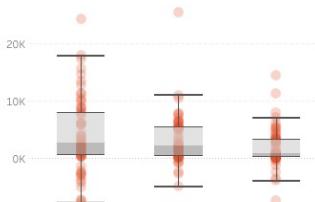
### Histogram

The standard way to show a statistical distribution - keep the gaps between columns small to highlight the 'shape' of the data.



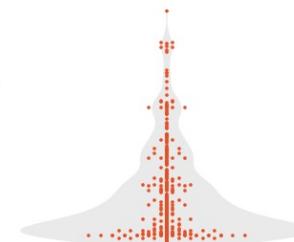
### Boxplot

Summarise multiple distributions by showing the median (centre) and range of the data



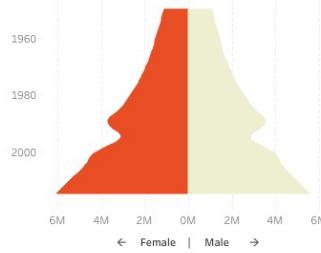
### Violin Plot

Similar to a box plot but more effective with complex distributions (data that cannot be summarised with simple average).



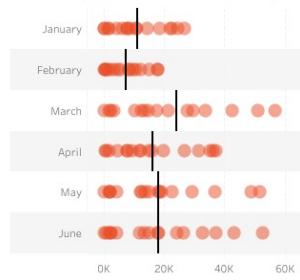
### Population Pyramid

A standard way for showing the age and sex breakdown of a population distribution; effectively, back to back histograms.



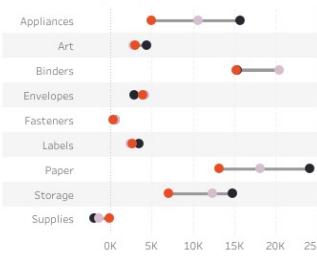
### Dot Strip Plot

Dots placed in order on a strip are a space-efficient method of laying out ranks across multiple categories.



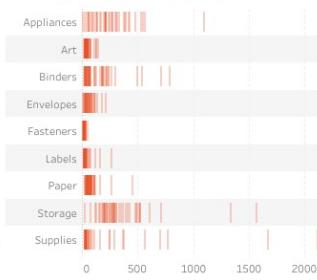
### Dot Plot

A simple way of showing the change or range (min/max) of data across multiple categories.



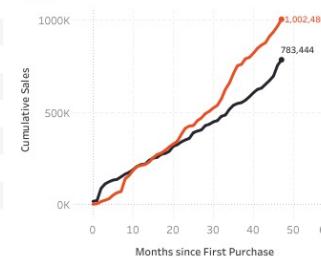
### Barcode Plot

Like dot strip plots, good for displaying all the data in a table, they work best when highlighting individual values.



### Cumulative Curve

A good way of showing how unequal a distribution is: y axis is always cumulative frequency, x axis is always a measure.



# Distribution Chart Type

- They show values in a dataset and how often they occur
- They show the shape or the skew of the distribution which be memorable way of highlighting the lack of uniformity or equality in the data
- Examples like Histogram or Box Plot

# Change Over Time Chart Type

## Change over Time

Give emphasis to changing trends. These can be short (intra-day) movements or extended series traversing decades or centuries: Choosing the correct time period is important to provide suitable context for the reader.

### Line

The standard way to show a changing time series. If data are irregular, consider markers to represent data points.



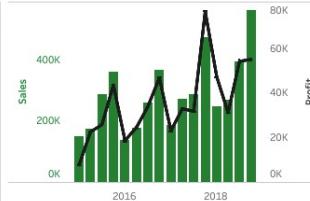
### Column

Columns work well for showing change over time - but usually best with only one series of data at a time.



### Line + Column

Columns work well for showing change over time - but usually best with only one series of data at a time.



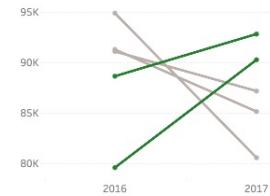
### Stock Price

Usually focused on day-to-day activity, these charts show opening/closing and hi/low points of each day.



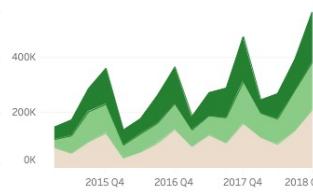
### Slope

Good for showing changing data as long as the data can be simplified into 2 or 3 points without missing a key part of story.



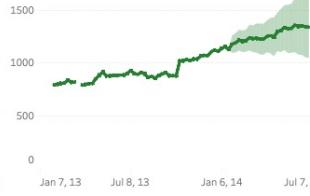
### Area Chart

Use with care - these are good at showing changes to total, but seeing change in components can be very difficult.



### Fan Chart

Use to show the uncertainty in future projections - usually this grows the further forward to projection.



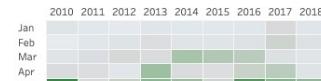
### Connected Scatterplot

A good way of showing changing data for two variables whenever there is a relatively clear pattern of progression.



### Calendar Heatmap

A great way of showing temporal patterns (daily, weekly, monthly) - at the expense of showing precision in quantity.



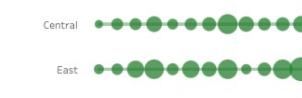
### Priestley Timeline

Great when date and duration are key elements of the story in the data.



### Circle Timeline

Good for showing discrete values of varying size across multiple categories (e.g., sales by quarter).



### Seismogram

Another alternative to the circle timeline for showing series where there are big variations in the data.



# Change Over Time Chart Type

- They emphasize changing trends, they can be short intraday movements or extended series traversing decades
- Examples Line Short or the Slope Chart

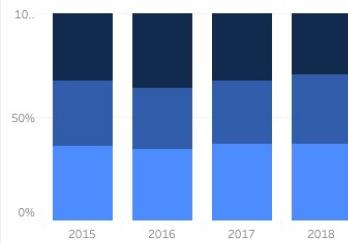
# Part-to-Whole Chart Type

## Part-to-Whole

Show how a single entity can be broken down into its component elements. If the reader's interest is solely in the size of the components, consider a magnitude-type chart instead.

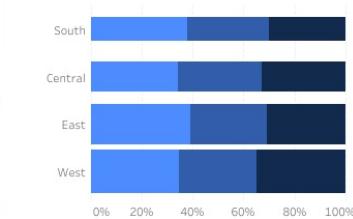
### Stacked Column

A simple way of showing part-to-whole relationships but can be difficult to read with more than a few components.



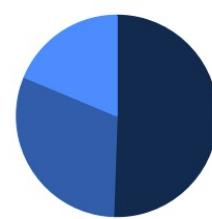
### Proportional Stacked Bar

A good way of showing the size and proportion of data at the same time – as long as the data are not too complicated.



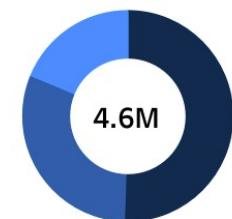
### Pie Chart

A common way of showing part-to-whole data – but be aware that it's difficult to accurately compare the size of the segments.



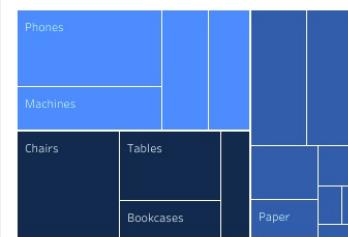
### Donut Chart

Similar to a pie chart – but the centre can be a good way of making space to include more information about the data (e.g., total).



### Treemap

Use for hierarchical part-to-whole relationships; can be difficult to read when there are many small segments.



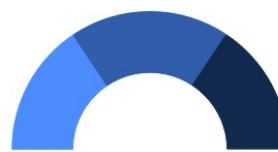
### Sunburst

Another way of visualising hierarchical part-to-whole relationships. Use sparingly (if at all) for obvious reasons.



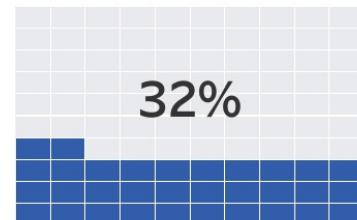
### Arc

Another way of visualising hierarchical part-to-whole relationships. Use sparingly (if at all) for obvious reasons.



### Gridplot

Good for showing % information, they work best when used on whole numbers and work well in multiple layout form.



### Venn

Generally only used for schematic representation.

## Part-to-Whole Chart Type

- They show how a single entity can be broken down into its component elements
- If the interest is in the size of the components you would consider using magnitude type charts instead
- Examples include Stacked column, Pie Charts, or Treetop

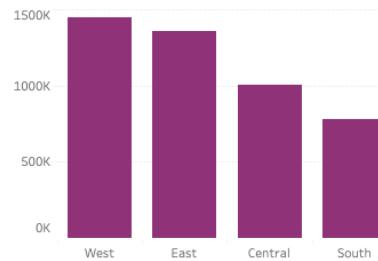
# Magnitude Chart Type

## Magnitude

Show size comparisons. These can be relative (just being able to see larger/bigger) or absolute (need to see fine differences). Usually these show a 'counted' number (for example, barrels, dollars or people) rather than a calculated rate or per cent.

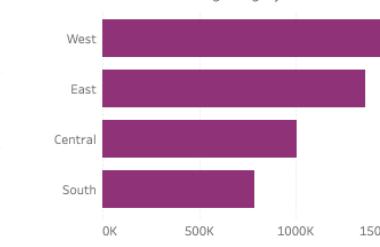
### Column

The standard way to compare the size of things. Must always start at 0 on the axis.



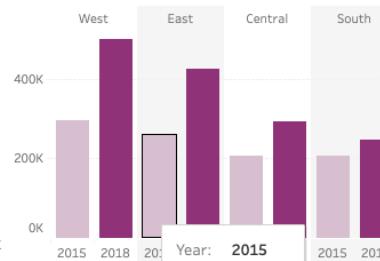
### Bar

The standard way to compare the size of things. Must always start at 0 on the axis. Good when the data are not time series and labels have long category names.



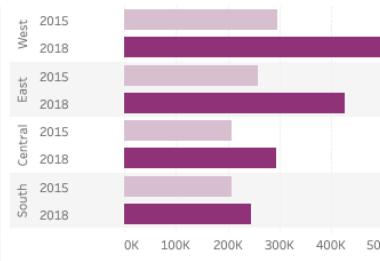
### Paired Column

As per standard column, but allows for multiple series. Can become tricky to read with more than 2 series.



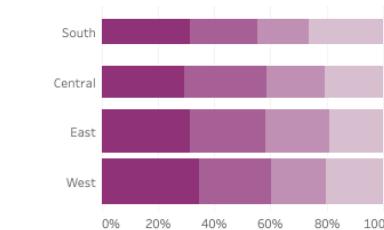
### Paired Bar

As per standard bar, but allows for multiple series. Can become tricky to read with more than 2 series.



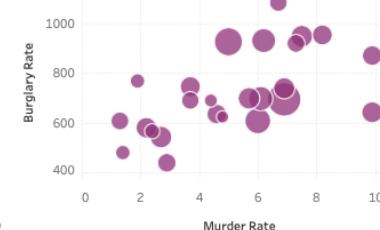
### Proportional Stacked Bar

A good way of showing the size and proportion of data at the same time – as long as the data are not too complicated.



### Proportional Symbol

Use when there are big variations between values and/or seeing fine differences between data is not so important.



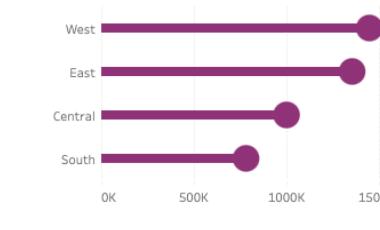
### Isotype (pictograph)

Excellent solution in some instances – use only with whole numbers (do not slice off an arm to represent a decimal).



### Lollipop Chart

Lollipops draw more attention to the data value than standard bar/column - does NOT HAVE to start at zero (but preferable).



# Magnitude Chart Type

- They show size comparisons
- They can be relative (just being able to see if they are larger) or absolute (need to see fine differences )
- They usually show a counted number something like barrels , dollars, or people, rather than a calculated rate or percent

# Spatial Chart Type

## Spatial

Used only when precise locations or geographical patterns in data are more important to the reader than anything else.

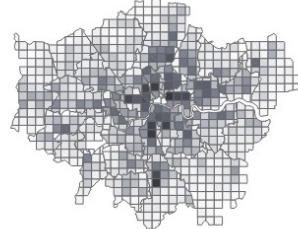
### Basic Choropleth (rate/ratio)

The standard approach for putting data on a map – should always be rates rather than totals and use a sensible base geography.



### Equalized Cartogram

Converting each unit on a map to a regular and equally-sized shape – good for representing voting regions with equal value.



### Proportional Symbol (count/magnitude)

Use for totals rather than rates – be wary that small differences in data will be hard to see.

© Mapbox © OSM



### Scaled Cartogram

Stretching and shrinking a map so that each area is sized according to a particular value.



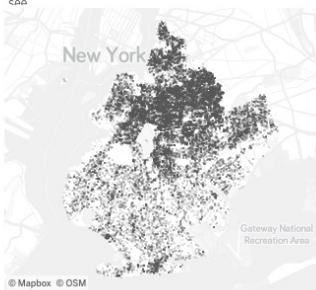
### Flow Map

For showing unambiguous movement across a map.



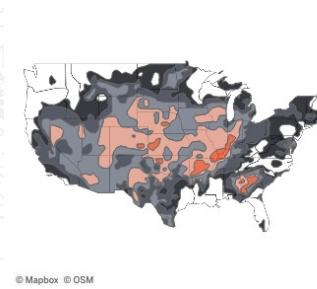
### Dot Density

Used to show the location of individual events/locations – make sure to annotate any patterns the reader should see.



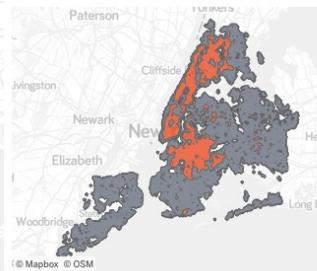
### Contour Map

For showing areas of equal value on a map. Can use deviation colour schemes for showing +/- values



### Heat Map

Grid-based data values mapped with an intensity colour scale. As choropleth map – but not snapped to an admin/political unit.



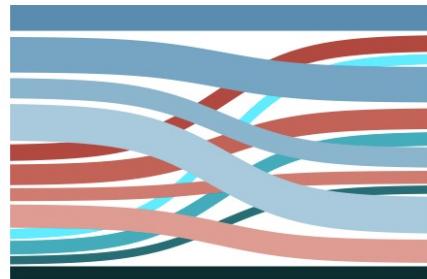
# Flow Chart Type

## Flow

Show the reader volumes or intensity of movement between two or more states or conditions. These might be logical sequences or geographical locations.

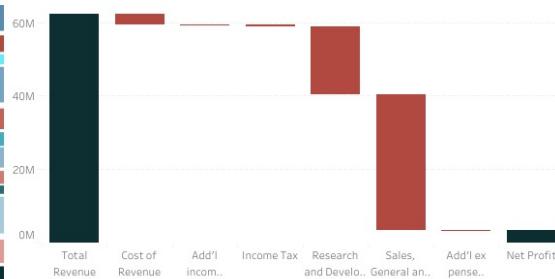
### Sankey

Shows changes in flows from one condition to at least one other; good for tracing the eventual outcome of a complex process.



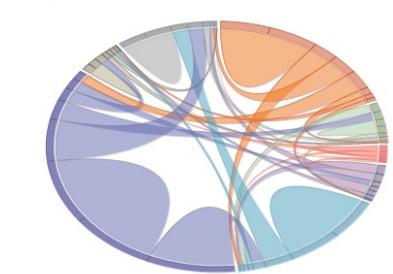
### Waterfall

Designed to show the sequencing of data through a flow process, typically budgets. Can include +/- components.



### Chord

A complex but powerful diagram which can illustrate 2-way flows (and net winner) in a matrix.



### Network

Used for showing the strength and inter-connectedness of relationships of varying types.



# Flow Chart Type

- They show volumes or intensity of movement between two or more states or conditions
- They can be logical sequences or geographical locations
- Examples include Sandy, Waterfall, or Network

# On Selecting a Chart Type

- Choosing the right chart type is essential for the success of your chart
- The chart type should support the story you are trying to tell
- And you should consider your audience data literacy as part of the selection
- Don't choose a complex chart if your audience is not very data literate