Charts

Why do you need to use charts, graphs, and diagrams
Research papers are often based on a large amount of data that can be best summarised through charts, graphs and diagrams. The data need to be presented to the reader in a **visually appealing way**, so they can help you draw and keep the attention of your listeners.

Types of charts, diagrams, and graphs

- **Charts** - Pie, Mosaic, Spider, Stock, Flow, Gantt, Control, Waterfall, Sunburst, Pareto, Radar
- **Diagrams** - Hierarchy, Binary Decision, Circuit, Tree, Venn, Anatomical
- **Graphs -** Line, Bar, Stacked Bar, Trellis Bar, Trellis Line, Multi-Line
- **Other** - Histogram, Heat Maps, Contour Plots, Scatter Plots, Pictograms, Scattergrams, Timelines, Function Plots, Population Pyramids

  A **bar chart** is a **chart** that presents data with rectangular **bars** with heights or lengths proportional to the values that they represent.

  Line graphs are used to track changes over short or long periods of time. Data points are connected with a single continuous line.

  A **pie chart** is a type of graph in which a circle is divided into slices to illustrate numerical proportion. Data from each segment are usually represented by percentages.

  A **diagram** is a chart or drawing that explains something by showing how the parts relate to each other.

These can be further **separated into groups,** such as Marketing, Business and Finance, Engineering and Technology, History, Political Science and Sociology, Science, Health and Wellness, Meteorology and Environment.

How do you know **what kind of chart to use** when presenting data, when there are so many types? To figure out what to select, you must have a good understanding of the specific features of each type, but the rule of thumb is that if you cannot present your data in one or two sentences, then you need a **table**.

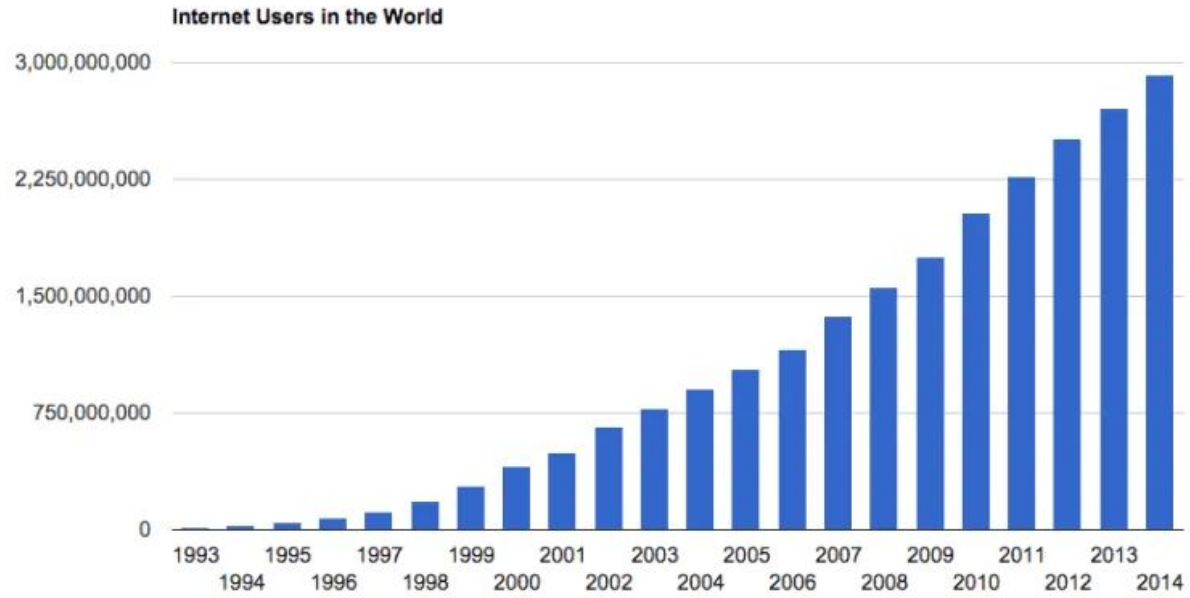
How to describe charts, graphs, and diagrams in the presentation
A chart is a graphical representation of particular data, which is commonly known as a graph. This type of data representation can help the audience to better understand what you want to clarify. But for the audience to understand, you have to describe it properly.
First, you have to capture everyone's attention - you can do that by using the following **phrases for introduction:**

Let me show you this bar graph…
Let's turn to this diagram…
I'd like you to look at this map…

If you look at this graph, you will notice…
Let's have a look at this pie chart…
If you look at this line chart, you will understand…
To illustrate my point, let's look at some charts…

Since there are many types of charts, there are also many **ways to describe them**. But the most important thing, that applies to all of them, is to identify all of the visual elements (*e.g. The vertical axis shows… The horizontal axis represents…This curve illustrates…*)

Graph description example



Let's have a look at this bar chart, it shows the number of users of the Internet from 1993 to 2014. On first look, we can tell that the Internet is becoming more and more popular every year.

If we look at the number representing the year 1993, the number is significantly smaller than the number of users in 2014. It is expected that the number of internet users will grow even further. In the first years of the Internet, the number of users was growing significantly more slowly than in the last few years. From 2010 to 2014 the number of users has risen almost by a billion users.

To sum up, the Internet is becoming very popular. Currently almost half of the world population is using the Internet more often than ever before and those numbers are expected to grow even more as society is forcing people to use the Internet.