

# Why use GIS?

Because GIS answers questions like:

- ▶ **location** : Where is it? What is found in ...?
- ▶ **condition** : the location given by the condition: What is in the area within 20 km of the given city?
- ▶ **trend** : How has the population in the village changed over the last 20 years?
- ▶ **travel connection** : What is the shortest route from .. to..?

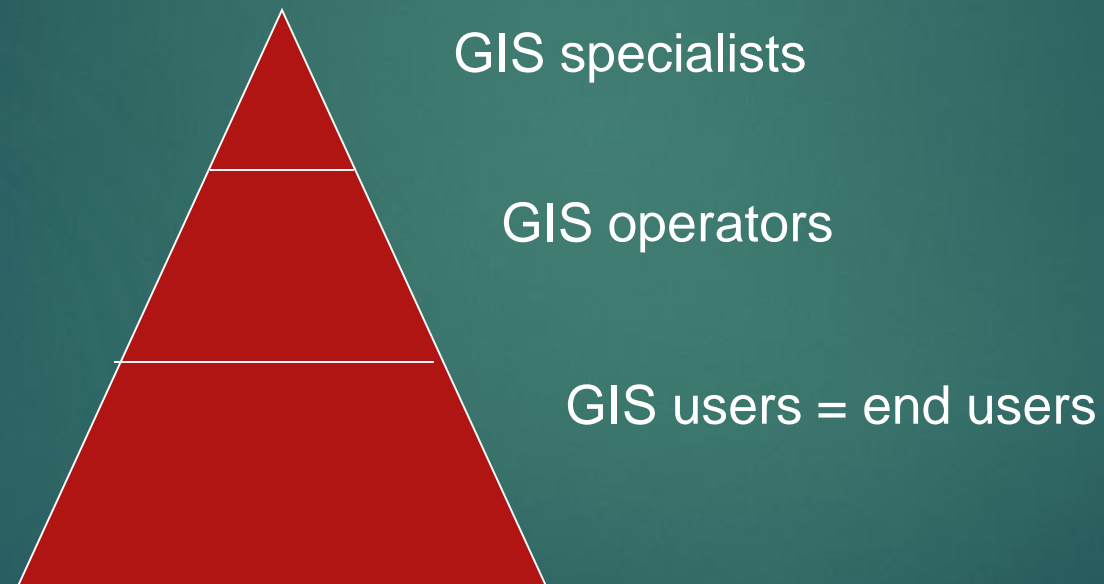
# Why use GIS – continue

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- ▶ **structure** : what is the composition of the population in terms of education
- ▶ **modeling** : what areas will be without T-mobile signal when 1 transmitter goes down

# Users GIS - sample number

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# GIS history

Stages of development

# GIS history

## Stages of development

1. **The first pioneering period** - *the beginning of the 1960s - 1975*
  - ▶ the influence of pioneering personalities, universities and institutions - such as US Geological Survey
2. **The second period** - *1973 - to the beginning of the 80s*
  - ▶ unification of attempts and activities at the local level
3. **The third period** - *1982 - until the end of the 80s*
  - ▶ Commercialization
4. **The fourth period** - *90s*
  - ▶ great development of user usage,
  - ▶ standardization, building open systems (the OGC Open Geospatial consortium Consortium)
5. **The fifth period** - *the end of the 90s to the present*
  - ▶ web technologies, portals

# History of development

## The roots of GIS

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- accurate base maps developed
- development of cartographic techniques
- the development of statistical methods (*from the theory of true probability , which can be dated from*
  - ▶ work Pierre and de Fermat and Blaise Trapla (1654).
  - ▶ Christiaan Huygens (1657) treated statistics as a scientific concept ,
  - ▶ Jakob Bernoulli in his Ars Conjectandi (1713) and Abraham de Moivre v The Doctrine of Chances (1718) classifies statistics as a new branch of mathematics
- development of mathematical theory –
  - ▶ theory ie errors ( Roger Cotes ' Opera Miscellanea , 1722),
  - ▶ methods of least squares for minimum errors \_ \_ \_ in data measurement , was published independently by Adrien Marie Legendre (1805), Robert Adrain (1808), and Carl Friedrich Gauss (1809).

# History of development

## The roots of GIS

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- **late 1940s 20th century**
  - the introduction of the first computers
  
- ▶ **1950s, 1960s**

developments in the field of:

  - ▶ **drawing** (display) systems
  - ▶ analytically oriented systems ( **spatial analysis tools** )
  - ▶ systems for statistical ( **database** ) processing

# History of development

## The roots of GIS

*1950s, 1960s –*

Basic characteristics of this period

- ▶ an initiative of private SW vendors
- ▶ advances in the theory of data structuring and analysis
- ▶ GIS for state administration and private companies



# History of GIS development

## Related fields

- ▶ **CAD** - computer aided design = computer-aided design (2D, 3D)
- ▶ **AM/FM** - automated mapping / facility management - syst . for automated mapping and management (of technical equipment - networks and transport systems) - predecessors of BIM ( Building Information Modeling)
- ▶ **CAM** computer aided mapping = computer cartography

# History of GIS development

## Related fields

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- ▶ **RS** - remote sensing
- ▶ **FTGM** - photogrammetry
- ▶ **DBMS** - database management systems / **SŘBD** – **database management** system
- ▶ **CIS** - cartographic information system
- ▶ **LIS** - land information system - land information system ( land information system )
- ▶ **MIS** - municipal information system

# Fields shaping GIS

Relationship of GIS to relatives computer. systems

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