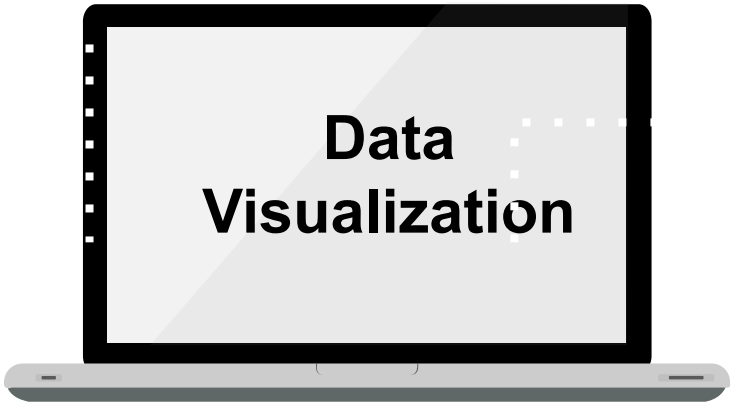
Data Visualization

When Images talk

Toward Data Visualization

Evolution of information structuring

Accessibility of Data

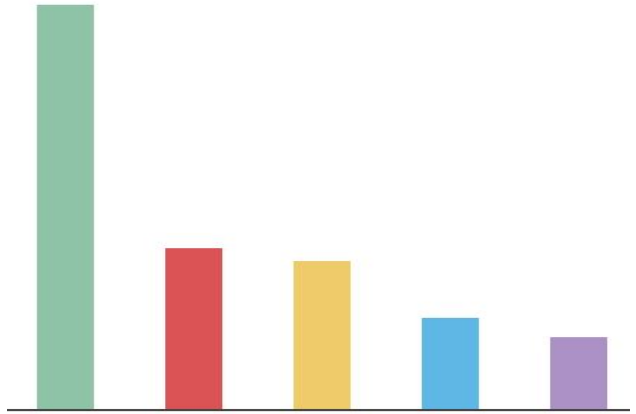


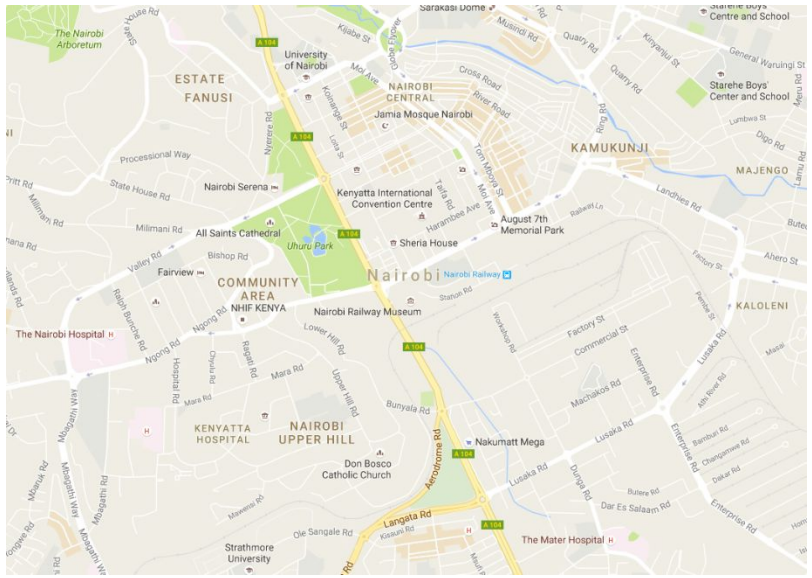
Value of Generated Information

Every Company Possesses Data

Free Social Media contenant

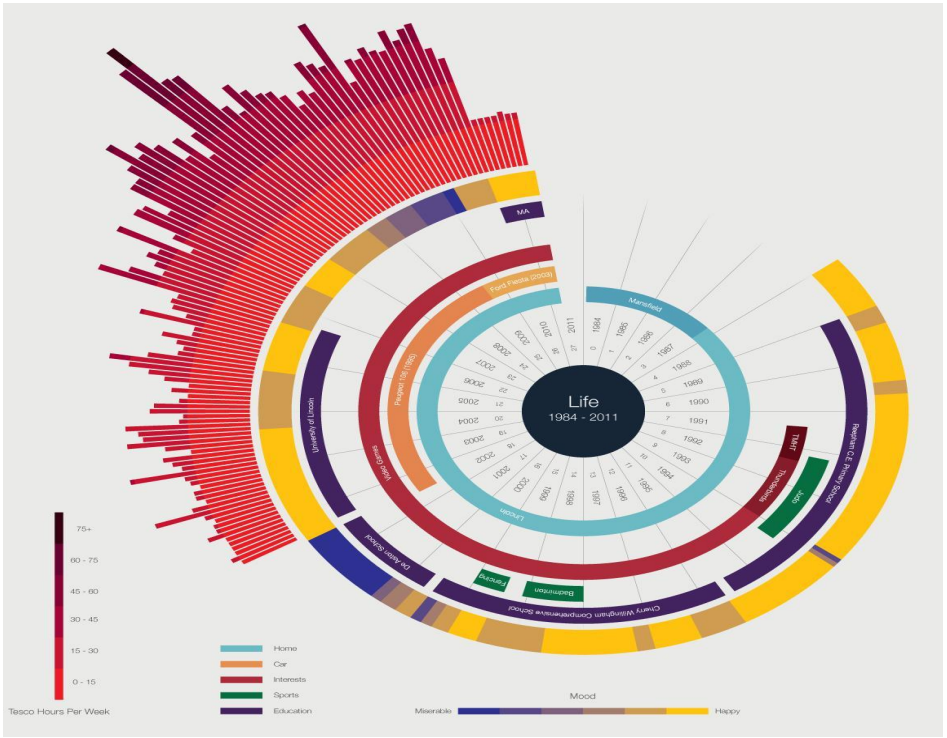
Name the Data Visualization





58%

George Patterson, The Noun Project



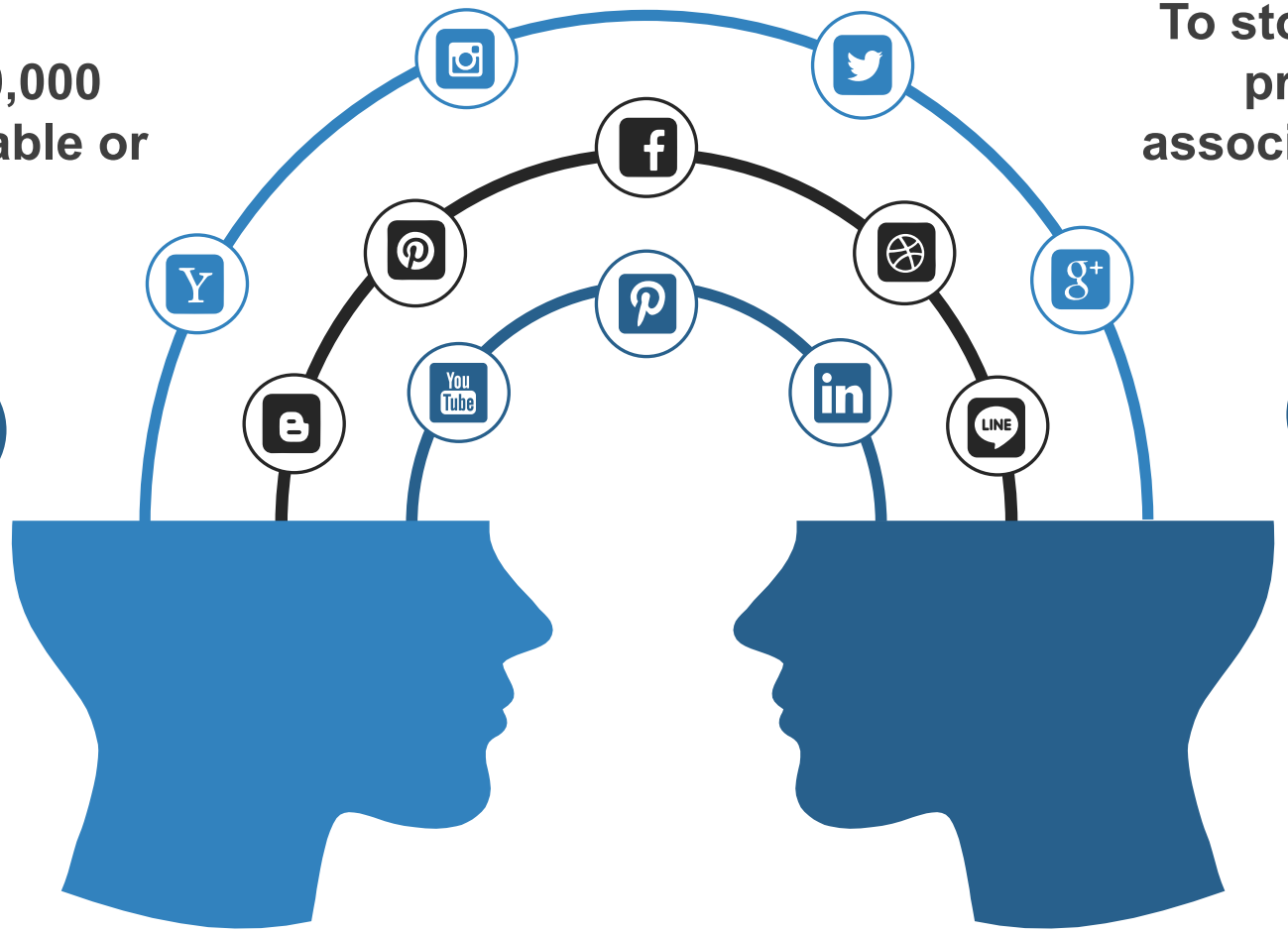
Why Data Visualization

Visual Information

we typically process images 60,000 times faster than a table or text

13 milliseconds

To store the information, provided that it is associated with a concept



We remain Visual Information

10% and 20% of written or spoken information compared with 65% of visual information

36, 000 visual messages per hour.

40% of nerve fibers are connected to the retina.

Try it by yourself

Month	Jan	Feb	Mar	Apr	May	Jun
Sales	45	56	36	58	75	62

+8%

The graph takes what the numbers cannot communicate on their own and conveys it in a visible, memorable way. This is the real strength of data visualization

Definition

A nontext- based representation of data that enhances the understanding of that data.

Definition

Data visualization is a multifaceted process involving the acquisition, interpretation, and comparison of data to effectively communicate intricate concepts. Its primary objective is to facilitate the clear identification and analysis of meaningful patterns within the data.

Unlocking the Power: Advantages of Data Visualization

01 Enhanced Understanding & Effective Communication

02 Improved Decision-Making

03 Identifying Trends and Patterns & Enhanced Exploration and Discovery

04 Quick Detection of Anomalies

“Nicely designed posters with a few numbers on them aren’t really data viz.”

– Amanda Cox
Editor of Upshot, New York Times

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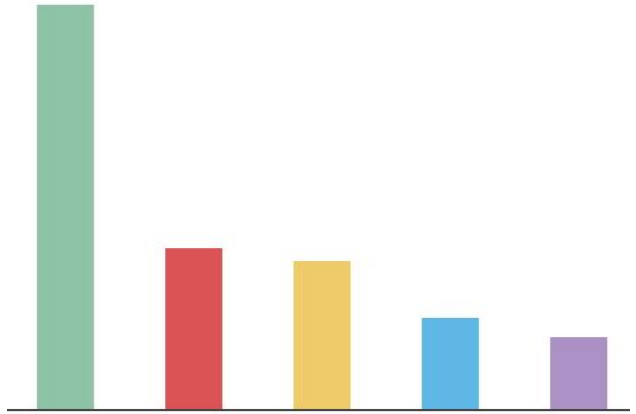
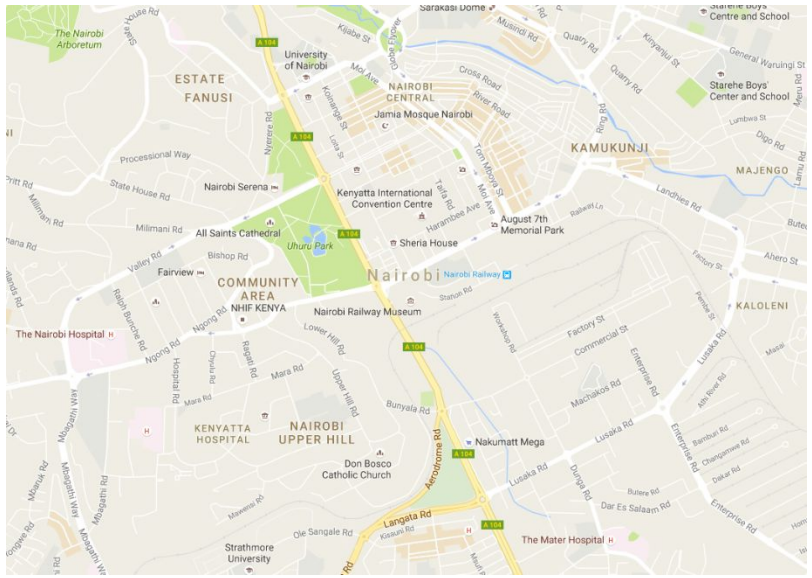
Name the Data Visualization (Revisited)





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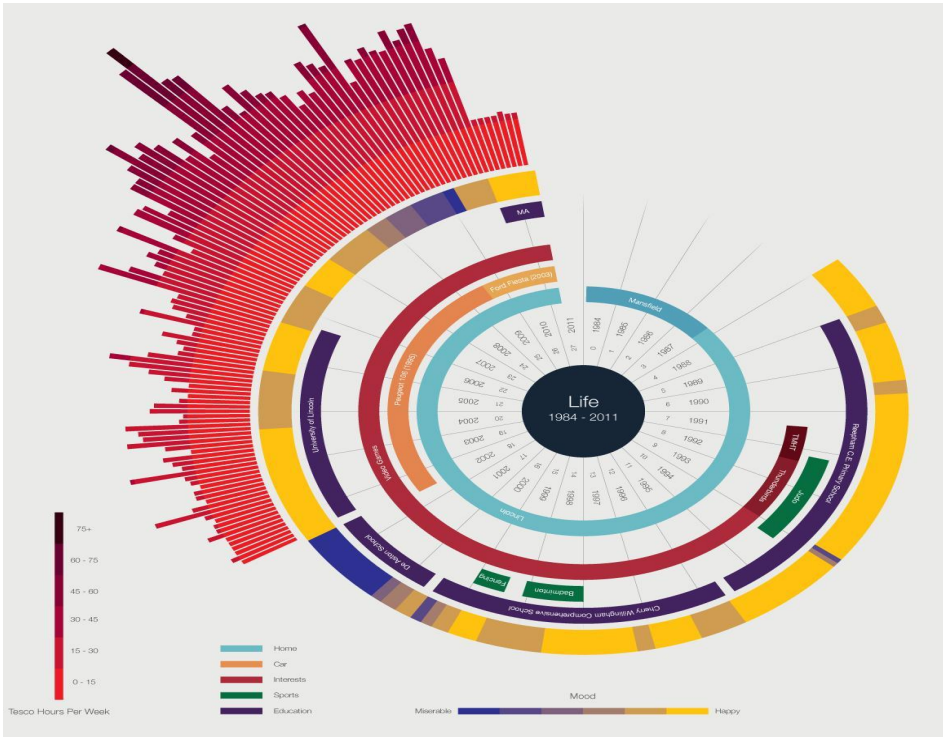
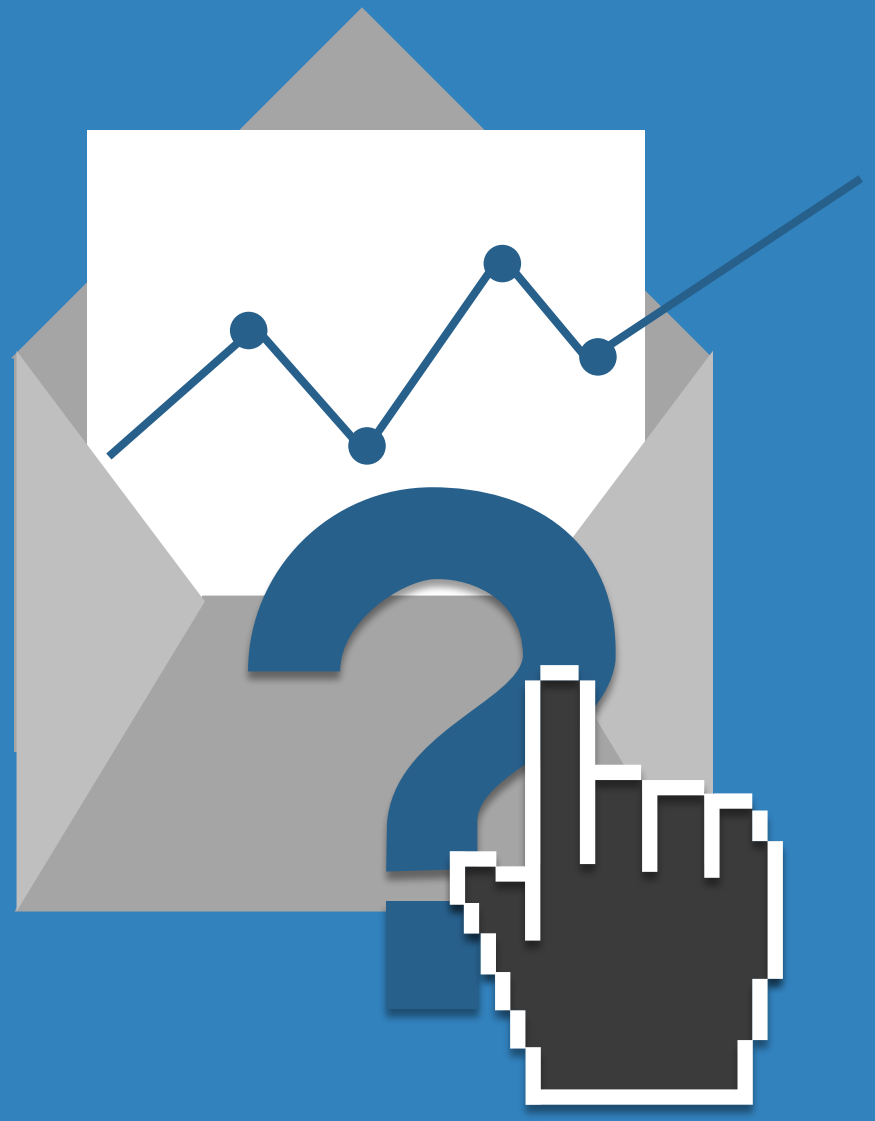
George Patterson, The Noun Project



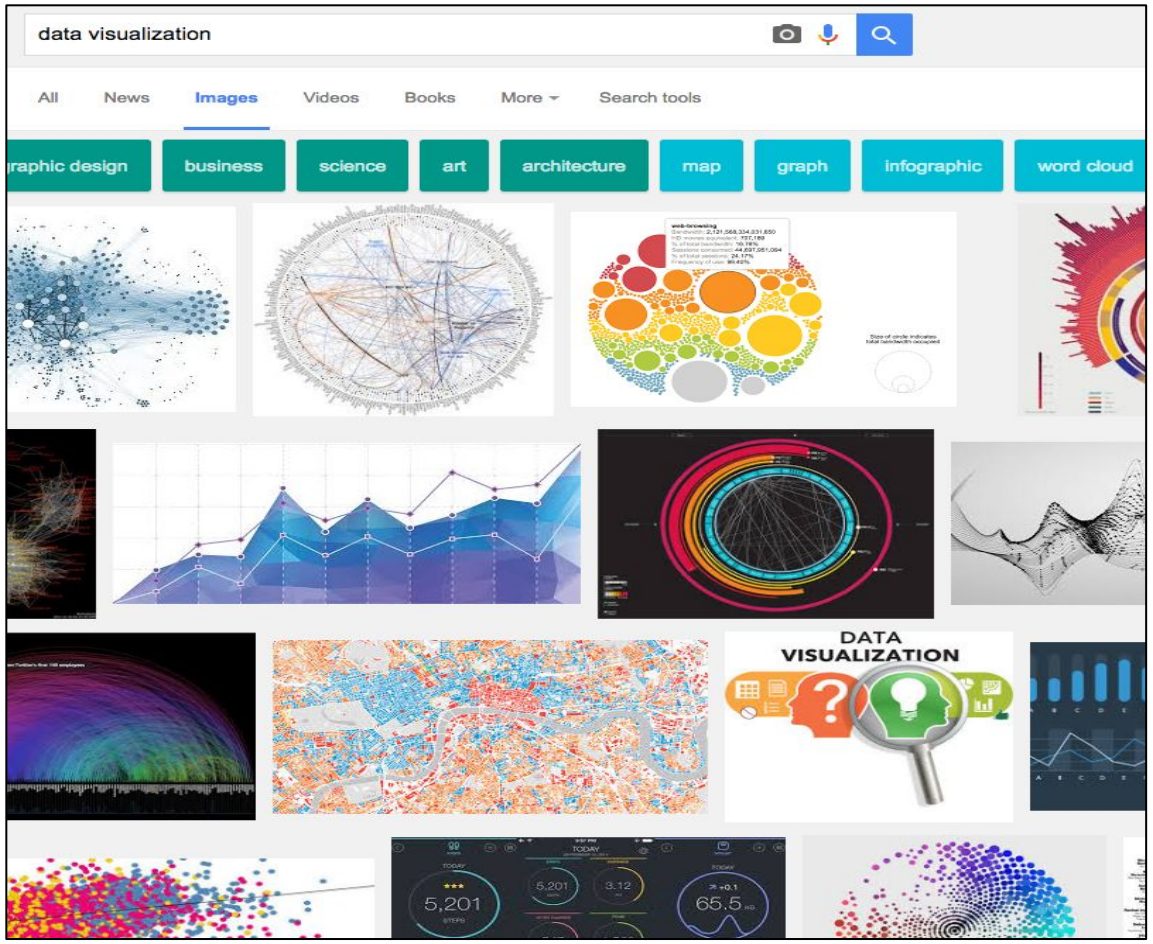
Data Visualization vs. Infographic

These terms are sometimes used interchangeably.

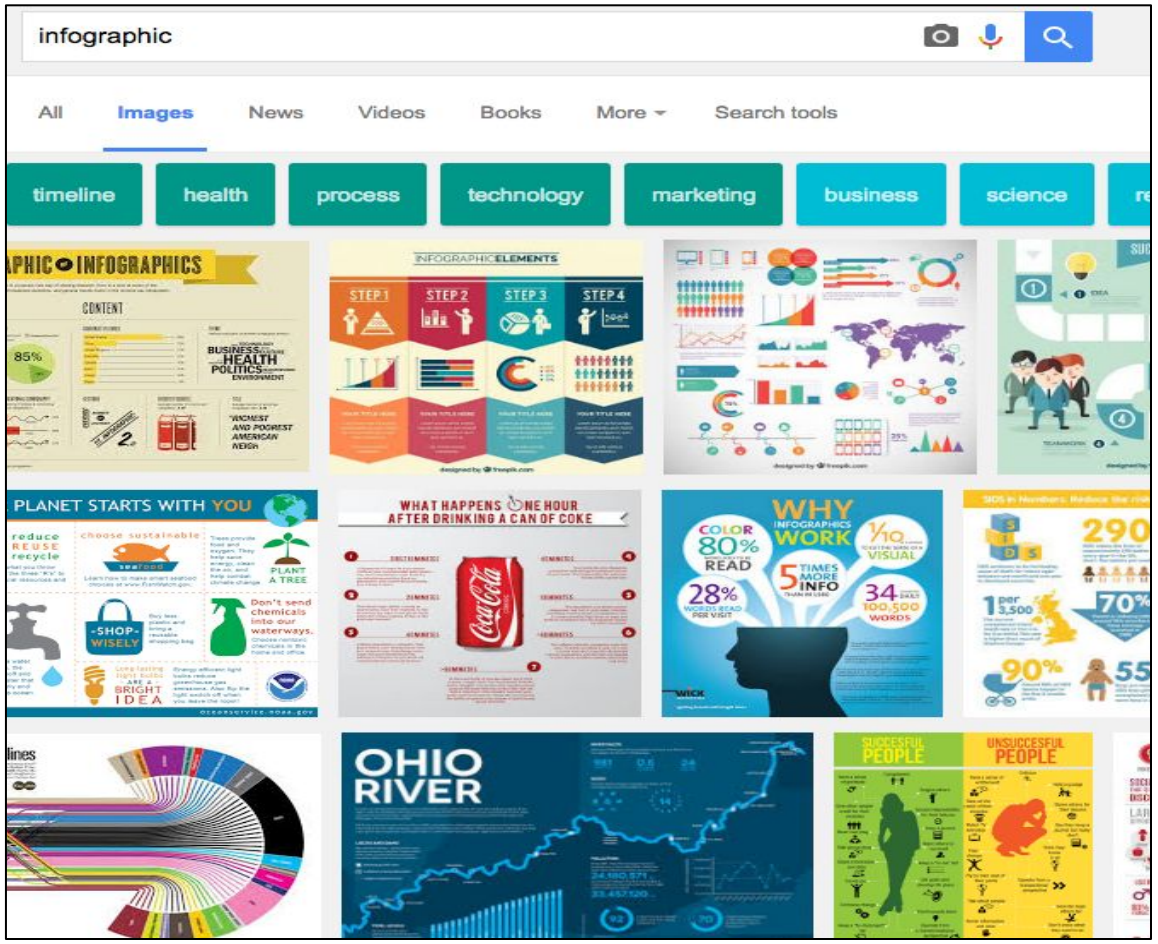
Just remember: You need DATA plus a visual representing the data to make a data viz!



What Google Thinks

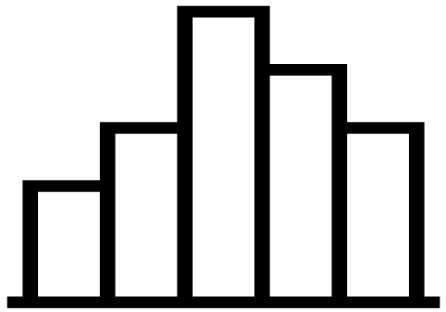


Graphs, geometric shapes, color coded, number driven

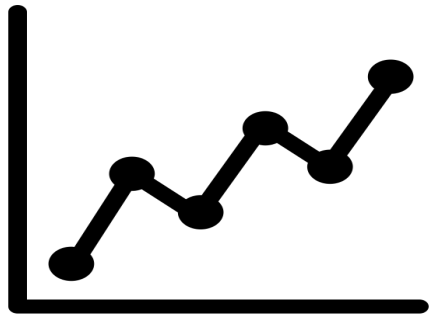


Collection of facts, icons, pictorials, text driven

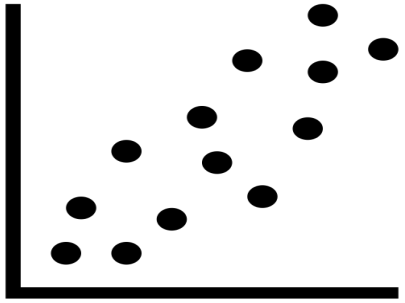
Basic Data Visualizations



Bar chart

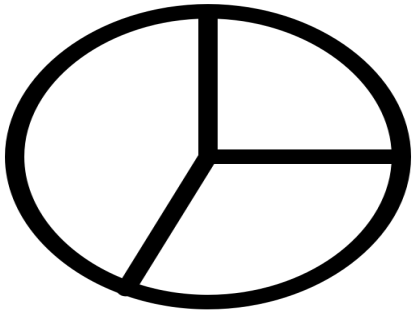


Line chart

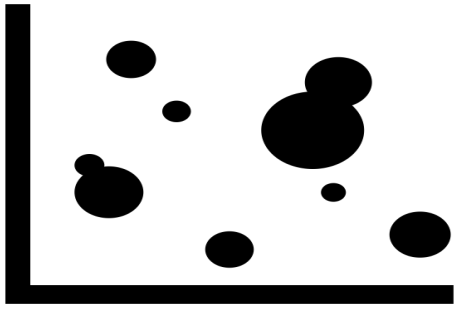


Scatter plot

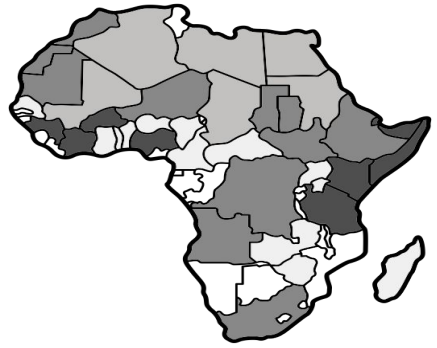
Area chart



Pie chart

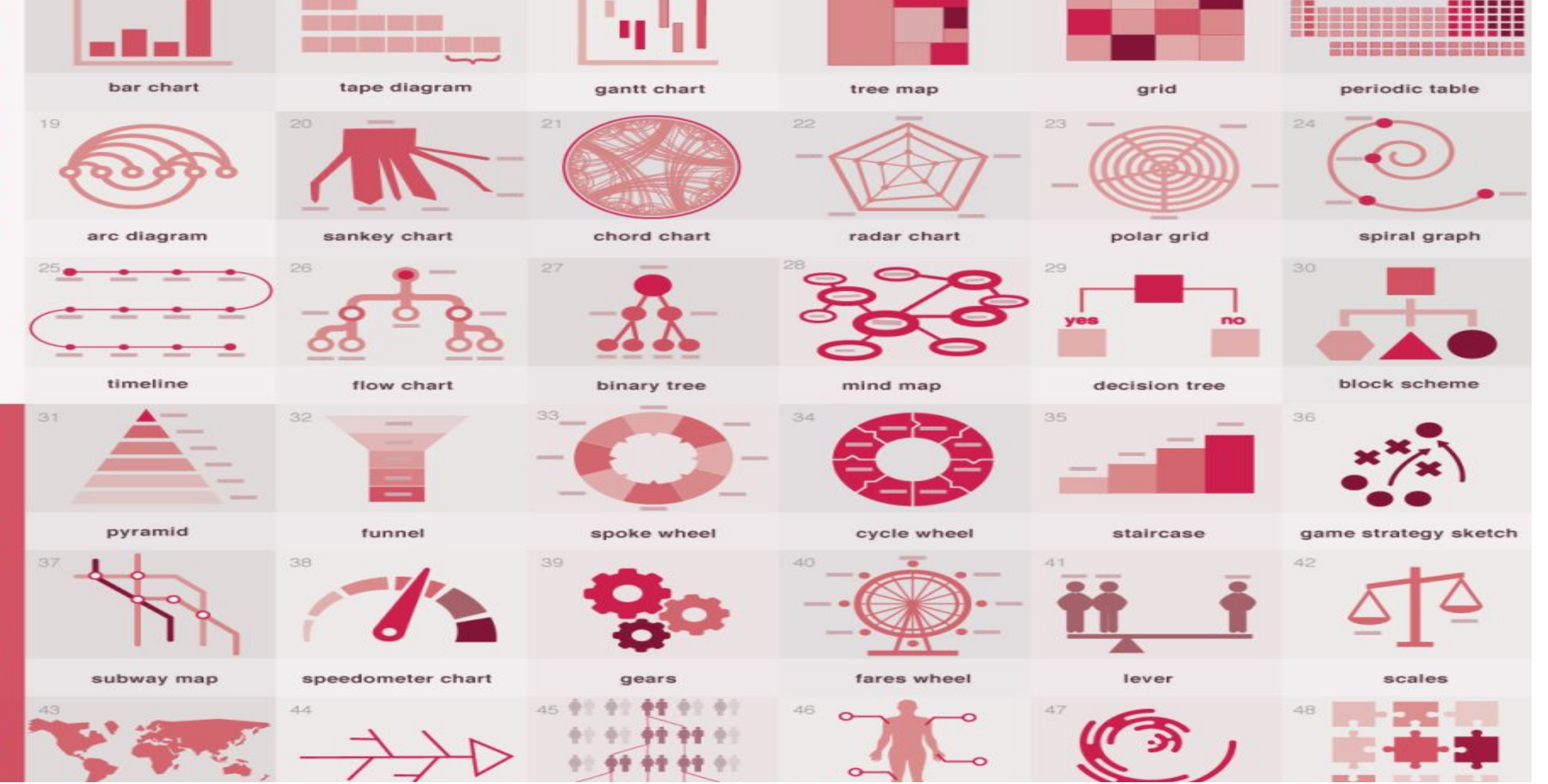


Bubble chart



Heat map

Alexander Blagochevsky, Austin Condiff, Pham Thi Dieu Linh, Yohann Berger, Sergey Demushkin, The Noun Project


bar chart
tape diagram
gantt chart
tree map
grid
periodic table
19
arc diagram
20
sankey chart
21
chord chart
22
radar chart
23
polar grid
24
spiral graph
25
timeline
26
flow chart
27
binary tree
28
mind map
29
yes
no
decision tree
30
block scheme
31
pyramid
32
funnel
33
spoke wheel
34
cycle wheel
35
staircase
36
game strategy sketch
37
subway map
38
speedometer chart
39
gears
40
fares wheel
41
lever
42
scales
43
44
45
46
47
48

WHY USE DATA VISUALIZATIONS?

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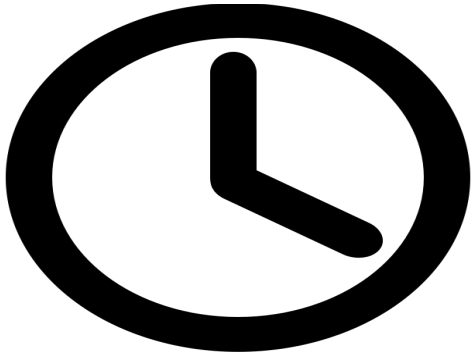
Speed



Attention span has FALLEN from **12 seconds** in 2000 to **8 seconds** in 2015

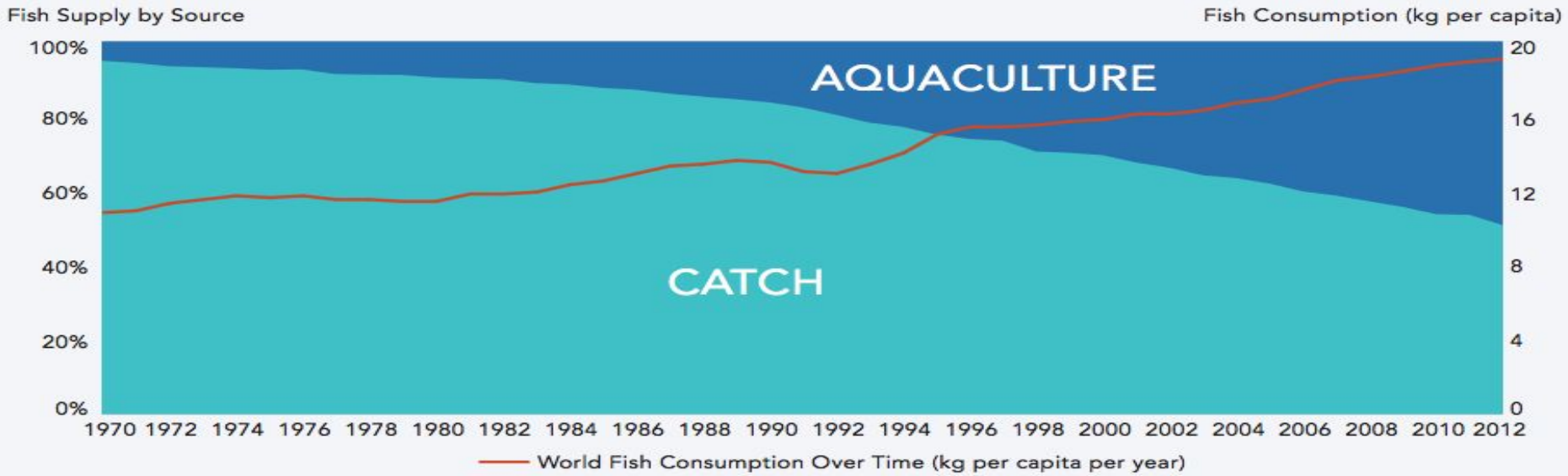
Data visualizations allow quicker understanding of a data set

Comprehension

Aquaculture Meets Fish Demand as Ocean Catches Decline

Seafood is an important protein source for about 3 billion people worldwide. Population growth, new ocean fishing technologies, and changes in ocean ecosystems have placed strains on wild fish stocks. Total ocean catches peaked in the late 1990s and the World Wildlife Fund estimates that the oceans contain half the number of fish they did in 1970. Declining catches also reflect national and global efforts to enforce sustainable catch limits. Strong growth in aquaculture has allowed per capita fish consumption to rise steadily, to a global average of 19 kilograms per person in 2012 from about 10 kilograms in the 1960s. In 2012, aquaculture was the source for about half (49 percent) of fish consumed by humans, up from 5 percent in 1962.

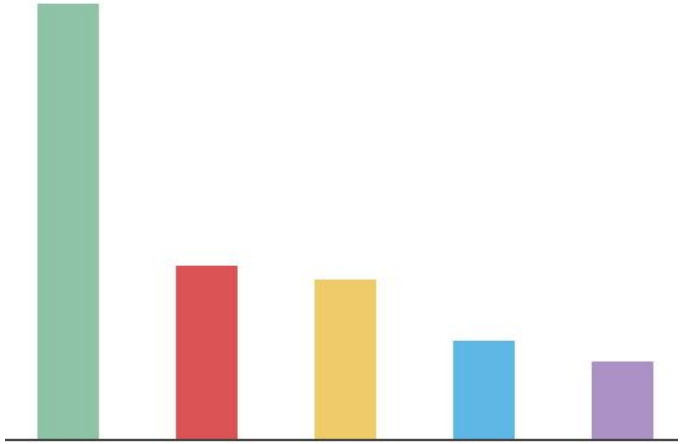
Trend in Annual World Fish Supply by Source and Fish Consumption per Capita, 1970-2012



Sources: Food and Agriculture Organization, Fisheries and Aquaculture Department.

Retention

Which example have we not seen before?



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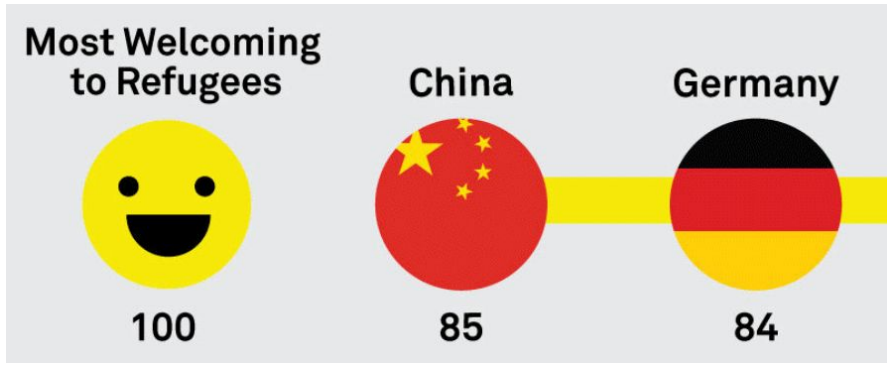
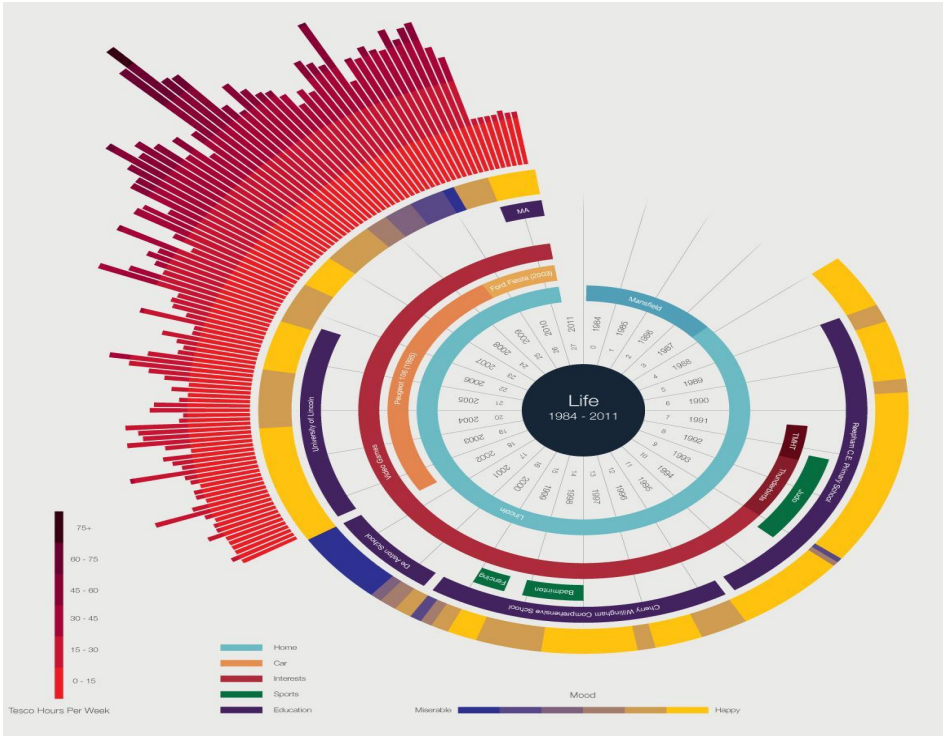


© Good



© Ben Willers

PLANNING YOUR DATA VISUALIZATION

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A Good Data Visualization

1. Must be accurate and not misrepresent data
2. Must be easy to understand
3. Relates to your audience
4. Only shows what’s necessary

DATA relationships

1. Ranking

A visualization that relates two or more values with respect to a relative magnitude. For example: a company's most sold products.

DATA relationships

2. Deviation

Examines how each data point relates to the others and. particularly to what point its value differs from the average. For example; the line of deviation for tickets to an amusement park sold on a rainy versus a normal day

DATA relationships

3. Nominal comparison

Visualizations that compare quantitative values from different subcategories.

DATA relationships

4. Correlation

Data with two or more variables that can demonstrate a positive or negative correlation with one another.

DATA relationships

5. Partial and total relationships

Show a subset of data as compared with a larger total

DATA relationships

6. Time series

Here we can trace the changes in the values of a constant metric over the course of time

DATA relationships

7. Distribution

Visualization that shows the distribution of data spatially, often around a central value.

Data Relationship Type	Description	Suggested Visualization Plots
Ranking	Compares relative magnitudes of values.	Bar Chart, Ordered List
Deviation	Examines differences from an average or a central value.	Deviation Bar Chart, Box Plot
Nominal Comparisons	Compares quantitative values across different categories.	Bar Chart, Pie Chart
Correlation	Shows relationships between two or more variables, indicating positive or negative correlations.	Scatter Plot, Bubble Chart
Partial and Total Relationships	Compares a subset of data with a larger total, often in terms of proportions.	Stacked Bar Chart, Pie Chart
Series over Time	Tracks changes in a metric over a period.	Line Chart, Area Chart
Distribution	Displays how data is distributed, often around a central value, and can show range, central tendency, and spread.	Histogram, Box Plot, Violin Plot