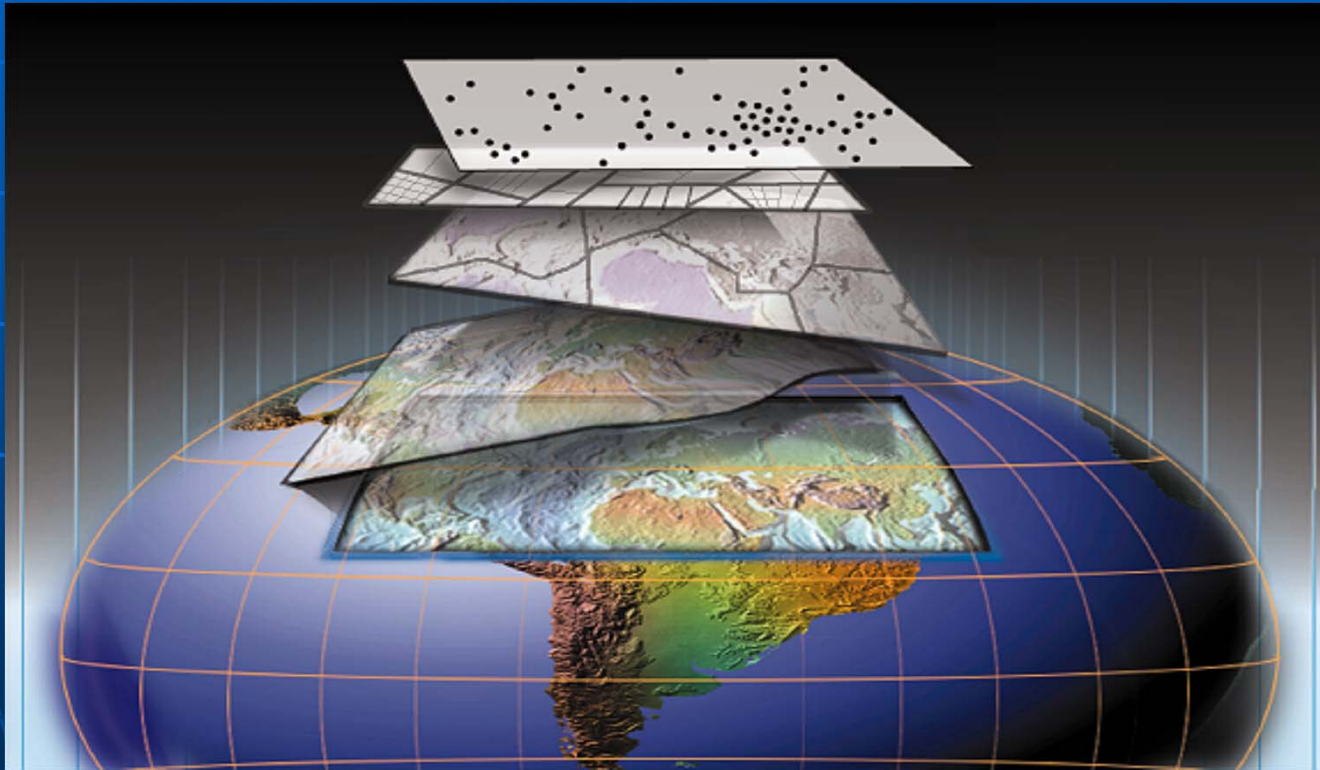


QUESTIONS GIS
CAN ANSWER

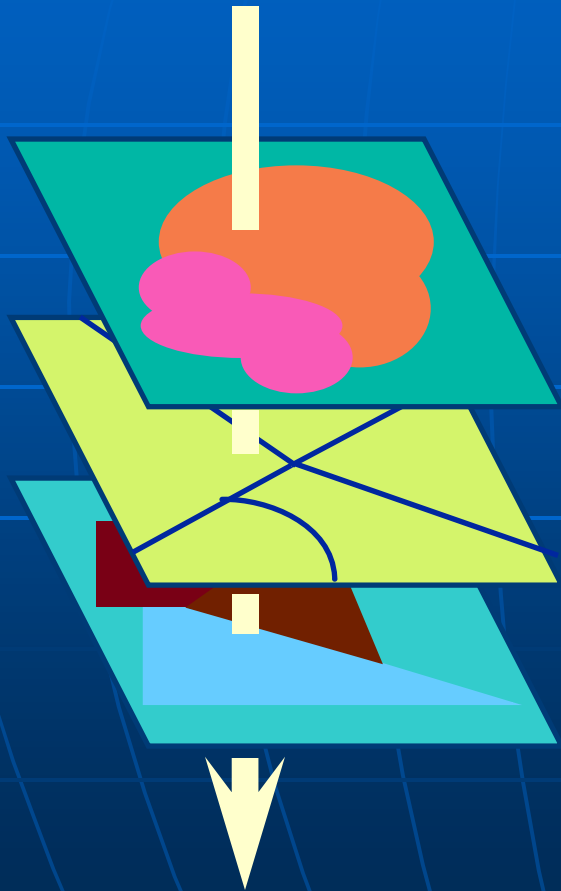
What is GIS?



What is GIS?

- A Geographic Information System (GIS) is a computer system of software, hardware, people, and geographic information
- A GIS can:
 - create, edit, query, analyze, display and edit map information on the computer

What can a GIS do?



- It enables you to visualize information in new ways that reveal new and important relationships, patterns, and trends.
- It integrates various types of spatial data (databases, imagery, GPS coordinates, etc.).

What can you do with a GIS?

As expected, the possibilities are unlimited!

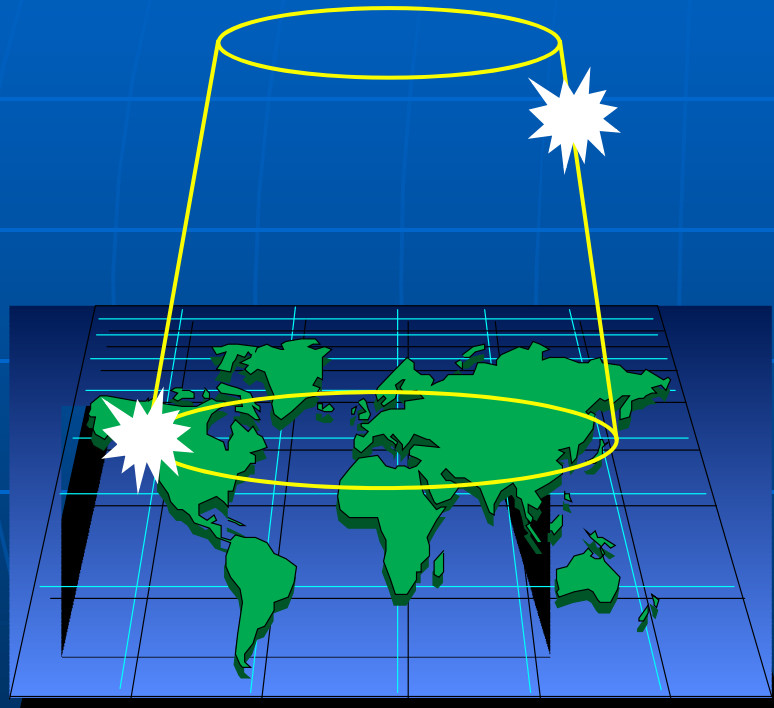
- Agricultural crop land estimation
- Transportation corridor planning
- Demographic analysis
- Mapping of economic development zones
- and more ...

What Can a GIS Do for You?

- Perform Geographic Queries and Analysis
- Map, Model, and Analysis Data
- Make Better Decisions and Create Better Solutions

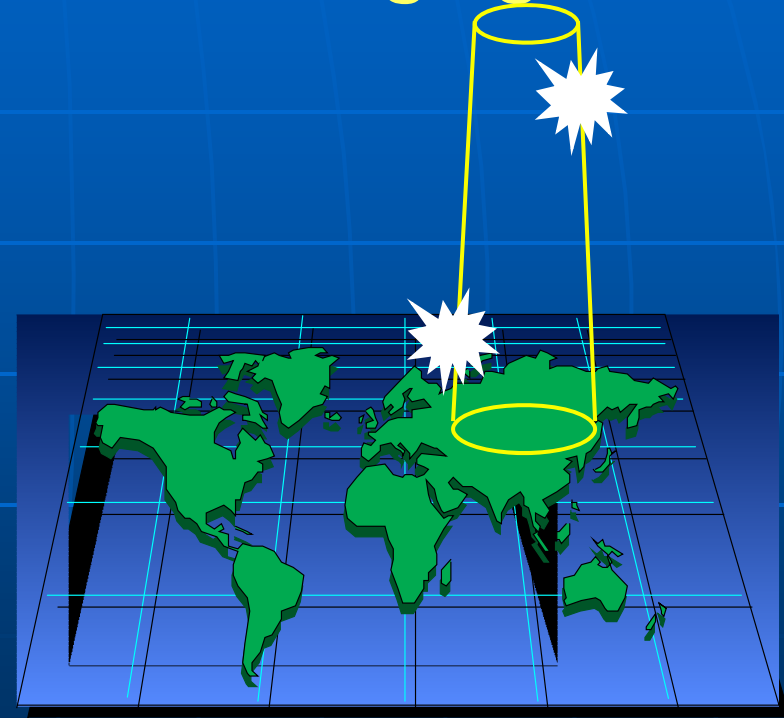
Context and Content

Seeing the Whole



- Patterns
- Linkages
- Trends

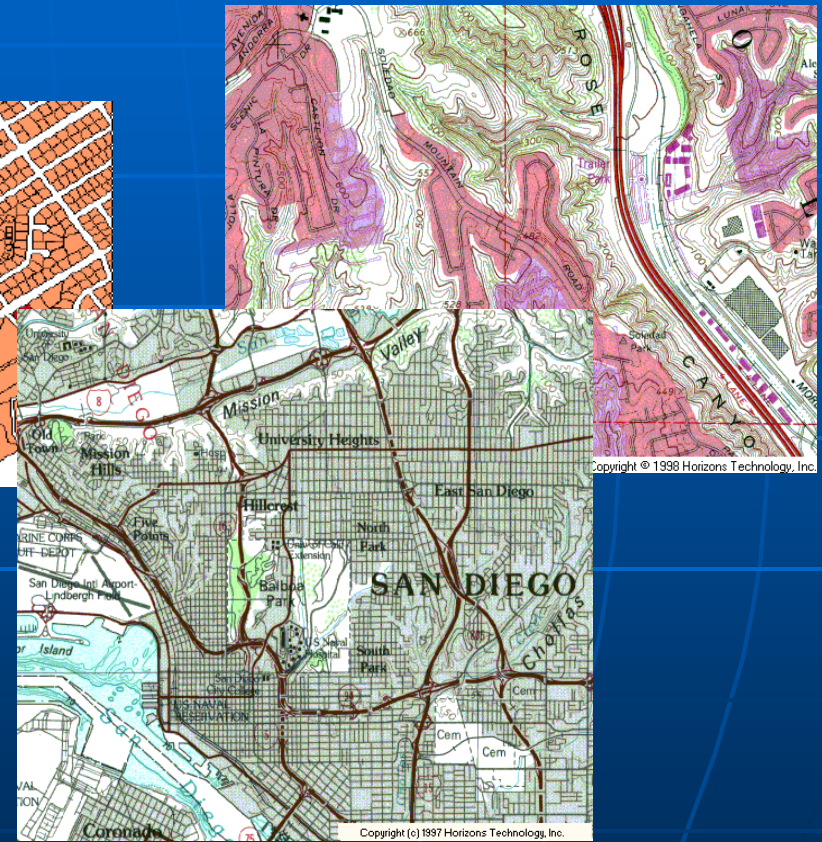
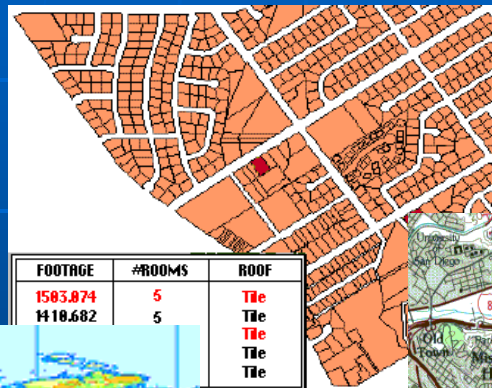
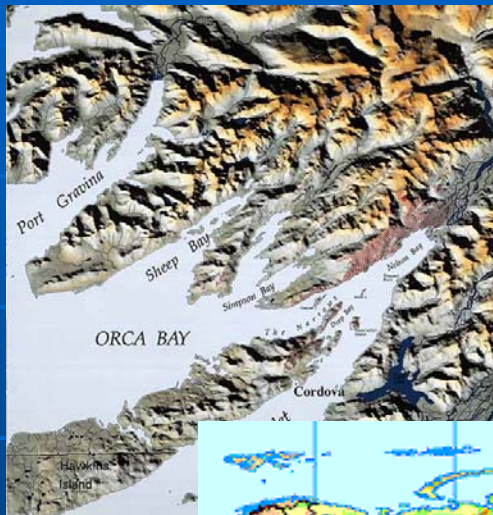
Managing Places



- Watersheds
- Communities
- Districts

Maps of GIS

Come in many flavors!



Aspatial questions....

- Asking "What's the average number of people working in BHUs each location?" is an aspatial question - the answer doesn't require the stored value of latitude and longitude; nor does it describe where the places are in relation to each other.

Spatial questions....

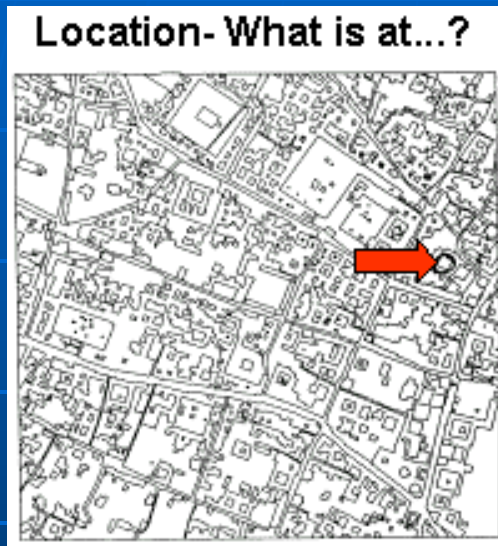
- “Which BHUs lie within 15kilometers of each other?”, or “What's the shortest route passing through all of these BHUs?” These are spatial questions that can only be answered using location data and other information such road network of Peshawar valley. GIS can answer such questions. It provides a truly analytical tool. The major advantage of GIS technology is that it facilitates identification of spatial relationships between map features.

Questions GIS can Answer

- So far, GIS have been described through formal definitions and through its ability to carry out different functions on spatial data.
- One can also, however, distinguish GIS by listing the types of questions the technology can (or should be able to) answer. If one considers a particular application carefully, there are five types of question that sophisticated GIS can answer.

- The first of these questions seeks to find what exists at a particular location. A location can be described in many ways, using, for example, place name, postcode, or geographic reference such as longitude/latitude or x and y.

Location- What is at...?

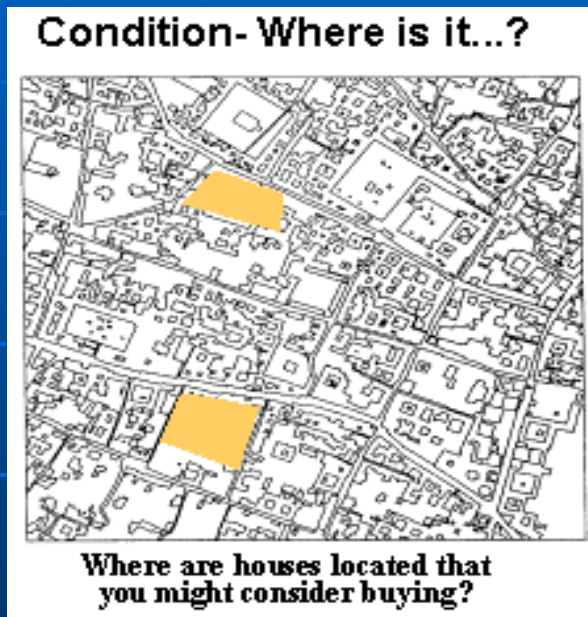


Area	215712
Zoned landuse	Residential

Figure 1. Questions a GIS can Answer

- The second question is the converse of the first and requires spatial data to answer. Instead of identifying what exists at a given location, one may wish to find location where certain conditions are satisfied e.g.
 - 1. Houses having 4 bedrooms& made up of local bricks.
 - 2. A non-forest area within 100 meters of a road, and with soils suitable for supporting buildings.

Condition- Where is it...?



- Residential Land Use
4 Bed rooms
Made of local bricks

Figure 2. Questions a GIS can Answer

Trends- What has changed
since...?

The third question might involve
both of the first two and seek to find
the differences.

e.g., in land use or elevation within
an area over time.

TRENDS

Trends- What has changed since...?



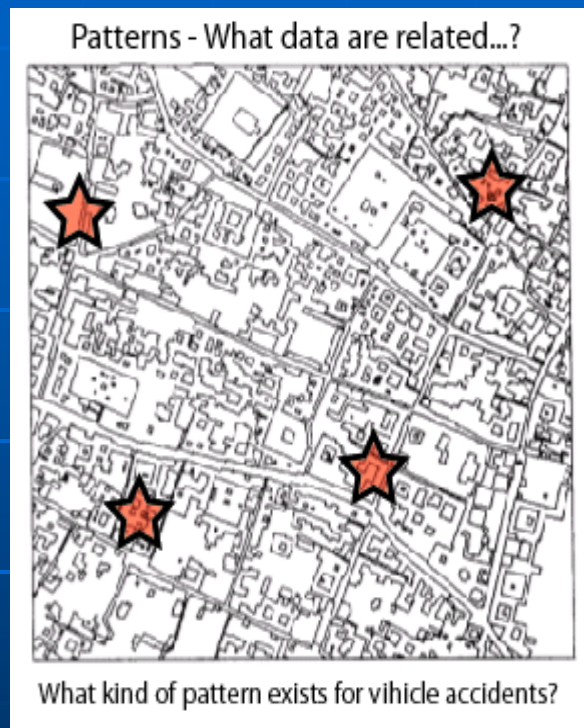
1970



1990

How much land has changed to residential since 1970?

Patterns- What spatial pattern exists...?



- This question is more sophisticated. One might ask this question to find out at which traffic points accidents are occurring most frequently

Modelling- What if...?



Hotel?
Post office?

- “What if...” questions are posed to determine what happens, for example, what are the effects on urban areas, if the road is expanded by one hundred meters, or delineate 5m buffer zone around the national park to prevent from grazing. Answering this type of question requires both geographic and other information.