

# Graphic representations

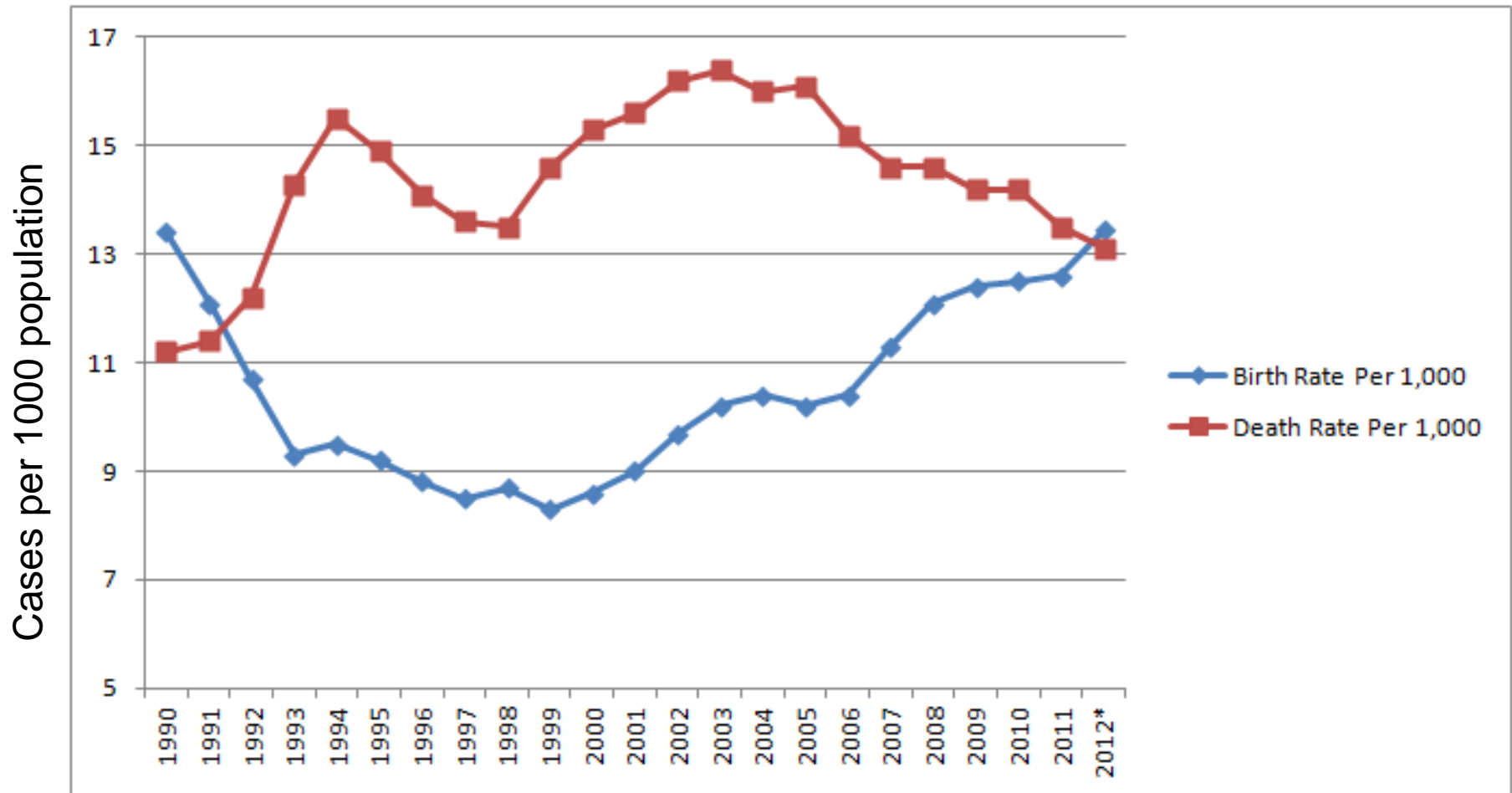
# Graphic representations :

- are used to enhance the visibility of statistical values
- can be constructed for absolute, average and relative sizes
- the choice of the type of graphic representation depends on the type of the described statistical value

# Rules of constructing of G.R.

- Each graphic representation should have a name (it is usually put under the image in the center).
- Each graphic representation should be constructed on a certain scale.
- Each graphic representation should have explanatory describing the applied coloring.

# Graphic representation



Dynamic of birth rate and death rate in Russia for period from 1990 to 2012 years

# Diagrams / Charts

**A diagram** is a symbolic representation of information according to some visualization technique.

**A chart**, also called a **graph**, is a graphical representation of data, in which the data is represented by symbols, such as *bars* in a *bar chart*, *lines* in a *line chart*, or *slices* in a *pie chart*.

**A chart** is a type of diagram or graph, that organizes and represents a set of numerical or qualitative data.

# Chart's classification

## **1) By form:**

- Line
- Plane
- Volume

## **2) By appointment:**

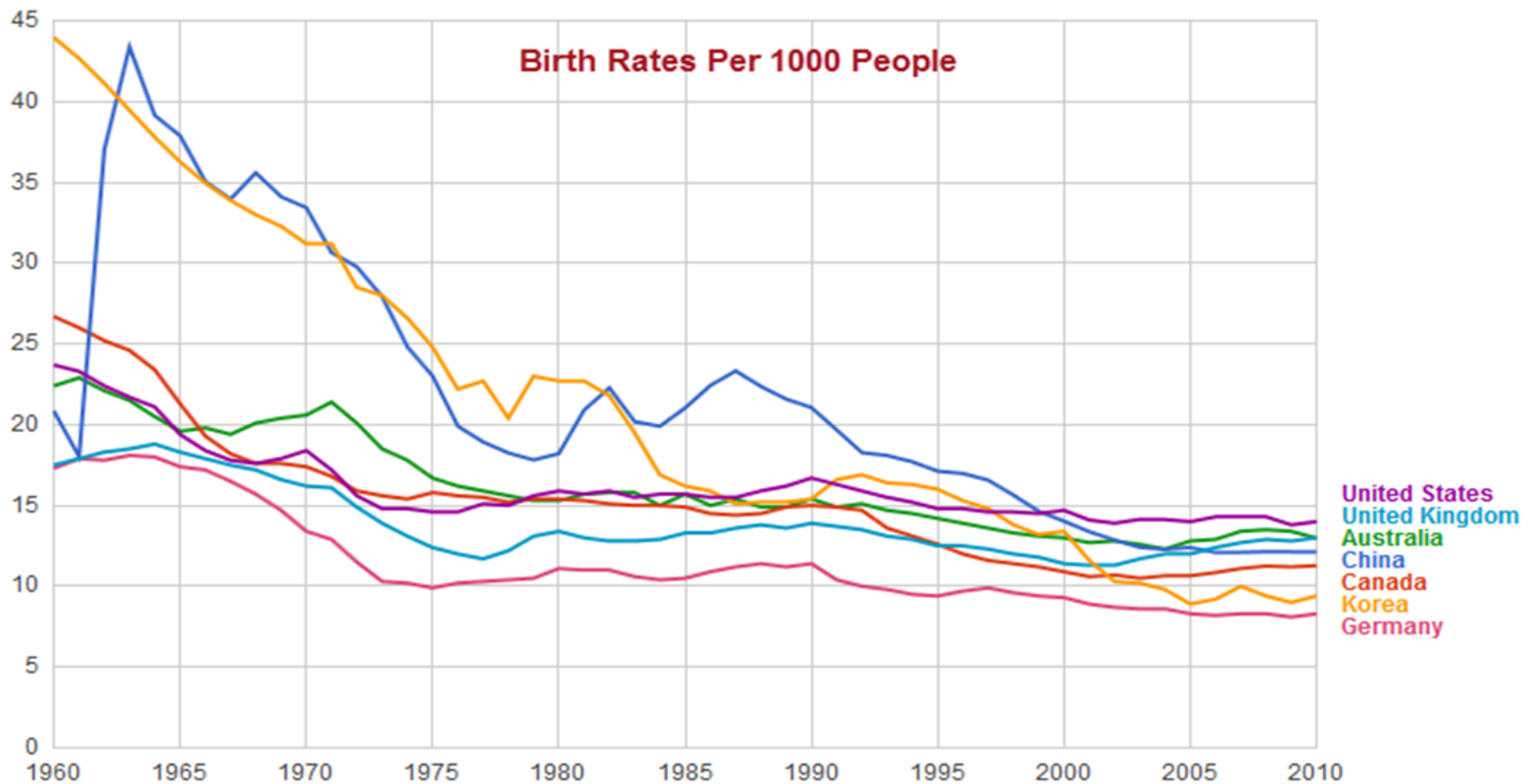
- Comparison charts
- Structural charts
- Dynamic charts

# Common chart's types:

- **Histogram**
  - **Bar chart**
  - **Pie chart**
  - **Line chart**
  - **Radial chart**
  - **Box-plot**
- and others...

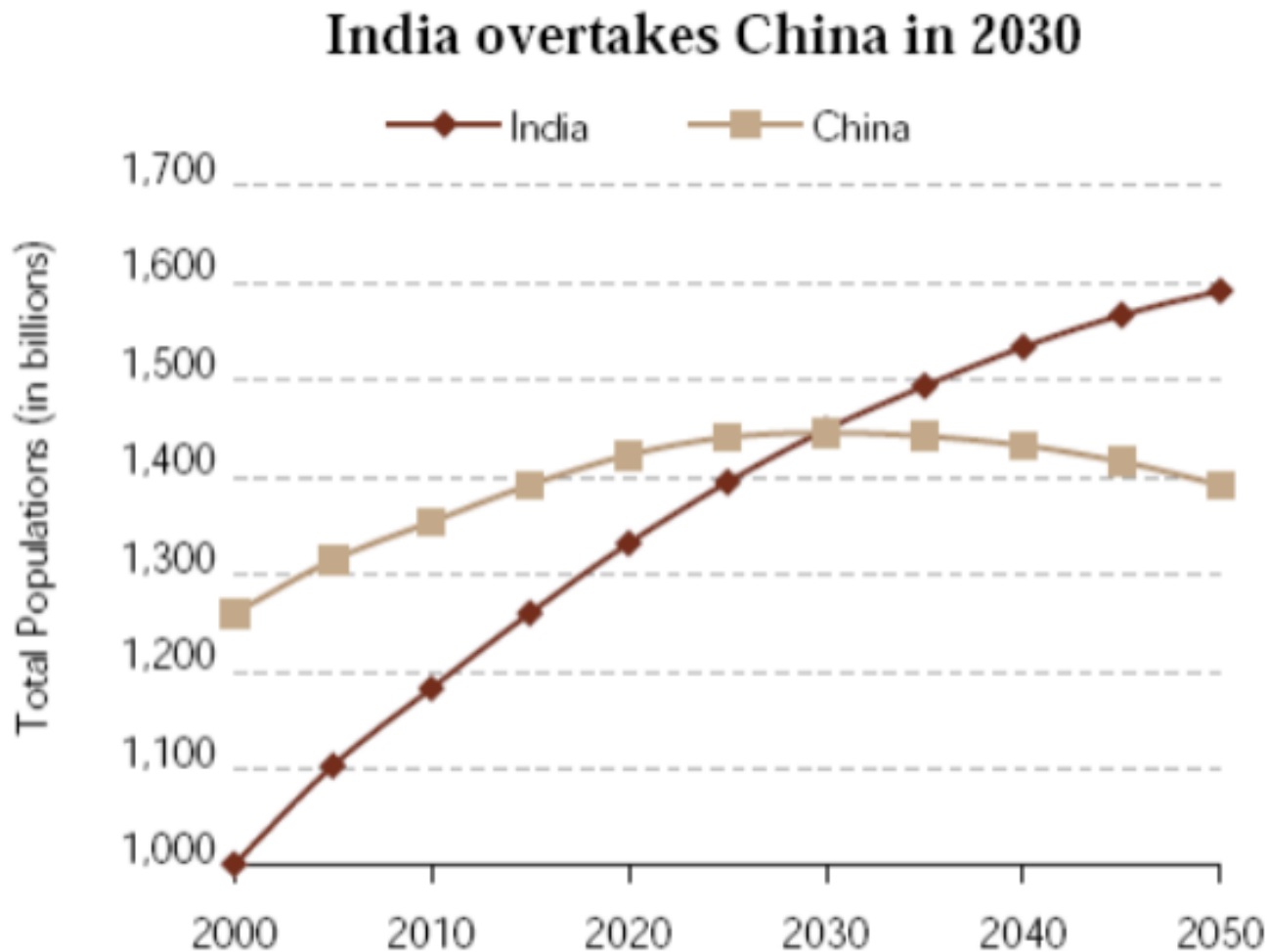
# Line charts

- Are used when we want to show the phenomena in dynamic





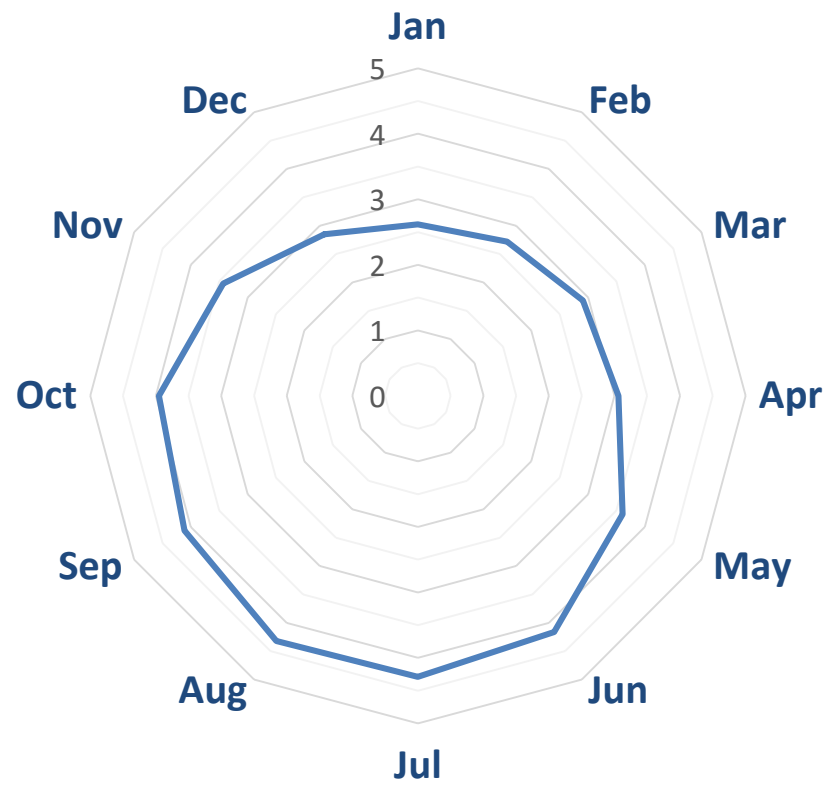
# Dynamic line chart can include expected values



*Source: UN Population Division: Medium variant*

# Radial charts

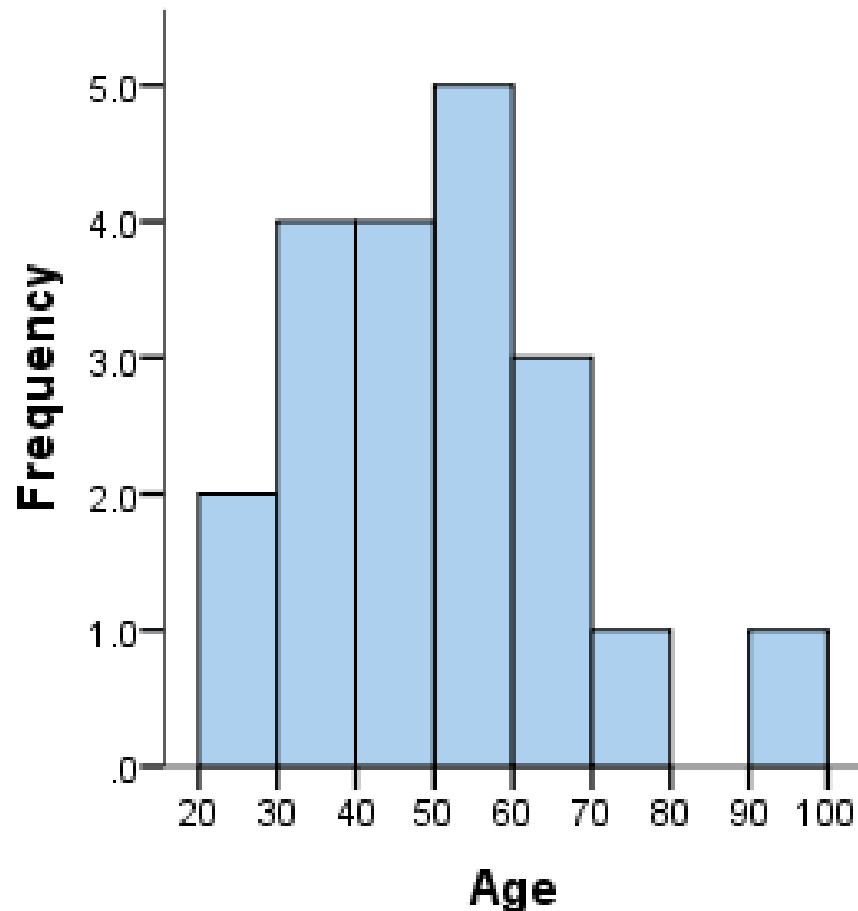
- Are used for represent of seasonal changes in the phenomena for the cyclical time period



**Incidence of Dysentheria, per 100 000 population**

# Histograms

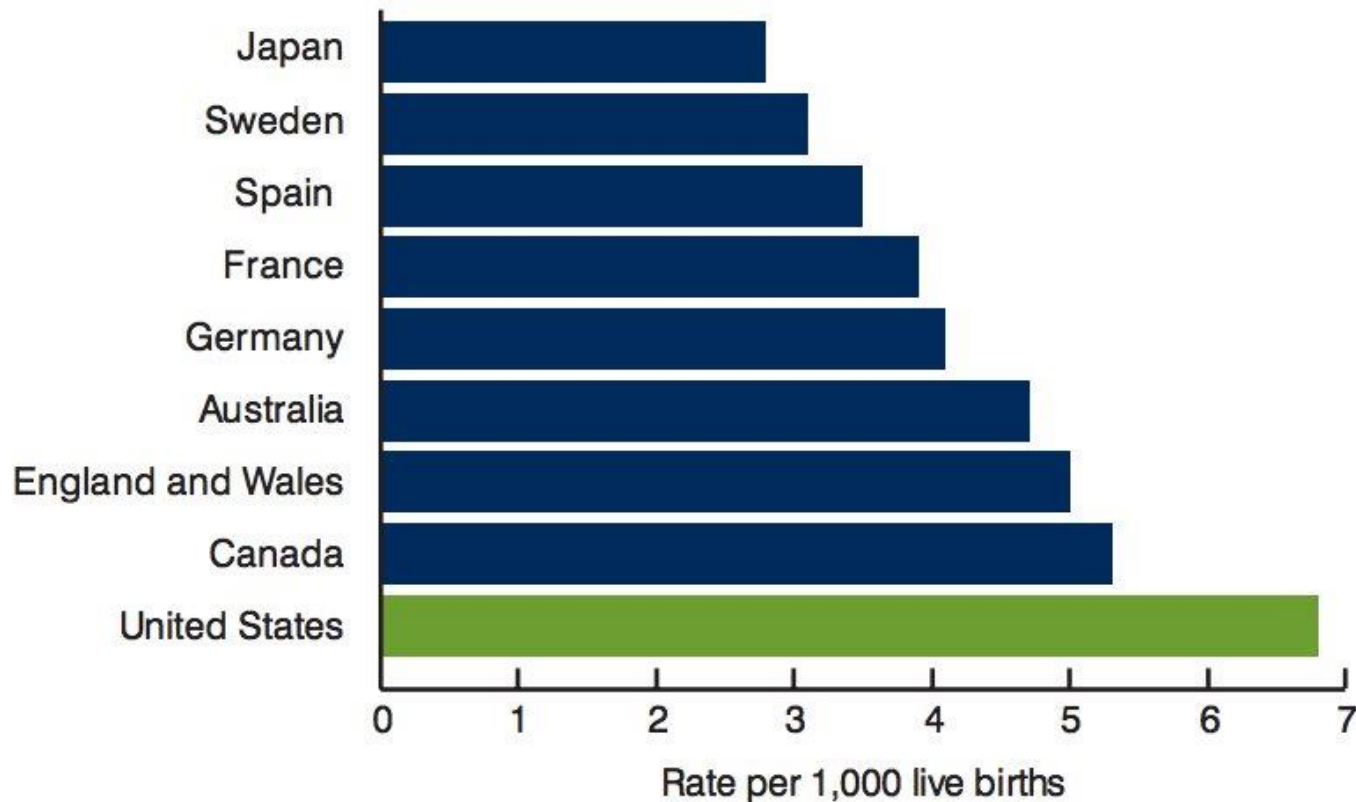
- The columns are positioned over a label that represents a quantitative variable.
- The column label can be a single value or a range of values.



Bin	Frequency	Scores Included in Bin
20-30	2	25,22
30-40	4	36,38,36,38
40-50	4	46,45,48,46
50-60	5	55,55,52,58,55
60-70	3	68,67,61
70-80	1	72
80-90	0	-
90-100	1	91

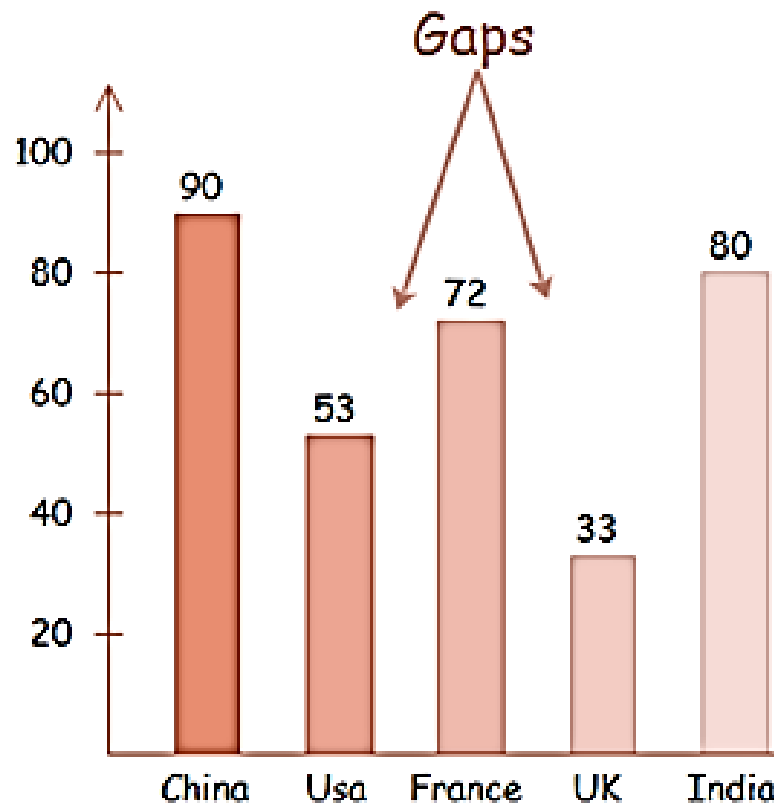
# Bar charts

- The columns are positioned over a label that represents a categorical variable.
- The height of the column indicates the size of the group defined by the categories



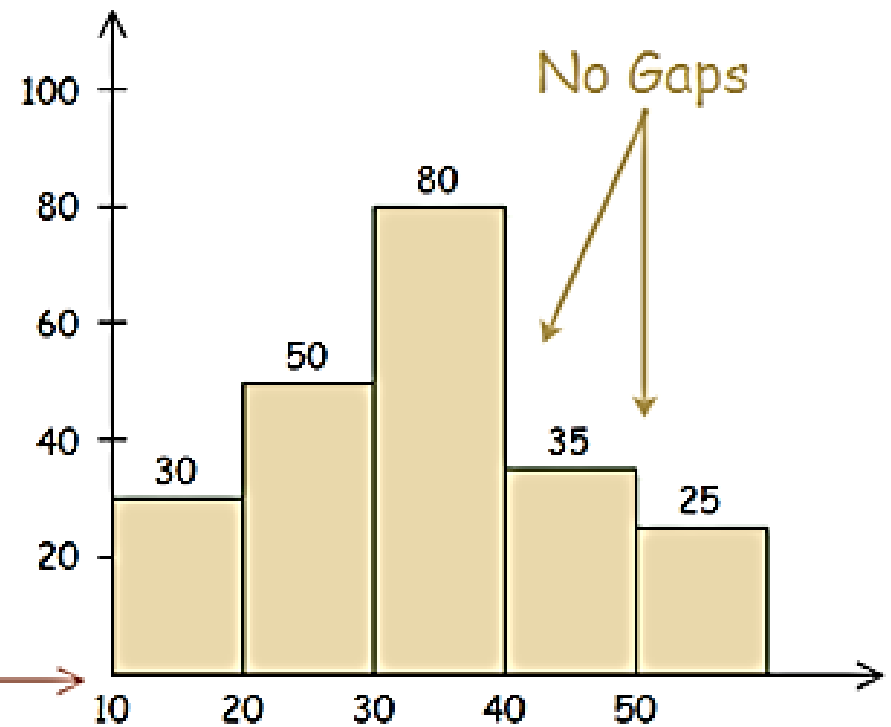
**Infant mortality (Rate of infant death), per 1000 live births**

# Difference between Histograms and Bar charts



← Categories →

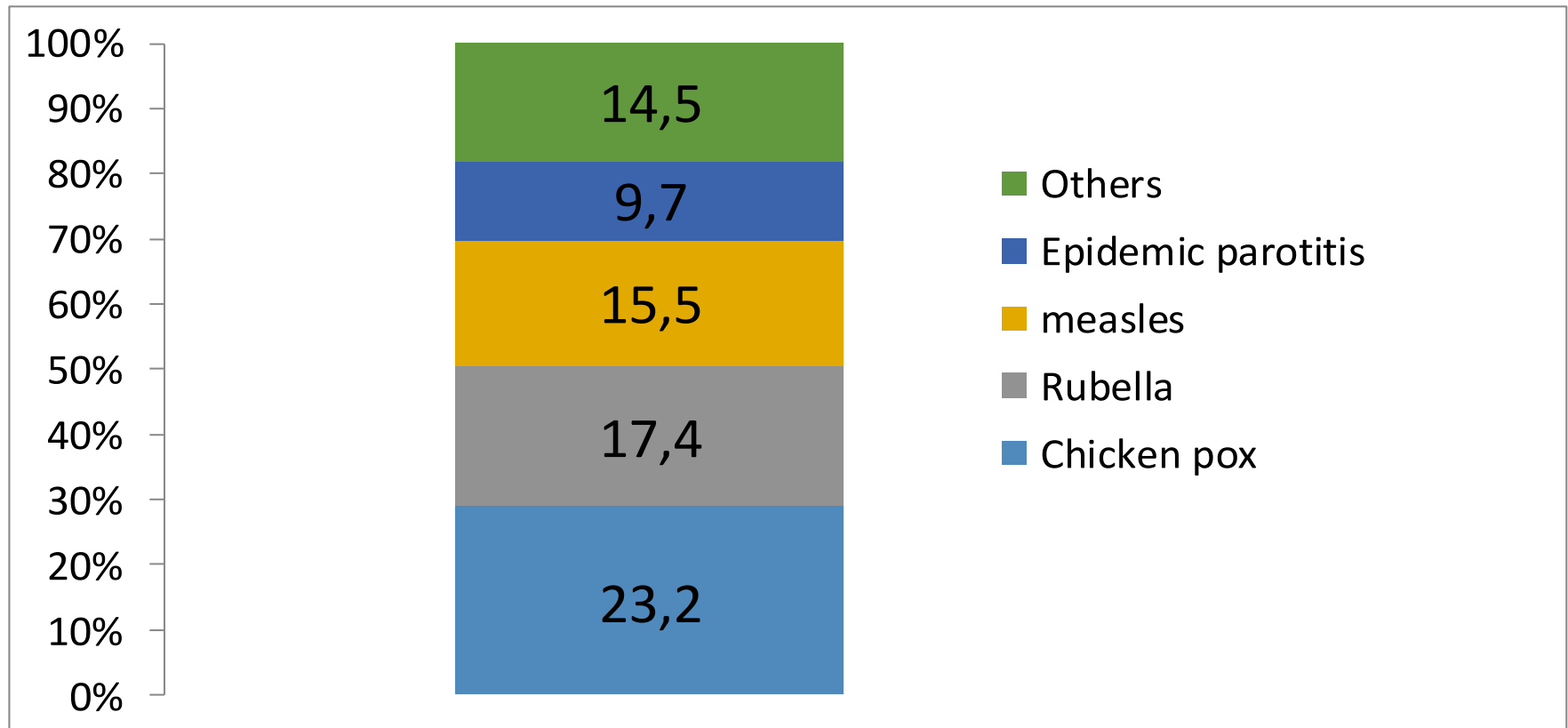
**Bar Chart**



← Number Ranges →

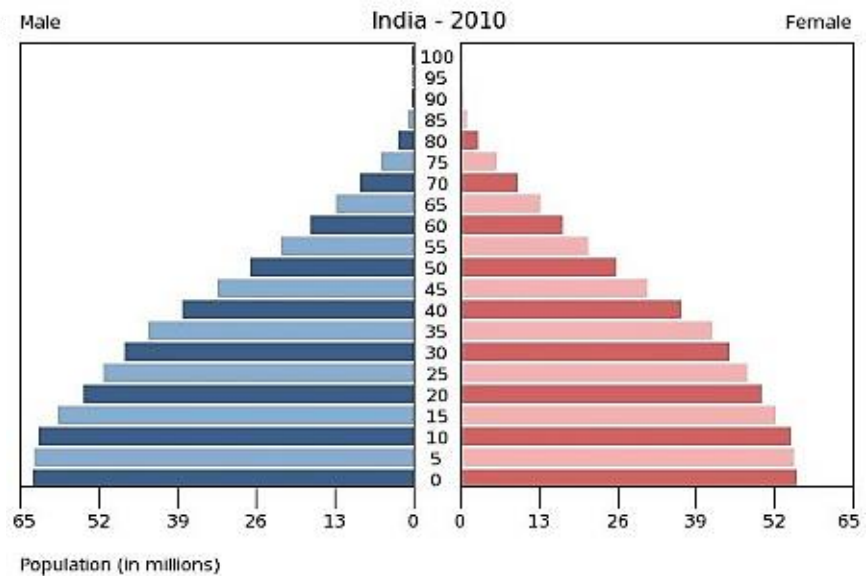
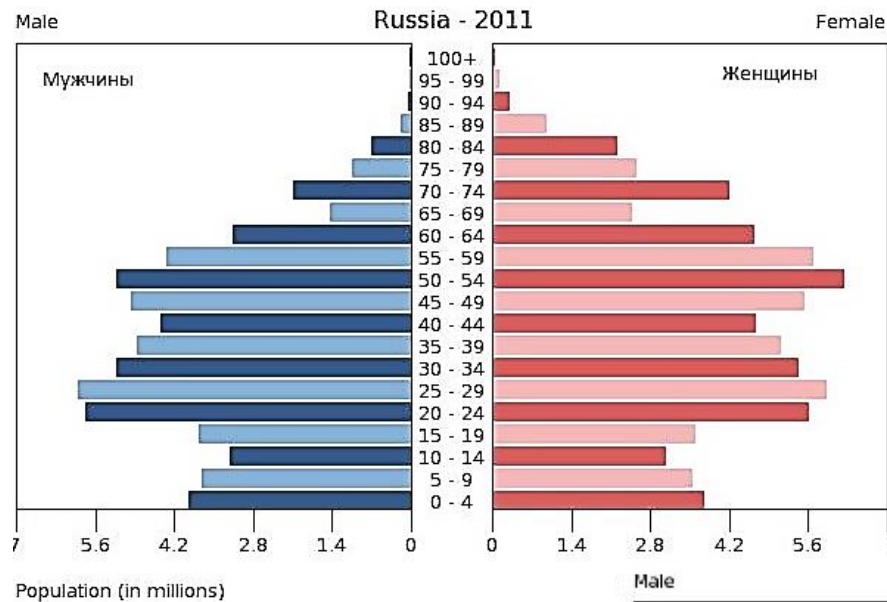
**Histogram**

# Stacked Bar chart

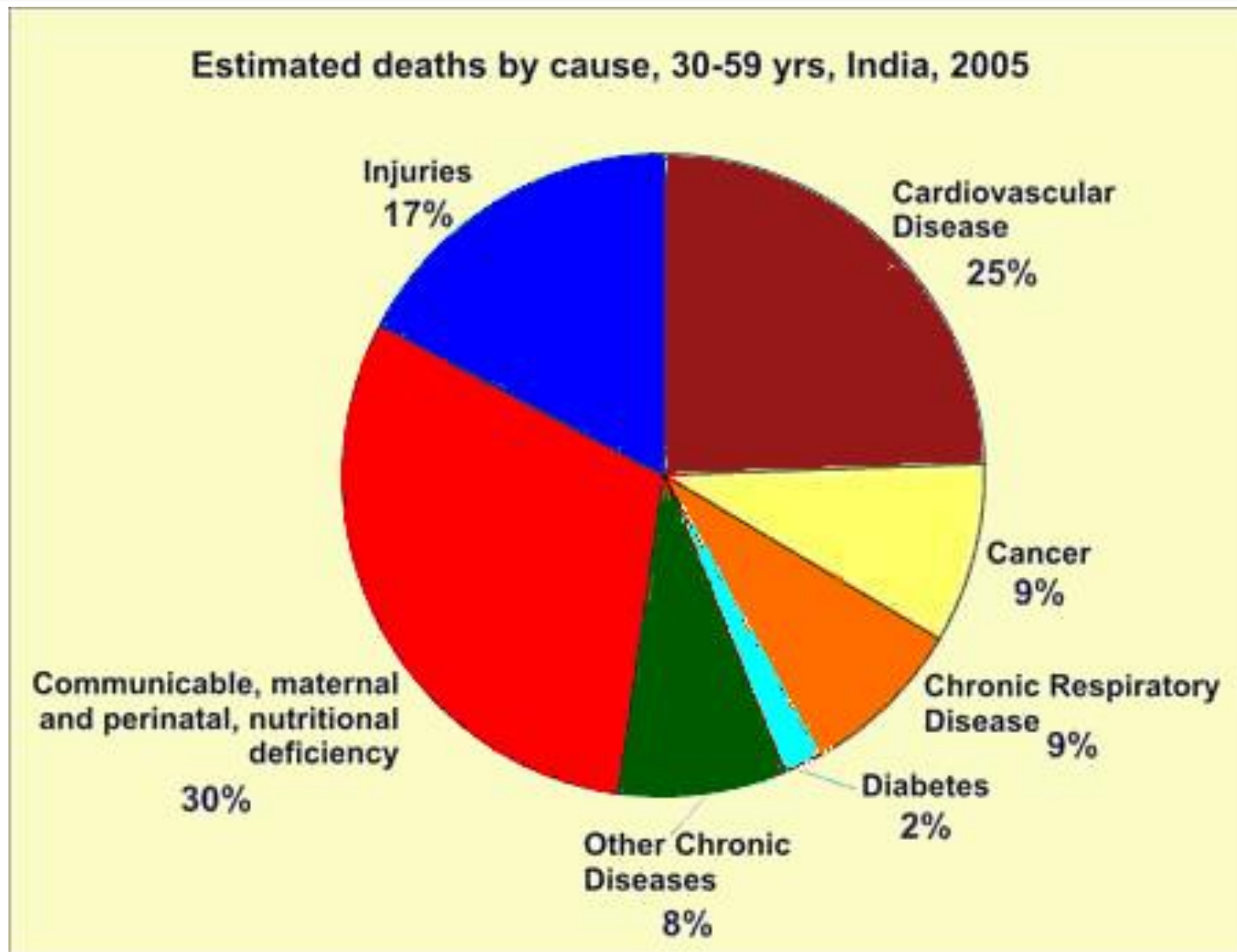


**Structure of children's infectious disease (%)**

# Population Pyramids

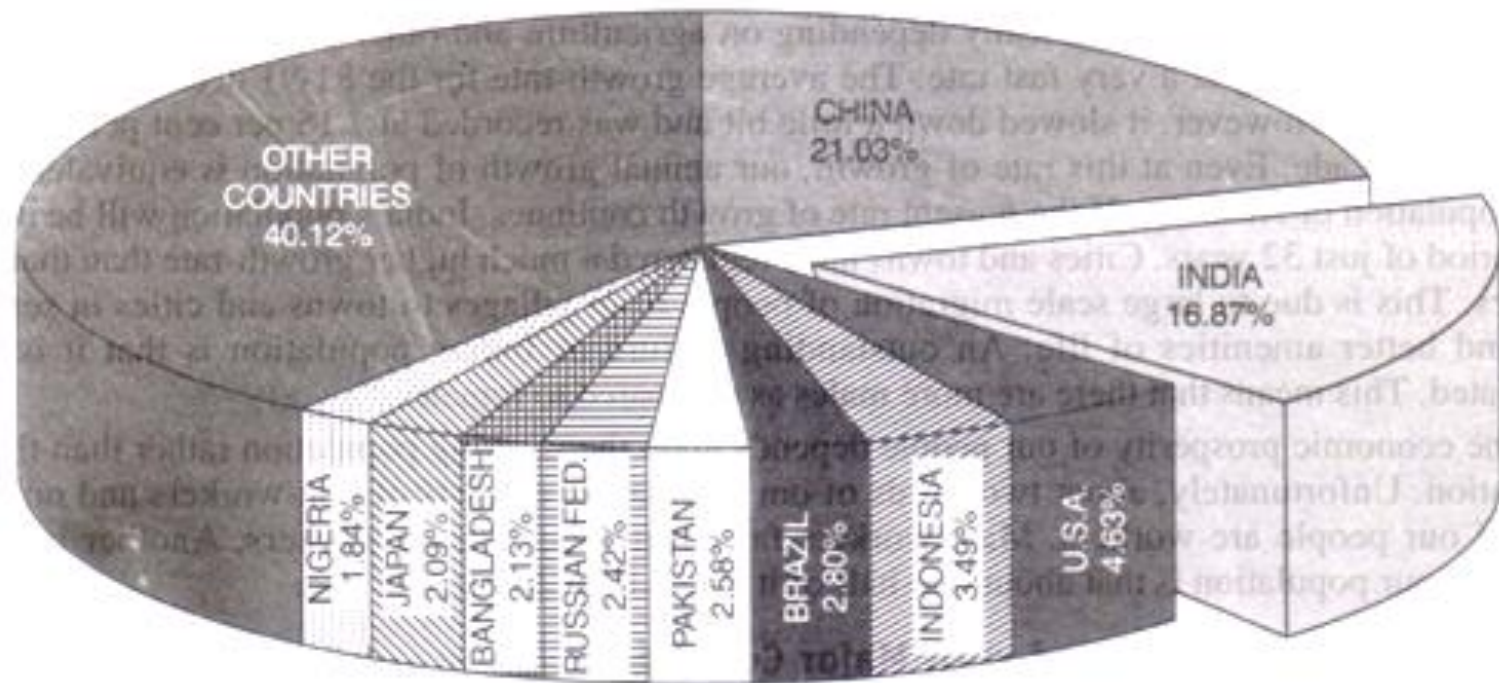


# Pie charts / Sector charts



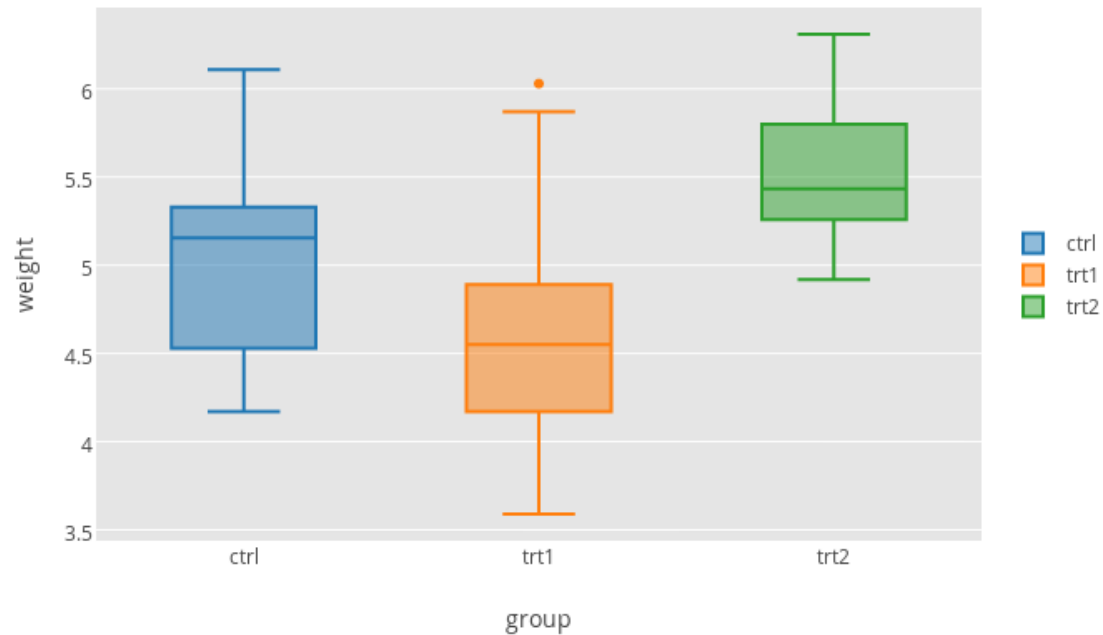
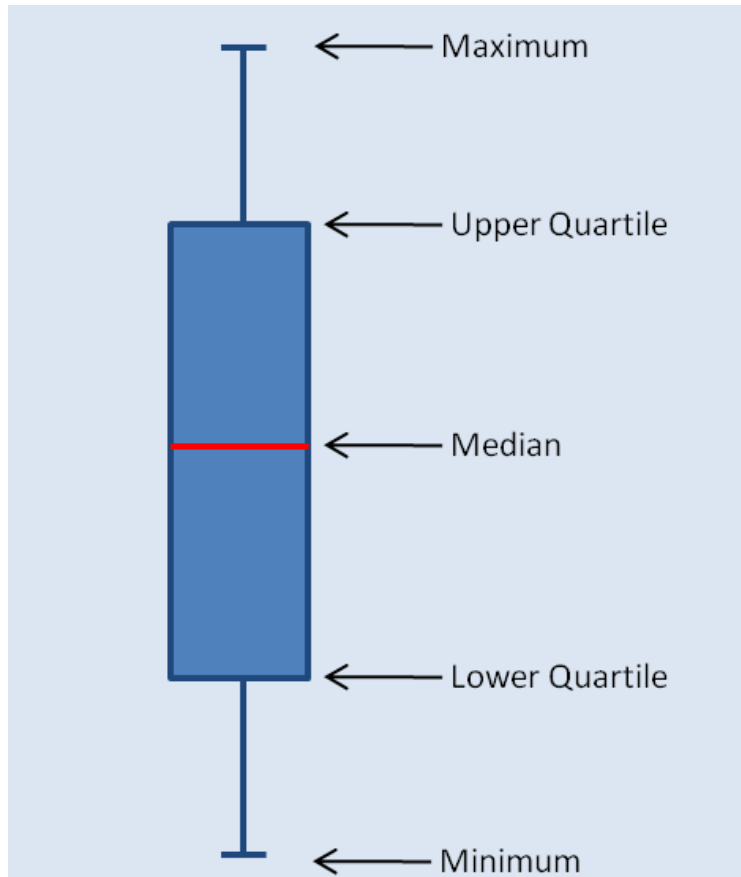


# Volume Pie Charts



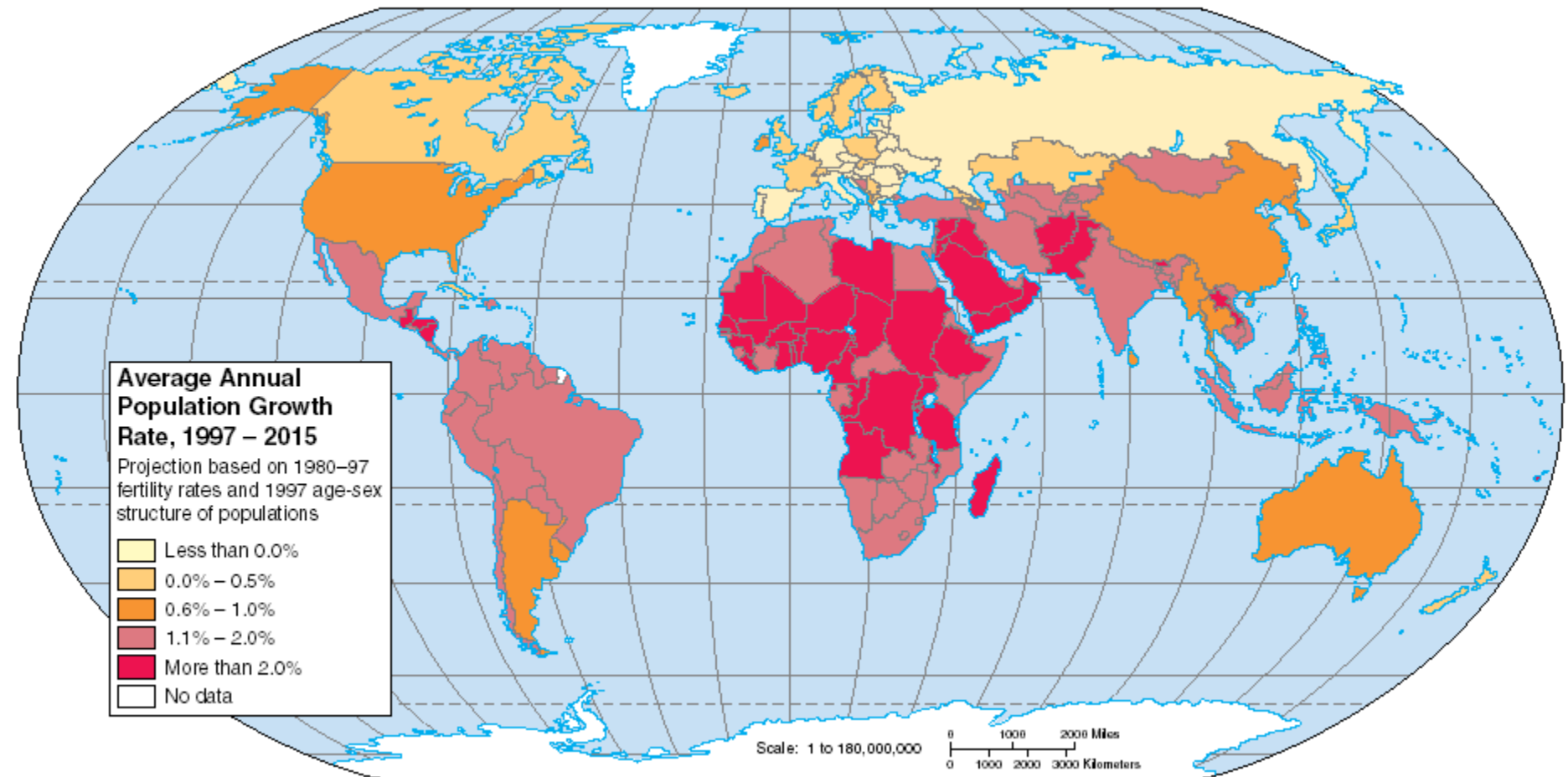
India in world population

# Box Plots

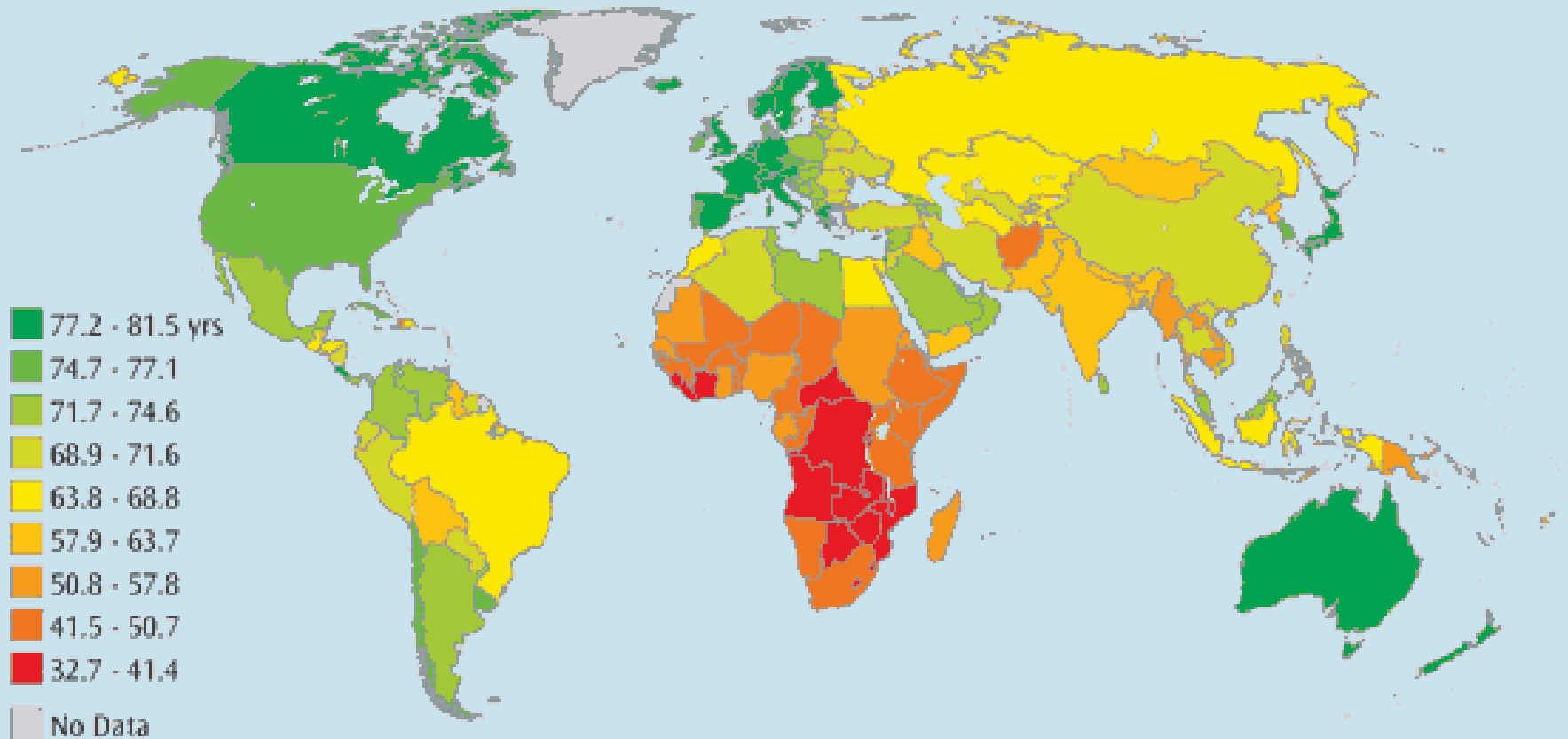


# Cartograms

- Are applied for represent of statistical values on a map by different colours or shading



# Cartograms



**Average life expectancy, years**