THEMATIC MAPS I

Thematic maps

- cooperation of a cartographer with an expert in the relevant field
- thematic maps as outputs from GIS databases

(often without cartographic knowledge!)

Two basic components of content:

- **topographic background**
- **thematic content**

Topographic background of thematic maps

- serves **for spatial localization of elements of** thematic content
- mostly contains **only topologically important elements** (management, communication, settlements, administrative boundaries and elements related to the theme of the map, e.g. elevations, cadastral boundaries)
- arises from the **generalization of map content** (topographical or generally geographical)
- in the legend it is usually placed at the end or may not be there at all

Topographic basis

may be

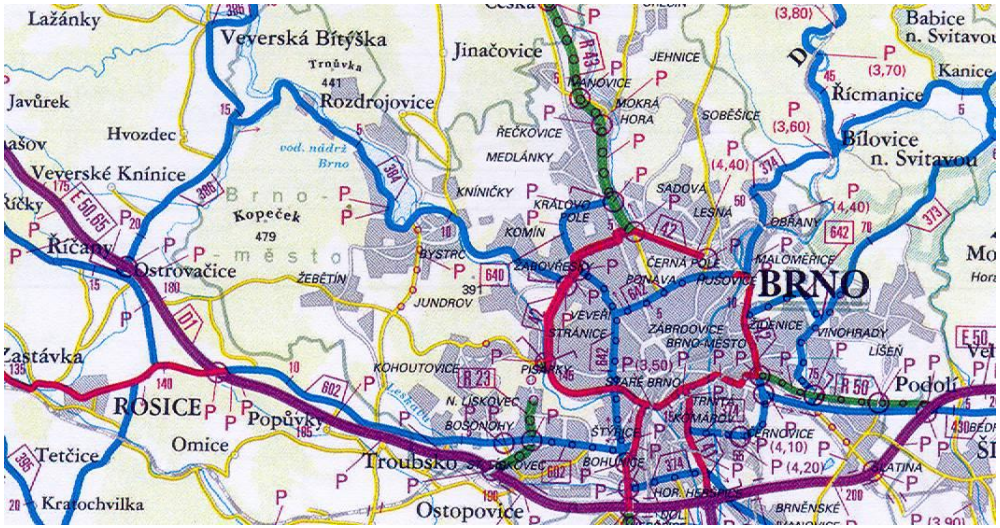
- topographic **map without any modification**
- map **in printed colors or black and white**
- a simplified **background made up of selected elements of the map content**

Thematic content

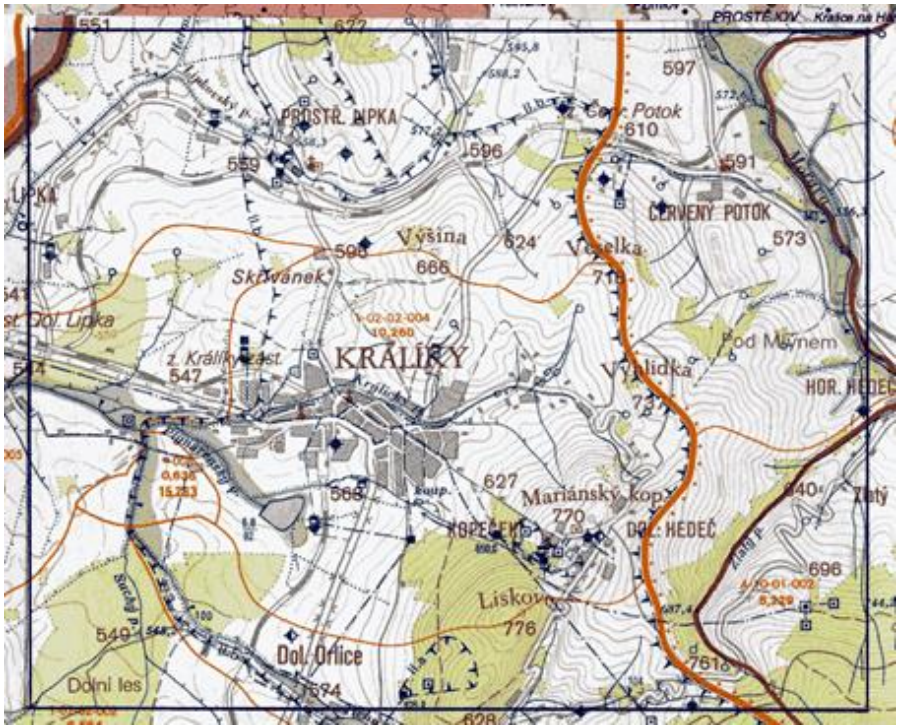
- specific forms of map language (mostly linked to statistical graphics)

They can create thematic content

- **selected elements of the topographic background** (e.g. vegetation) – emphasized and rendered in detail
- **phenomena detected by direct observation or investigation** in the field (including the results of statistical censuses), from interpretations of aerial or space images, etc.
- **knowledge obtained through scientific procedures** – analysis, synthesis, modeling, etc. (e.g. transport accessibility, soil erosion)



Basic road map
1:50,000



Basic water management map
1:50,000

Sorting thematic maps

By content:

- **maps of natural phenomena** (physical-geographical)

  e.g. geological, tectonic, seismic, pedological, geomorphological, speleological, meteorological, hydrological, geobotanical, zoogeographical, etc. maps.

- **maps of social phenomena** (socio-economic)

  maps of economic, mining, land use, price, forestry, road, railway, urban transport, tourist, orienteering, historical, population, political, land, etc.

Cartographic expression on thematic maps

The most used methods:

1) points (dots)

2) movement lines (vectors)

3) isolines

4) tables, graphs

5) diagrams, diagram maps

6) choropleths

7) anamorphoses

Points (dots)

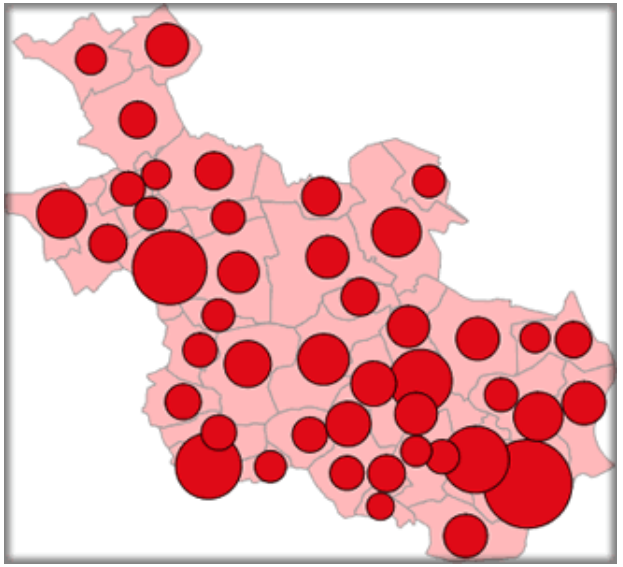
- they are used **to express relations of quantity, quality and density of** a spatially distributed statistical phenomenon
- **dot** as the **most frequently used character** (can also be squares, triangles, etc.)
- each **dot represents an elementary quantity**

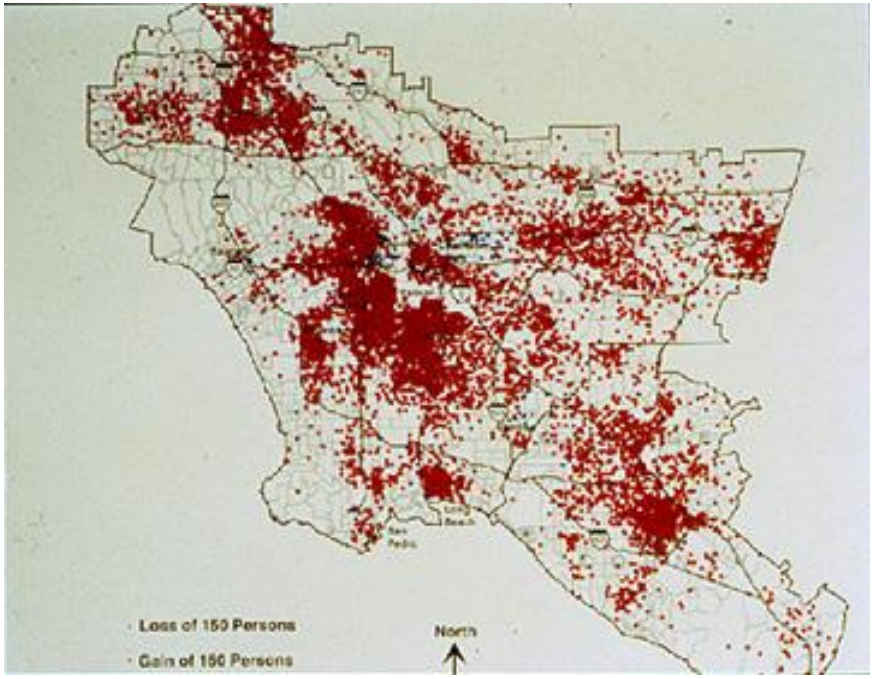
(e.g. 1 dot – 100 inhabitants)

- **the color of the dot can express quality** (e.g. nationality)
- **the distribution of dots** in the area of the map expresses

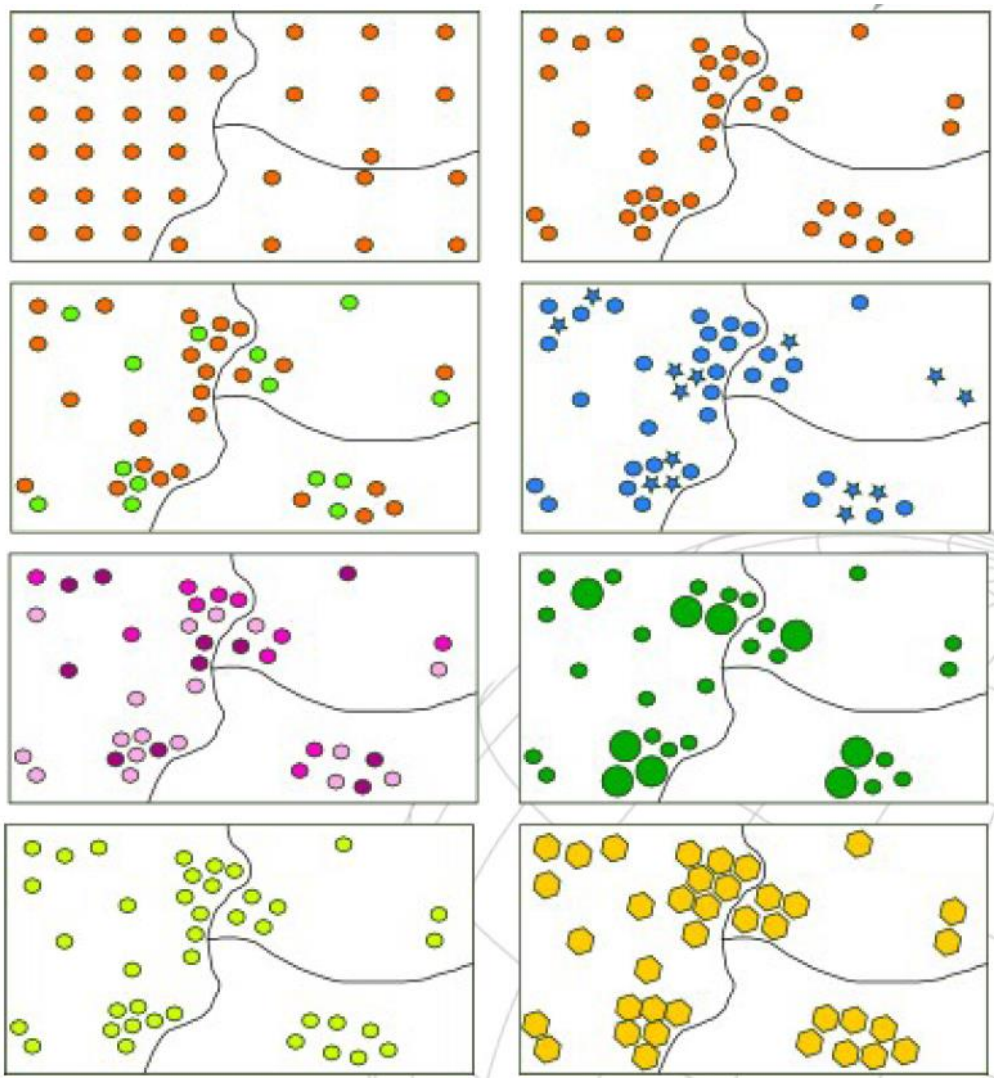
locally variable density of the displayed phenomenon

Dot method – examples





Method of dots – examples



Localization

Quality

Quantity

Face

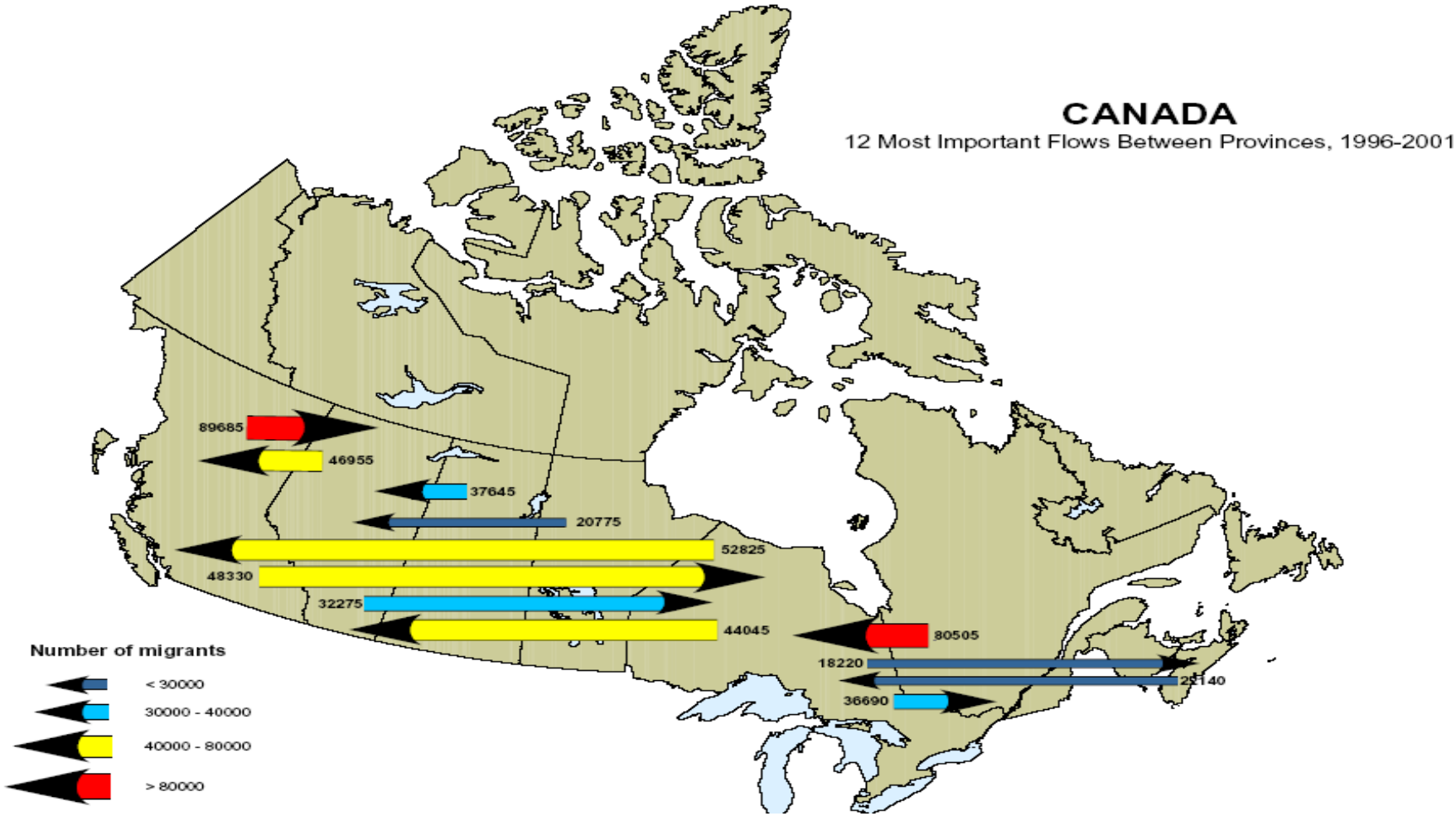
Movement lines (vectors)

- they express **movement in the area**, prevailing **trends movement,** possibly its **intensity and quality**
- motion marker (vector) – **usually an arrow**

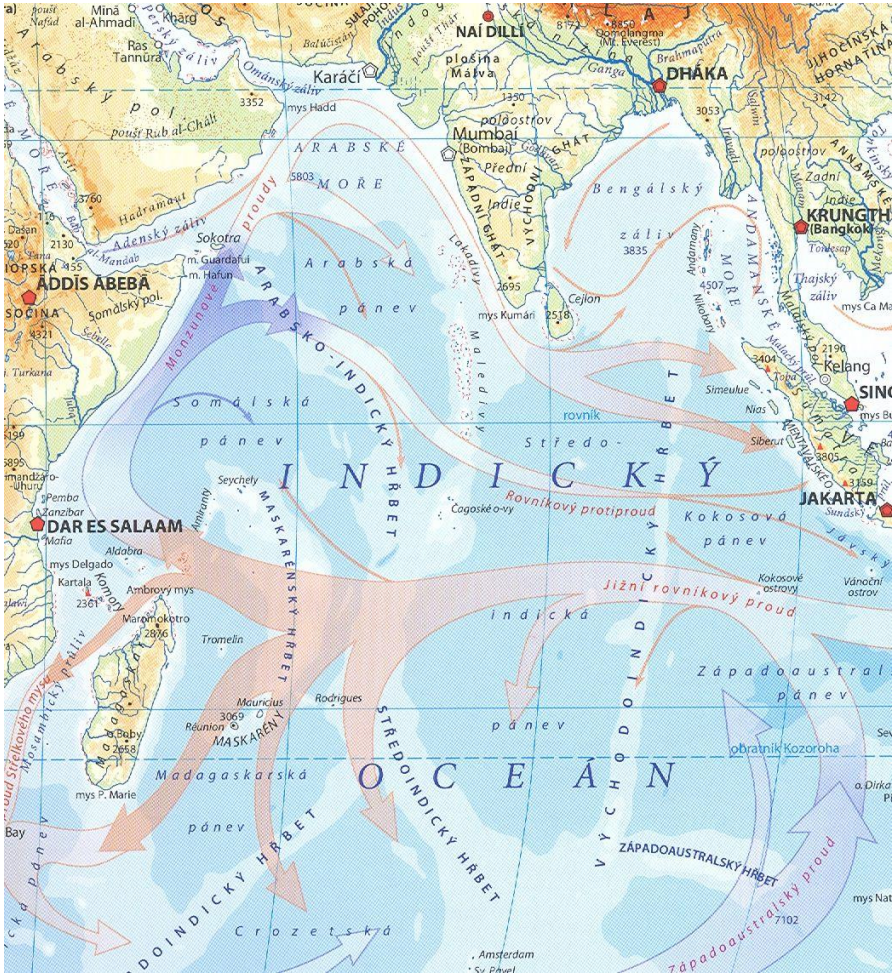
in various graphic designs

- arrow **orientation** – **direction of movement**
- **length or width of** the arrow – **intensity/quality of the** phenomenon
- **color** – **quality** (e.g. warm sea currents red, cold blue)

Movement lines (vectors) – example



Movement lines (vectors) – example



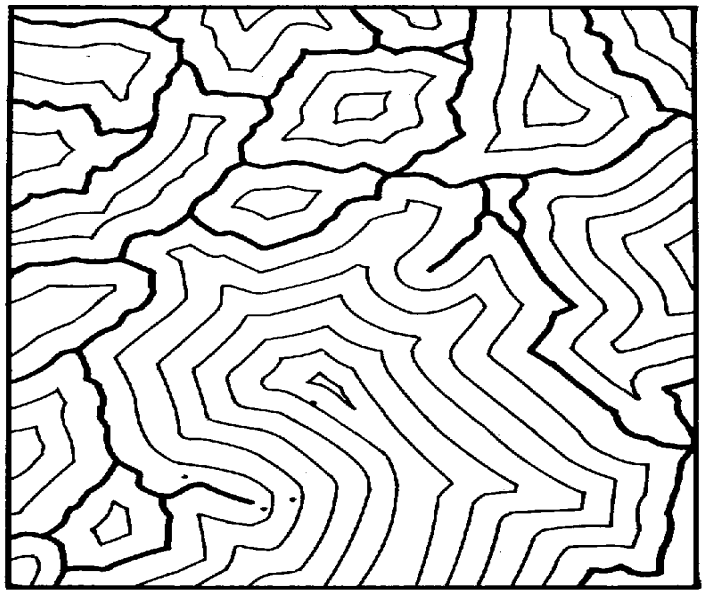
Isolines

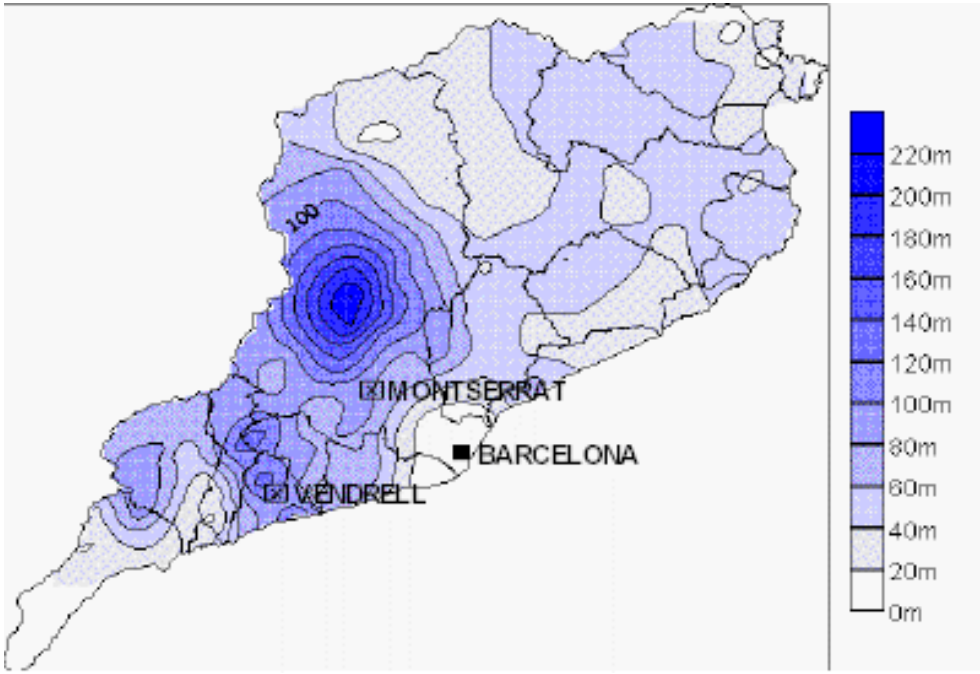
- lines connecting places with the same value of the monitored quantity
- visualization of isolines can be solved by computer
- use usually for the interpretation of natural phenomena

eg: **isotherms** (temperature), **isohyets** (total precipitation), **isochrones** (time – same time availability of the center), **isobars** (pressure), **isohypses** (altitude – also known as contours), **equideformats** (cartographic distortion), etc.

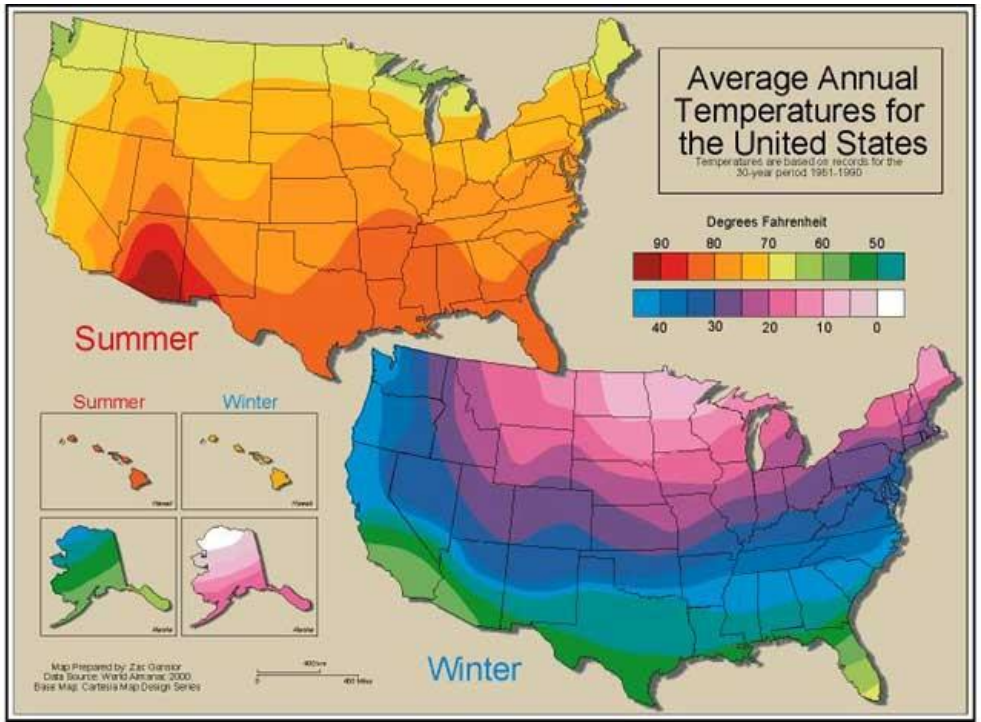
Isolines – examples

equidistants



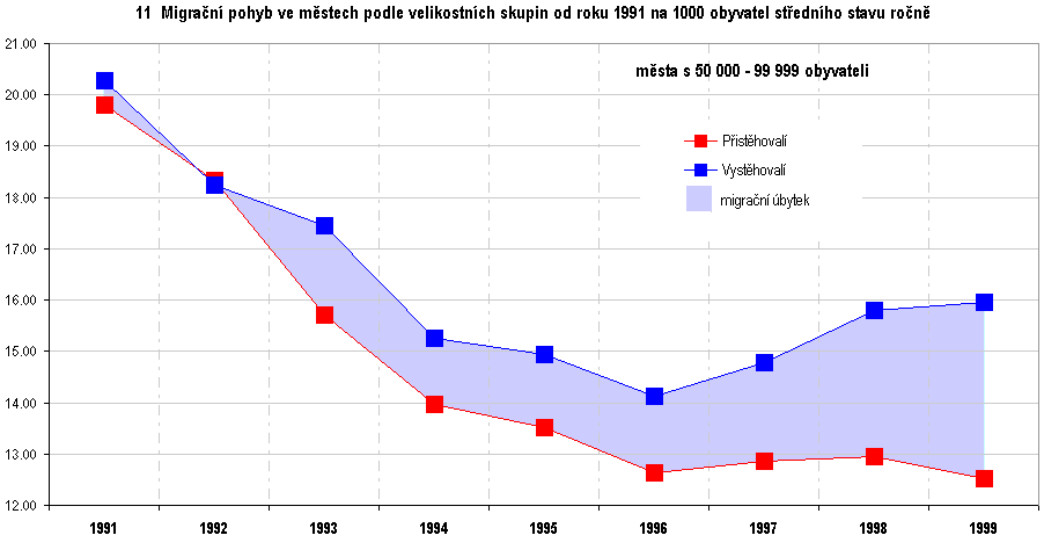


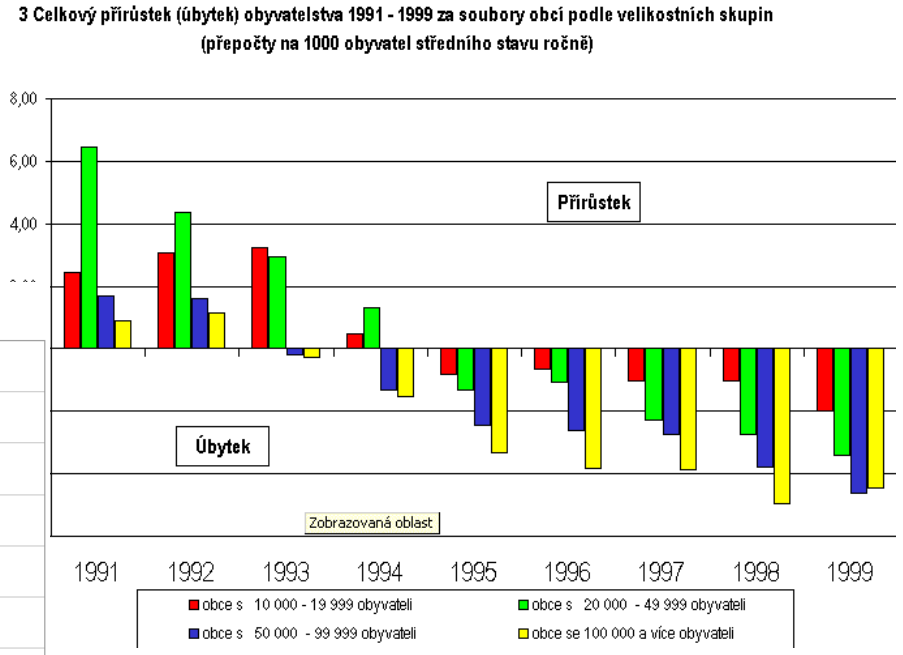
colour hypsometry



Tables, graphs

- often found in thematic maps
- **Tables** – clear, systematic
- **Graphs** – line, column
- simple, complex, structural
- polar chart



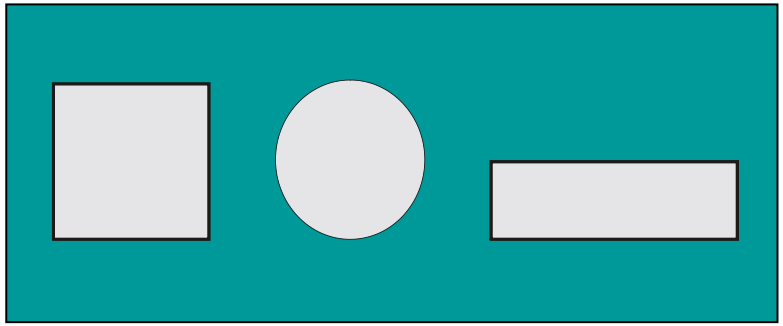


Diagrams, map diagrams

Diagram

– a more complex form of graph, quantitative characteristics are displayed on the surface of a planar (geometric) figure

- **circle** (square, rectangle, triangle)



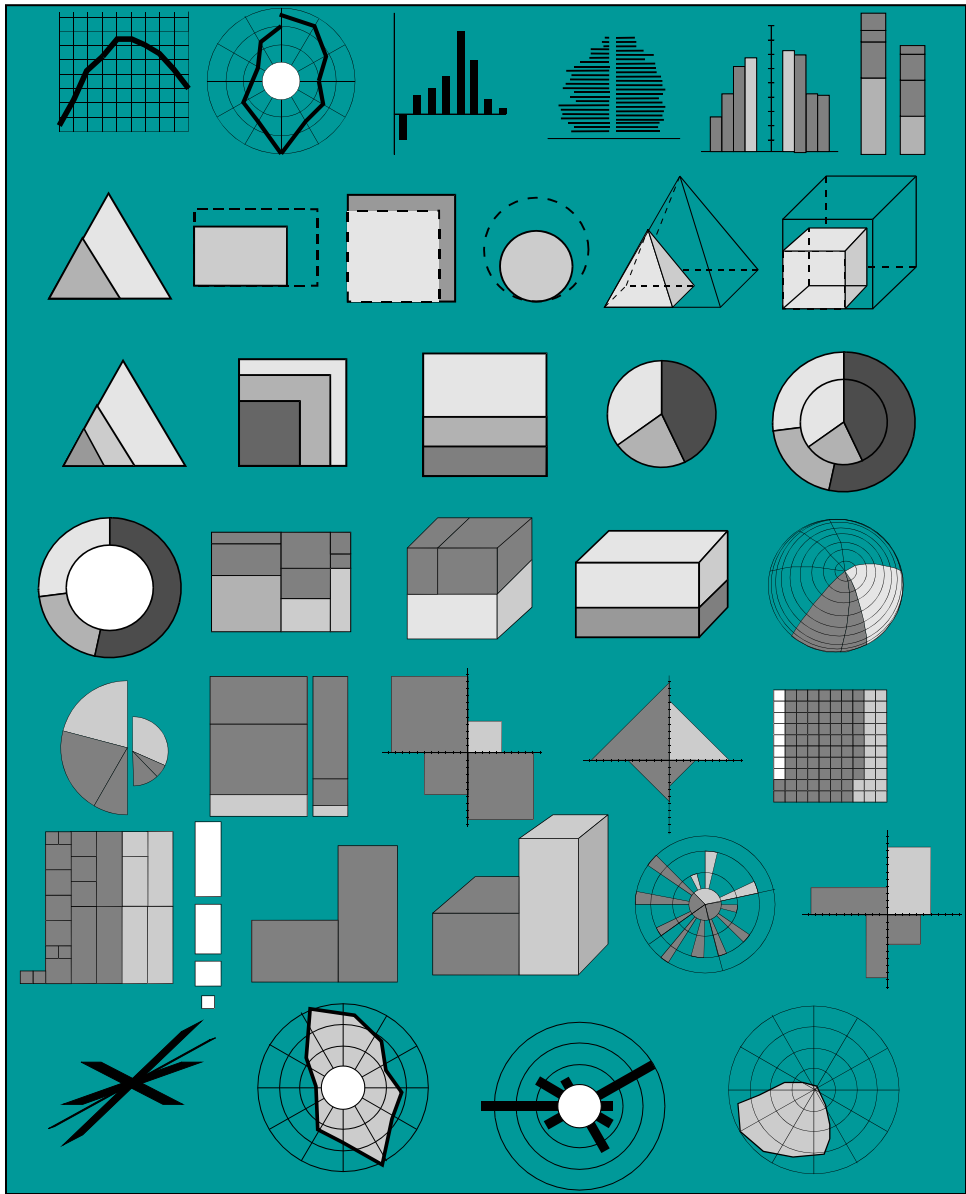
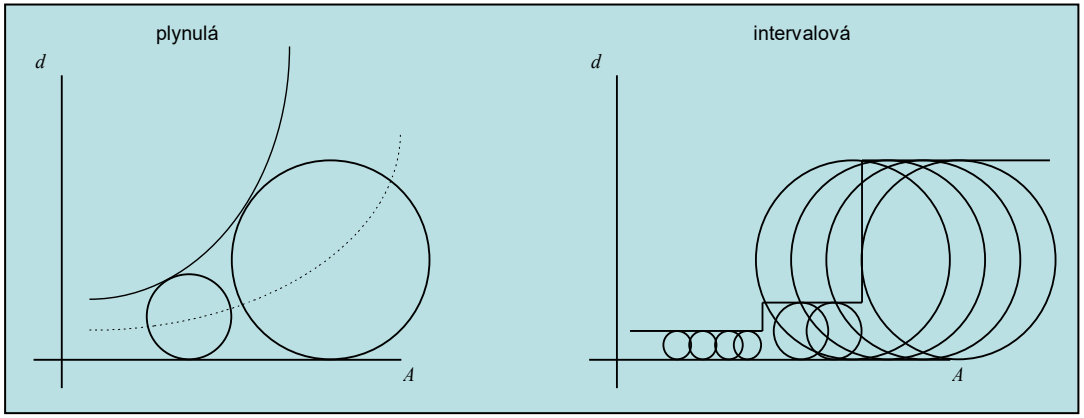


Diagram map

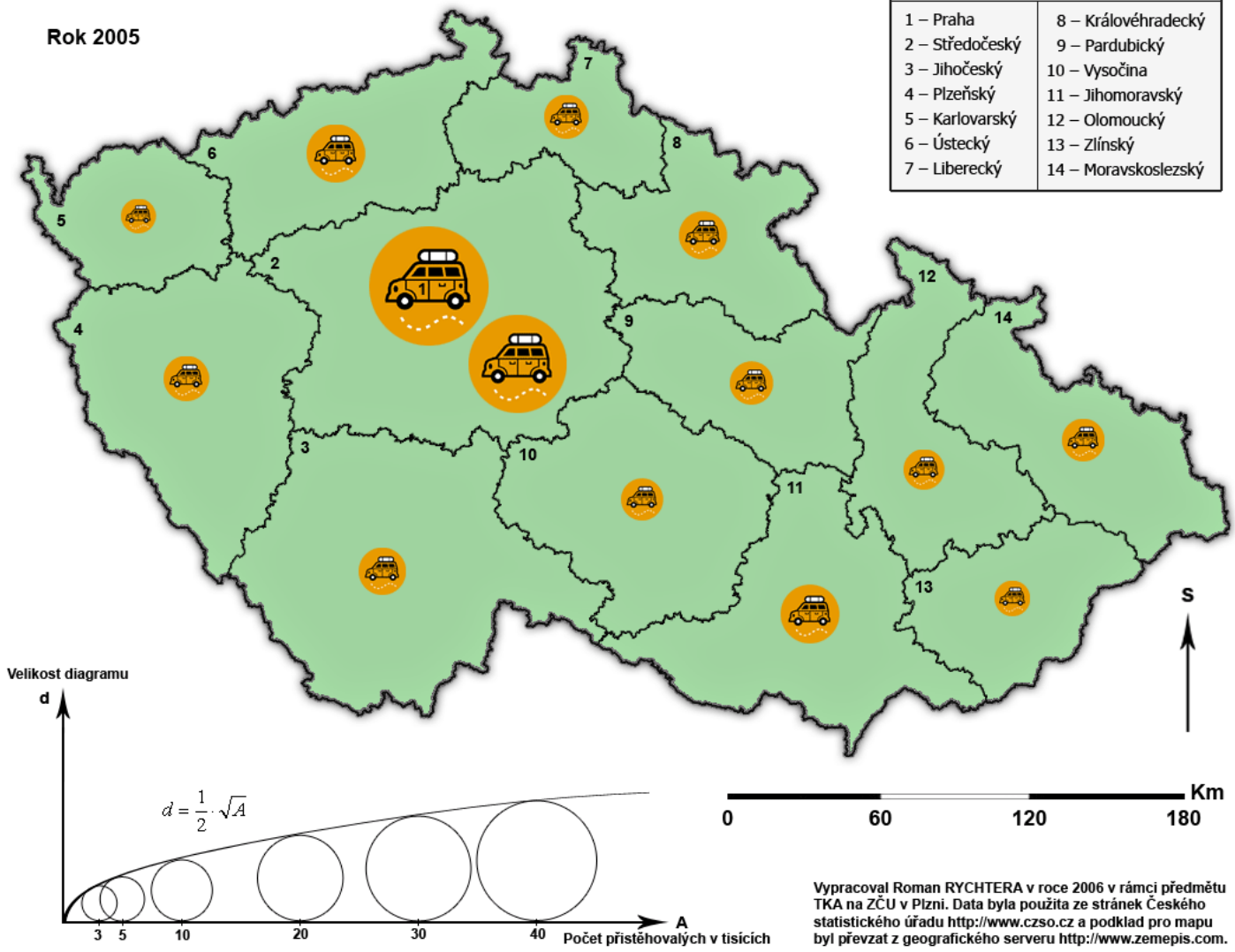
- a map with sub-territorial units into which **statistical data are shown using diagrams** (mostly **absolute values**)

- **the size of the** diagram character represents a **quantity**
- the size scale can be continuous or interval



- the structure of the monitored phenomenon can also be expressed (**structural diagrams**) or two independent quantities can be displayed (**comparative pie charts**)

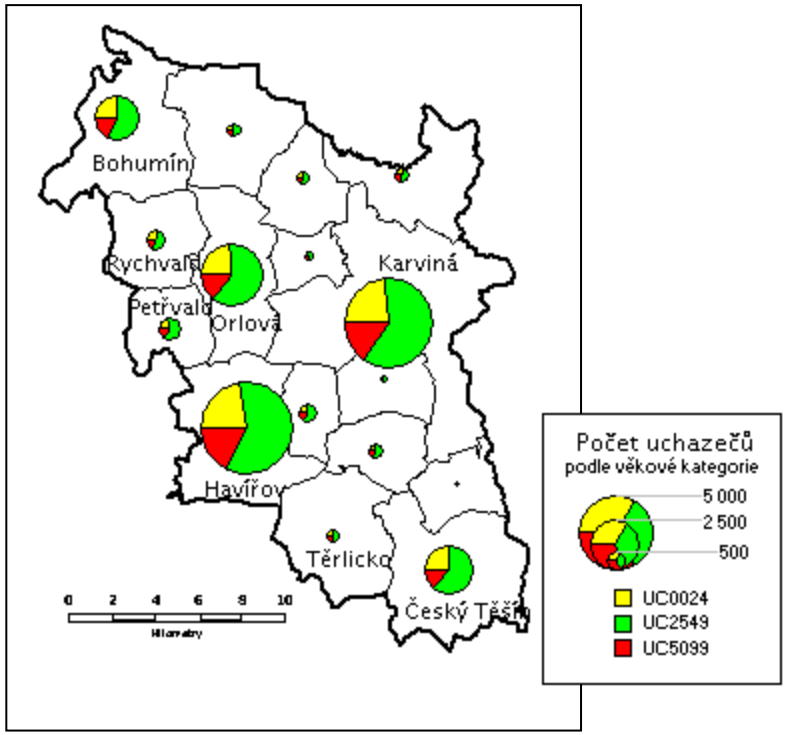
Přistěhovalí do krajů ČR v roce 2005



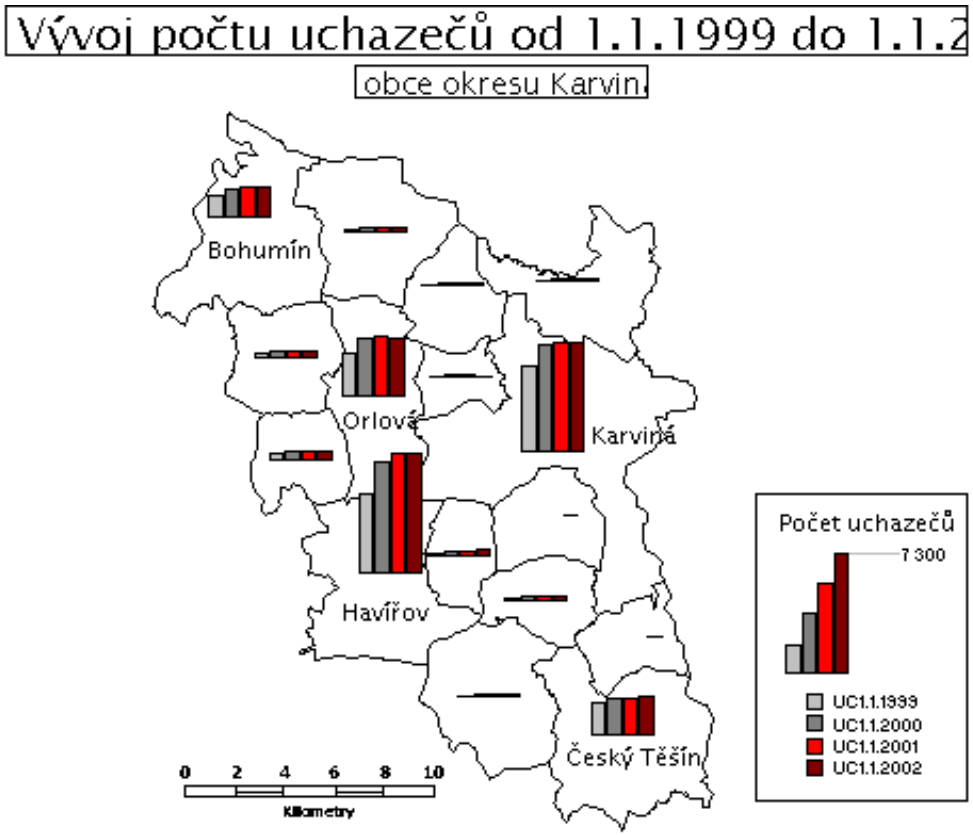
Vypracoval Roman RYCHTERA v roce 2006 v rámci předmětu TKA na ZČU v Plzni. Data byla použita ze stránek Českého statistického úřadu http://www.czso.cz a podklad pro mapu byl převzat z geografického serveru http://www.zemepis.com.

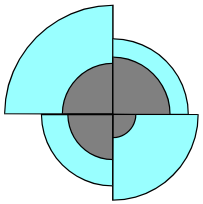
Diagram maps – samples

structural map diagram



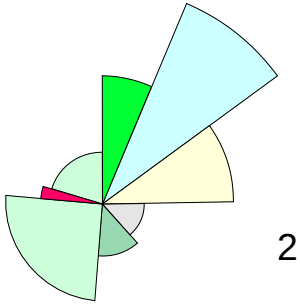
bar chart



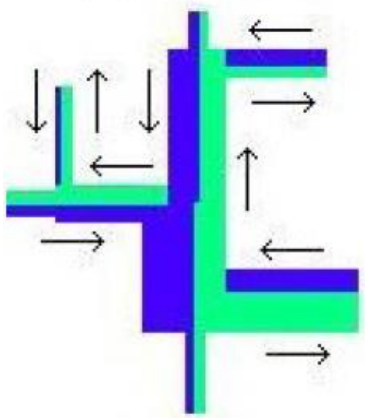


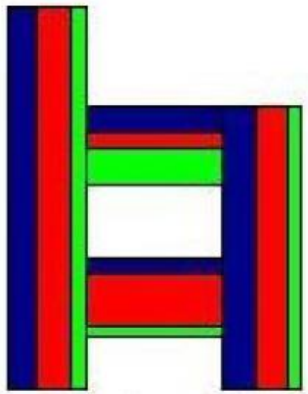
total diagram

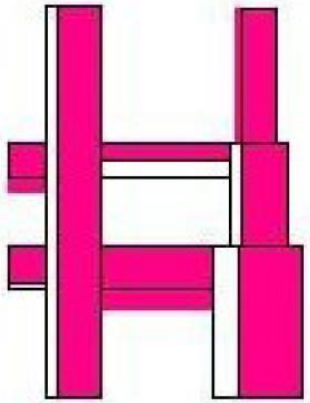
sliced diagram



linear diagram maps







Thank you for your attention

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