

Introduction

- Syllabus
- Discussion of Project

Project

- Comprised of creating a GIS, Writing a Summary Paper (5-7pages), and Giving PowerPoint Presentation
- Your GIS must include both primary & secondary data
- Your GIS Must include 2 user-created data layers
 - using different geometric primitives

GIS Applications

- All GIS Applications are components of wider management and decision-making operations
- GIS Applications are available in many different natural & social science journals
- In general, GIS Applications can be group based on a range similarities
- Understanding the range of potential applications is important for users and managers interested in implementing any GIS initiative

Functional Groupings

- What is the primary objective/function of a proposed application
- The ultimate function of a GIS is increasingly less distinct
- Issues used to classify GISs:
 - Data Issues (themes, precision required, data model)
 - Operators & Analysis (Overlay, address matching, etc...)
 - End Products (functional database, map, fly-by)

GIS as Decision Support Tool

- While GIS can be used to support a variety of decisions, the types of decisions supported by GIS are seldom substantive enough to differentiate applications
- Only when GIS is used to aid in major decision making is its role clearly articulated and understood

Type of Users

- GIS users have different and distinct educational backgrounds and intended applications
- Basic types of user coalesce around three areas
 - existing technology-oriented fields
 - engineering, cartography, remote sensing
 - decision-makers
 - urban planners, resource management, LIS
 - university & government labs
 - direct support of ‘science’

Cartography

- GIS's role in Cartographic Applications is two-fold:
 - Automated Mapping
 - New Maps based on Analysis
 - map contains a possible 'solution'
- “Traditional” Cartography v. GIS
 - mapping = knowledge of positions & limited number of object attributes
 - GIS = knowledge of positions object attributes & relationships between objects (cartographic v. topological databases)

Surveying & Engineering

- These applications are highly precise
- Vector Data Model dominates these types of applications
- Mostly concerned with boundary identification
- These fields have enhanced GIS technologies through the integration of engineering-based technologies, such as GPS & Total Stations

Remote Sensing

- Data Model is Raster
- Potential GIS applications include vector-raster integration (such as super-imposing political boundaries on RS scenes)
- Vectorization also an area of importance

GIS & Science

- GIS is a core scientific technology for the future
 - Abler (1987) suggest GIS will be the equivalent of a microscope in the future
- GIS is unique in that GIS software and prominent GIS applications have not been driven by primarily scientific users
- Implementation throughout the sciences uneven