GEOGRAPHICAL INFORMATION SYSTEMS

Introduction to GIS

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CHAPTER OUTCOMES

- By the end of this chapter, students should be able to:

  - ✓ Explain what GIS is, and why does it matter?
  - ✓ Give examples of GIS applications
  - ✓ Outline the characteristics and components of GIS
  - ✓ Describe how the real world is represented in GIS

CONTENTS

- What is GIS ?

- Questions GIS can answer

- Brief history about GIS

- Main components in GIS

What is GIS?

- GIS ➜ computer-based system that allows us to capture/collect, store, analyse and display geospatial data.

- Spatial data ➜ any data that has direct/indirect reference to a specific location

- Geospatial data ➜ geographically referenced data that describes both location and characteristic of each spatial feature.

Why does GIS matter?

- It provides visual interpretation of events and data

- It helps us to store and organize spatial data effectively

- It helps us make decision based on real fact

- It makes it easier for spatial data to be accessed and viewed
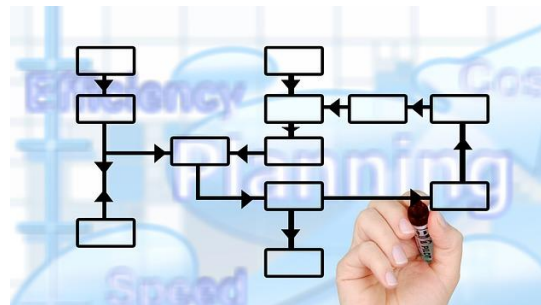
Main components of GIS

DATA

SOFTWARE

HARDWARE

CONNECTIONS

METHODS/PROCEDURES

PEOPLE
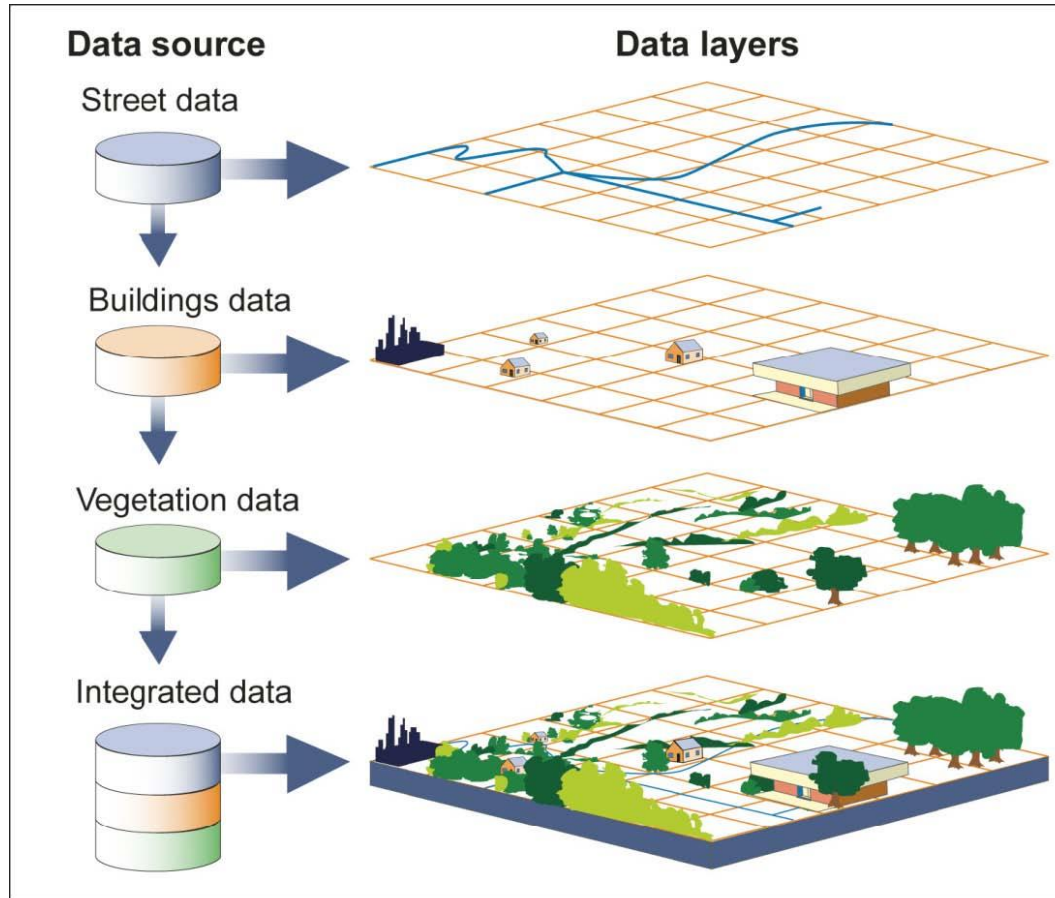
Source of pictures: pixabay.com

Questions GIS can answer

- Location
  - Where is the nearest public parking space?

- Patterns
  - Where do high concentrations of students live in Kuantan?

- Trends
  - How are patterns of development in a town changing over time?

- Conditions
  - Where can I find a playschool for my kid that is within 5km from my workplace and accessible by public transport?

Examples of Geographical Problems

- **Government**: Where to locate public facilities (e.g schools, hospitals, fire stations, and police stations)?

- **Transportation**: Where to build new road to reduce traffic congestion during peak hour at Place A?

- **Commercial**: Where to build new shops/supermarkets that make most effective services/profits?

- **Travelers**: Where am I and how can I travel from KLIA to Bukit Gambang Resort City?

- **Park management**: Where to locate camping spots that provides the best experience for camperswith the minimum impact on the environment?

Source: GAO.

Source of picture: https://commons.wikimedia.org

Examples of GIS applications

Finding direction from KLIA to Mid Valley ...

Communitising Technology

Examples of GIS applications

Boundaries of different areas…

Source of picture: https://commons.wikimedia.org
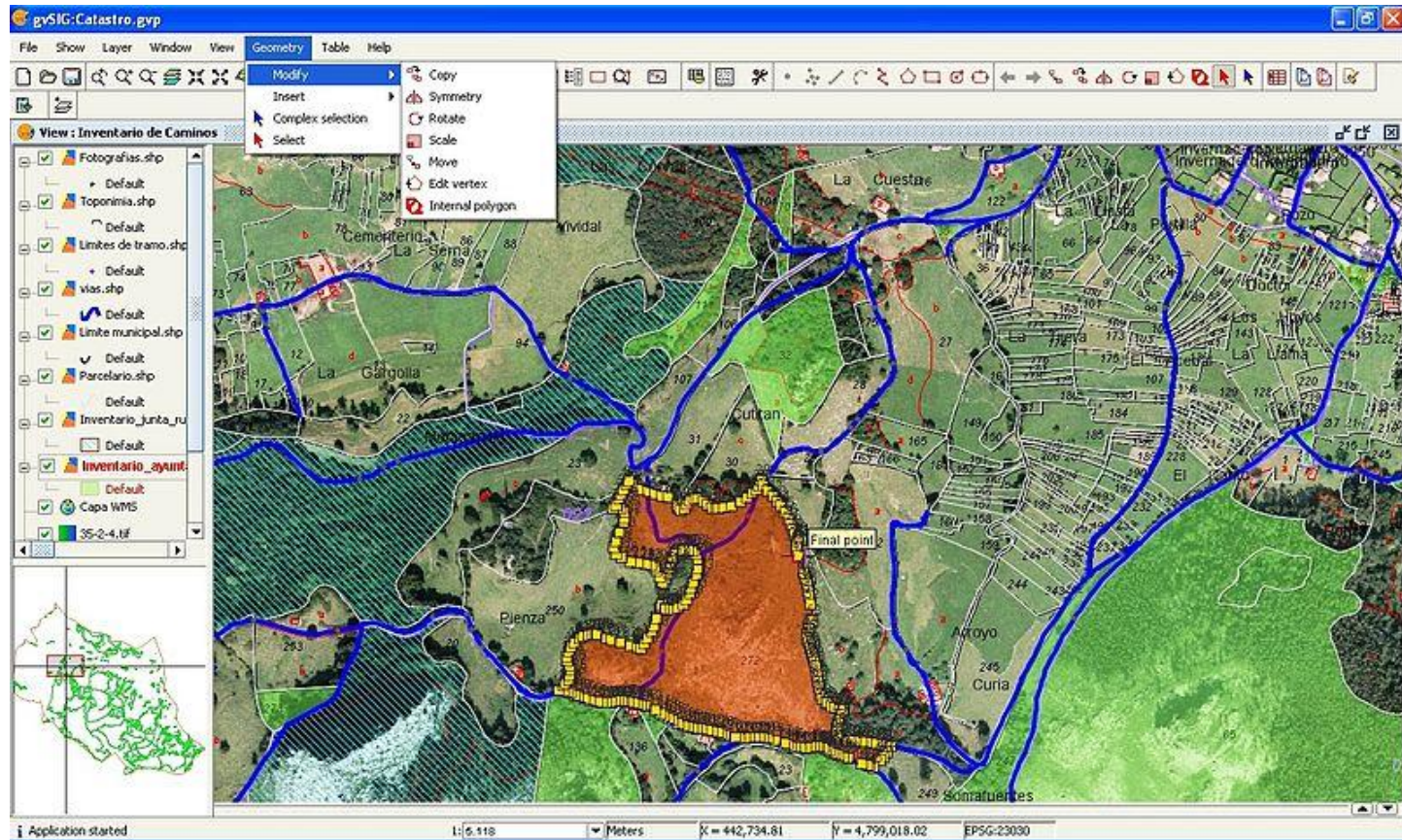
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Communitising Technology

Think GIS way…

What are other GIS applications that you could relate to your daily life?

Source of picture: pixabay.com

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