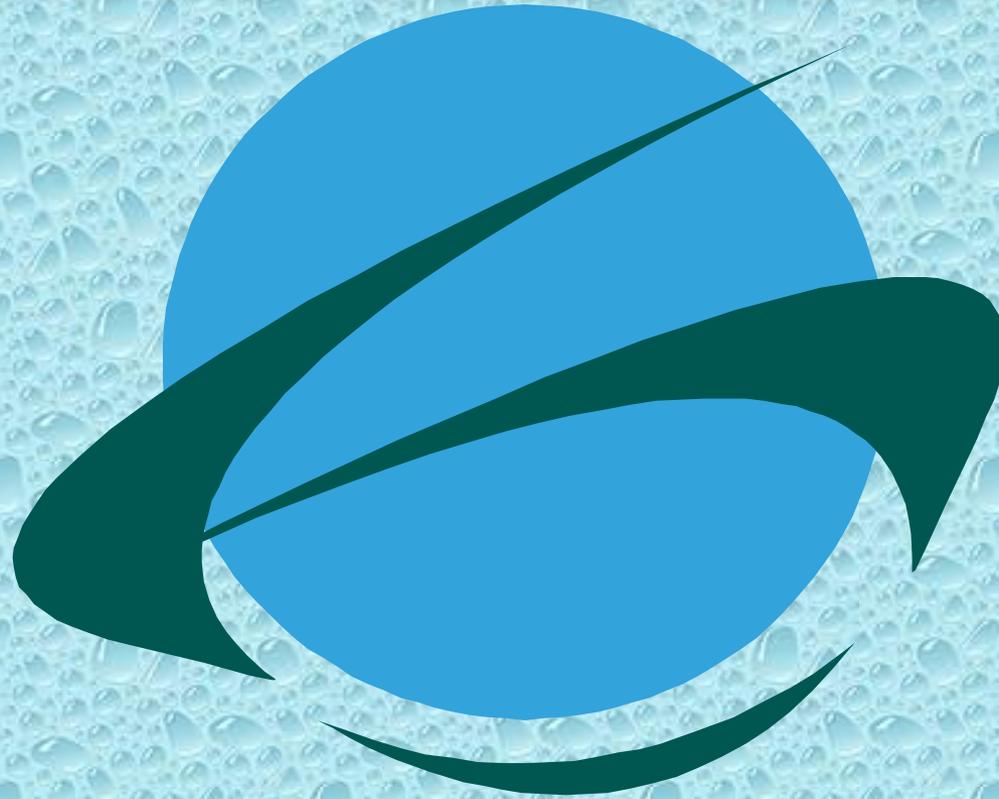


BASIC MAP MAKING



GEOSPATIAL DELHI LIMITED

Session Contents

- Introduction to maps
 - What is a map?
 - Uses of maps
 - Map elements
 - Types of maps
- Map making
 - Basic Issues in Map Design
 - Map making process
- GIS In Map Making

Introduction

WHY MAPS

?

Bangali senior secondary school



IP Womens Hostel



NATIONAL VECTOR BORNE DISEASE CONTROL PROGRAMME



GSDL



IP WOMENS COLLEGE



CIVIL LINES METRO STATION
GATE NO. 2







What is a map

- ▶ A two-dimensional form of the three-dimensional earth
- ▶ A form of human communication that represent geography and culture.



Who sailed the ocean blue in 1492?



CHRISTOPHER COLUMBUS

EARLY MAPS

People have been making maps or pictures of places for a very long time, purposes that were different than maps today.

The earliest maps were carved on rocks and they illustrated beliefs and rituals connected with wider cosmologies.



Babylonian clay tablet world map, 600 B.C



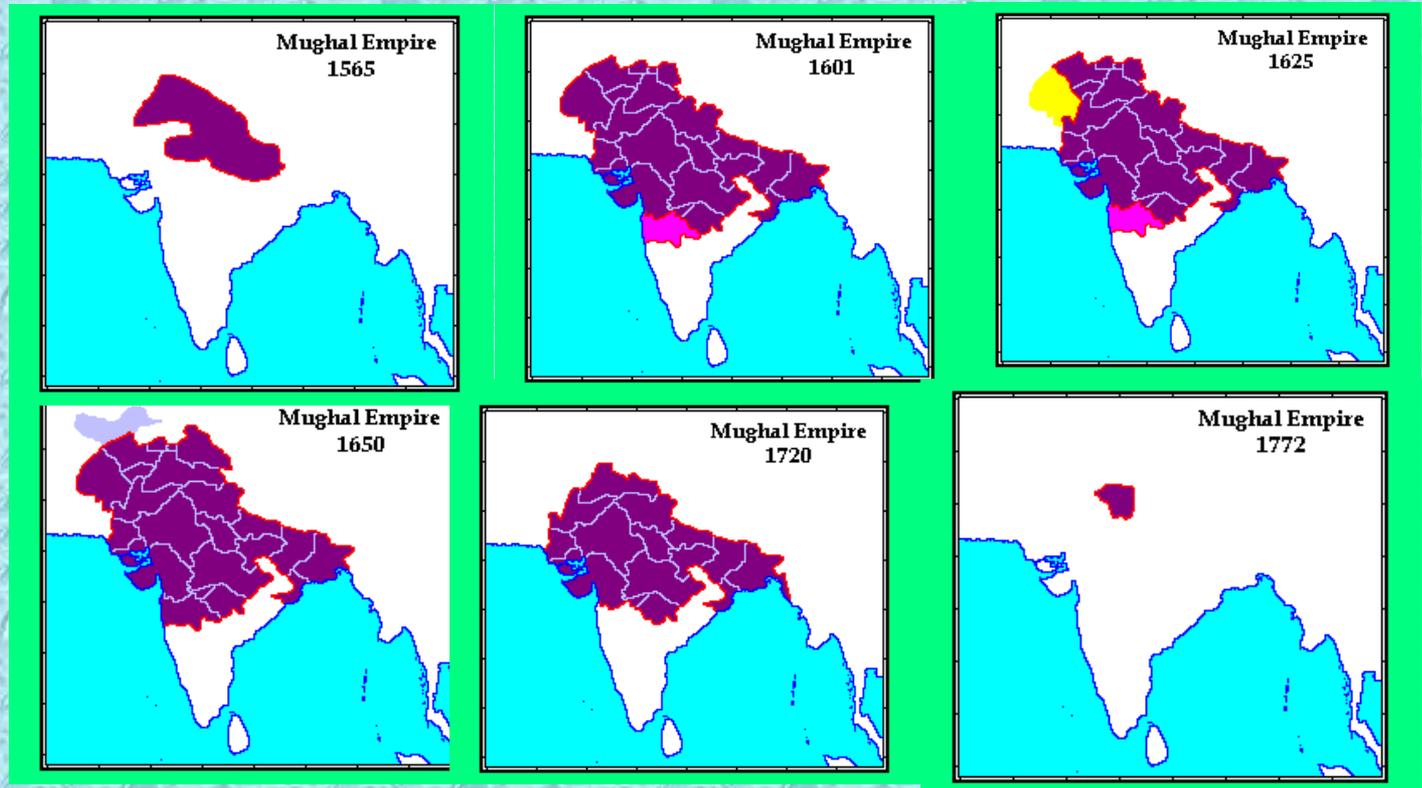
EXAMPLES

- ▶ Some represented a way of seeing the world, for example, the ancient T-O maps used by Jews in Jerusalem were intended to show Jerusalem as the holy centre of the world.
- ▶ The fool's cap world map, about 1590. Maps are human representations of the world, as seen through the eyes of a clown in this example.



Why did people need maps?

- ▶ As nations expanded military ventures demanded, the need for maps became more evident.



Source: WHKMLA Historical Maps

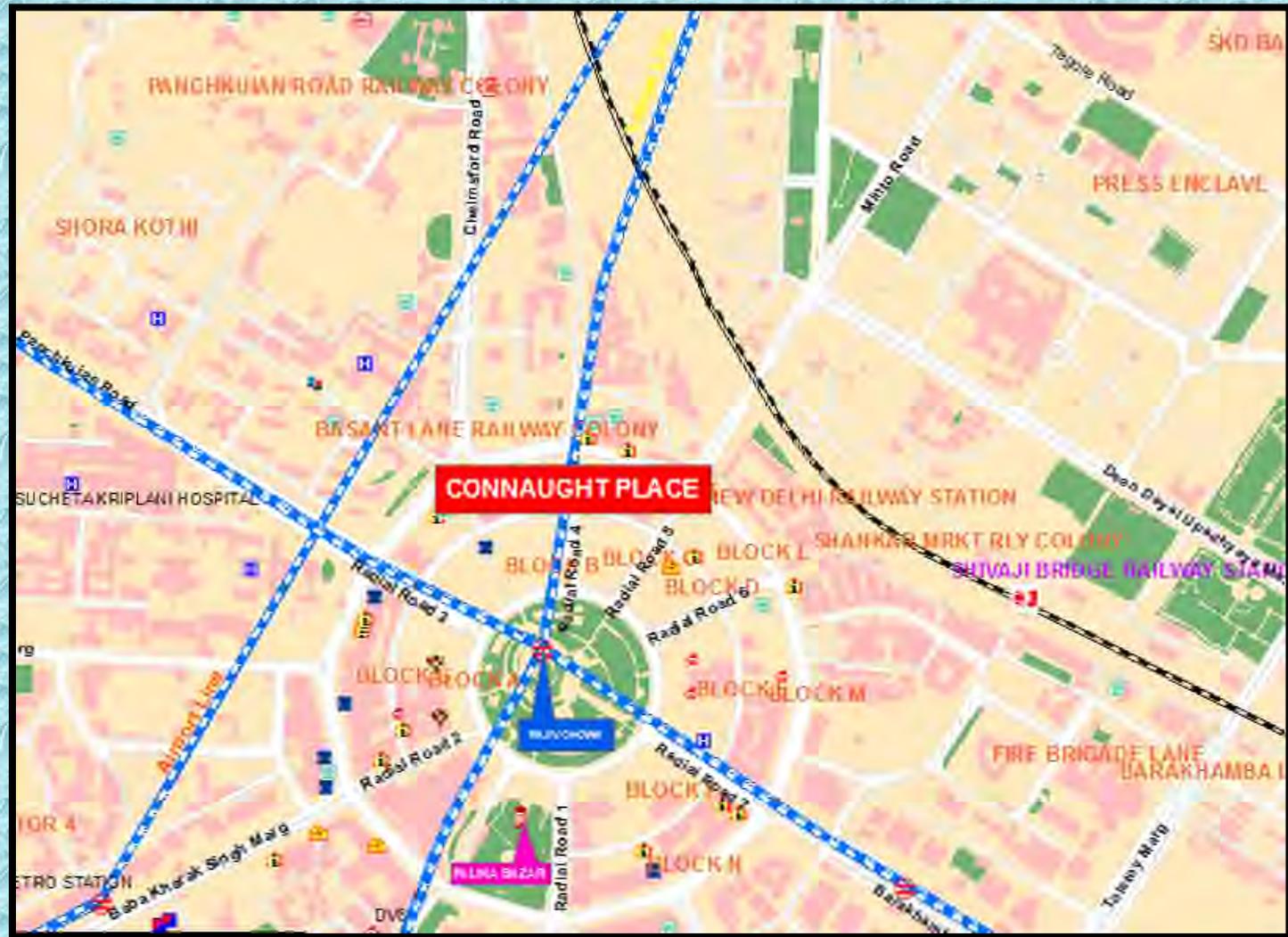
Why people need maps now?

- ▶ To make a very large area look small and understandable.

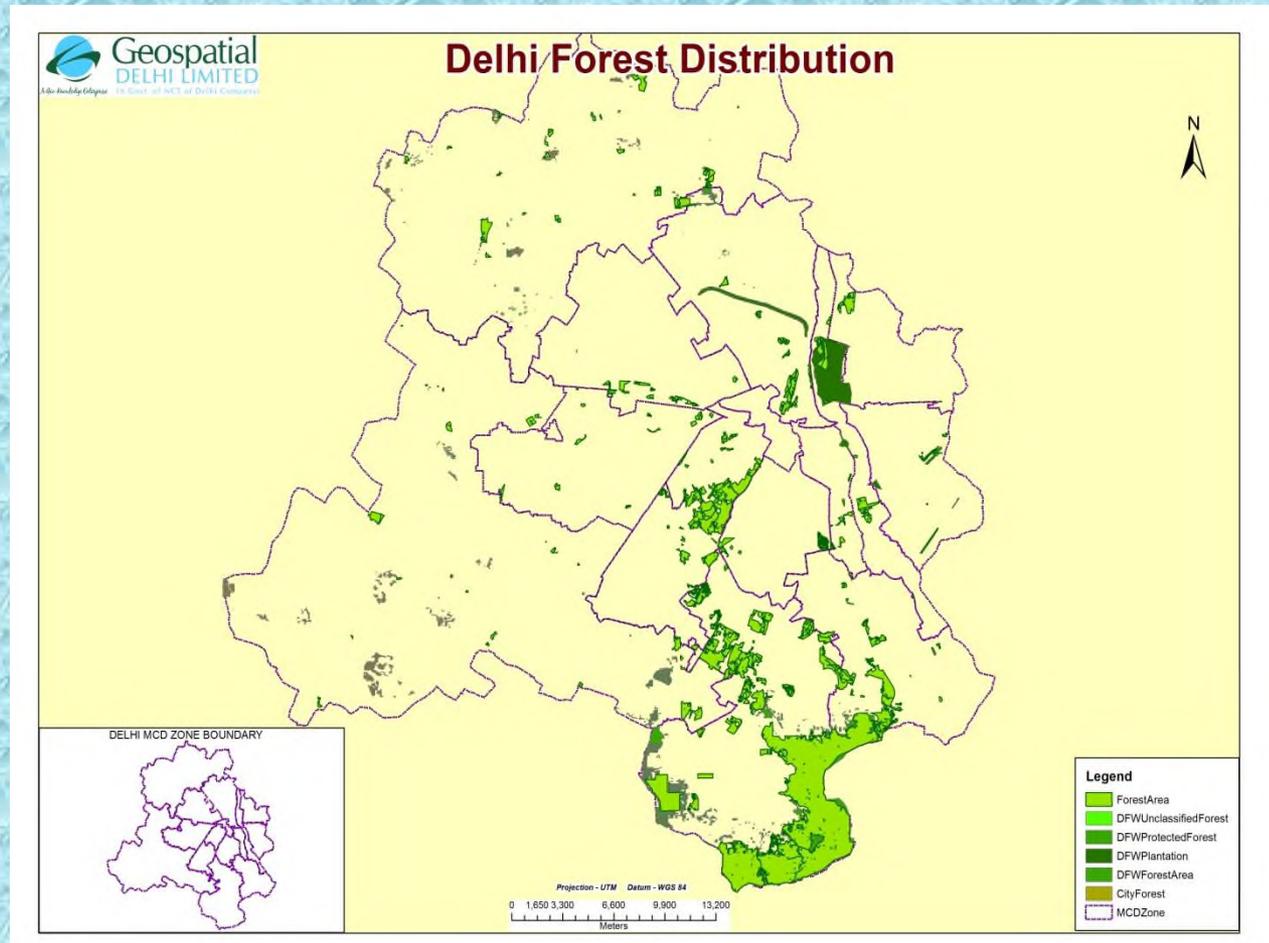


...Why people need maps?

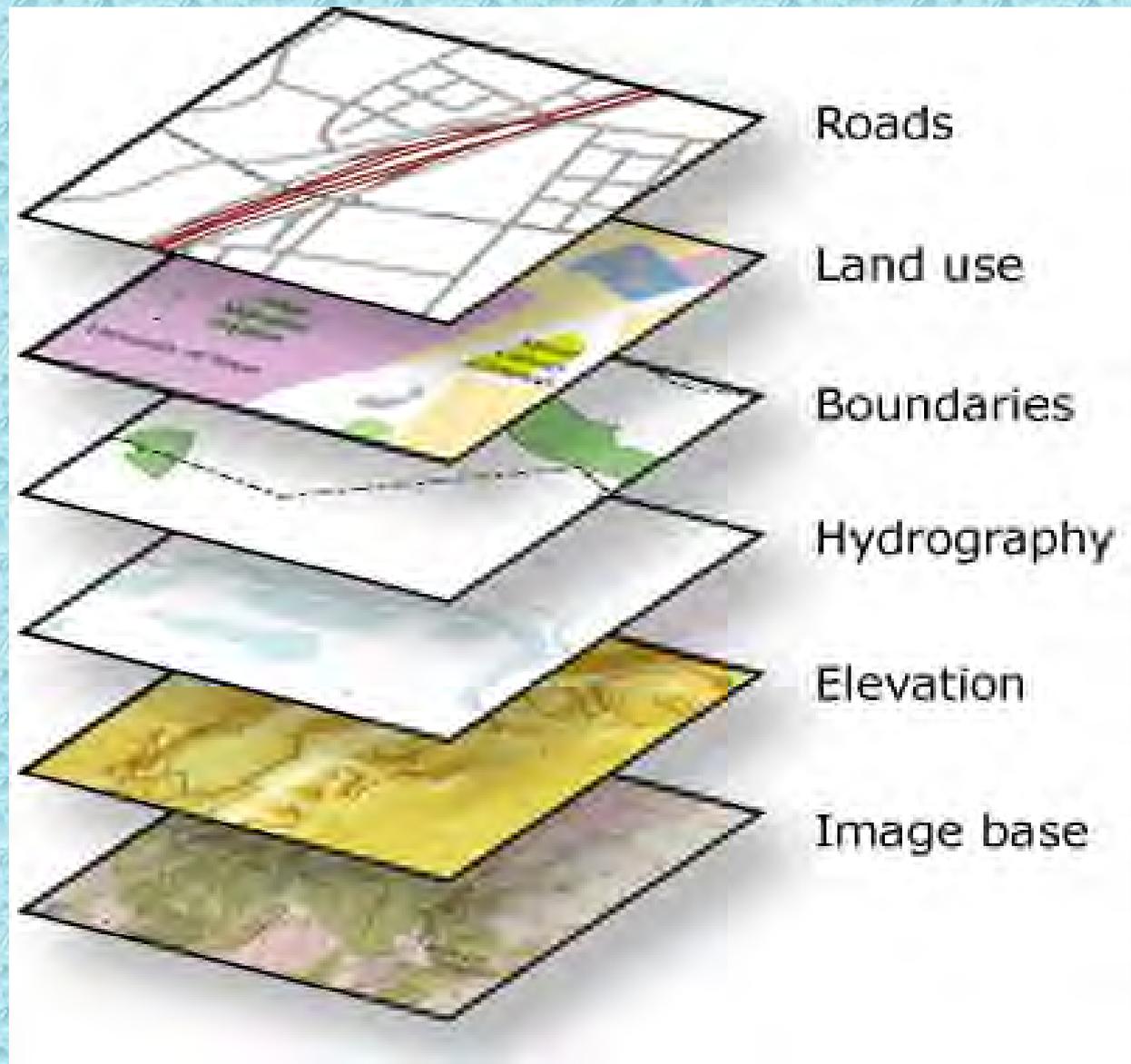
- ▶ To help us find our way to different areas.
- ▶ Show us where major places are.



- ▶ To Show us distribution of resources



- ▶ **Bring out relationship amongst geographic elements.**



Map elements

- ▶ Maps have several elements, which are necessary to read and understand them .

The acronym DOGSTAILS makes it easy to remember the important parts of a map:

Date	D	When the map was made
------	----------	-----------------------

Orientation	O	Directions (north arrow)
-------------	----------	--------------------------

<u>Grid</u>	G	Locates places on the map
-------------	----------	---------------------------

Scale	S	what the map distance is
-------	----------	--------------------------

Title	T	What, where, and when
-------	----------	-----------------------

Author	A	Who made the map
--------	----------	------------------

Index	I	Map address of places
-------	----------	-----------------------

Legend	L	what the symbols mean
--------	----------	-----------------------

Sources	S	Basis for map information
---------	----------	---------------------------

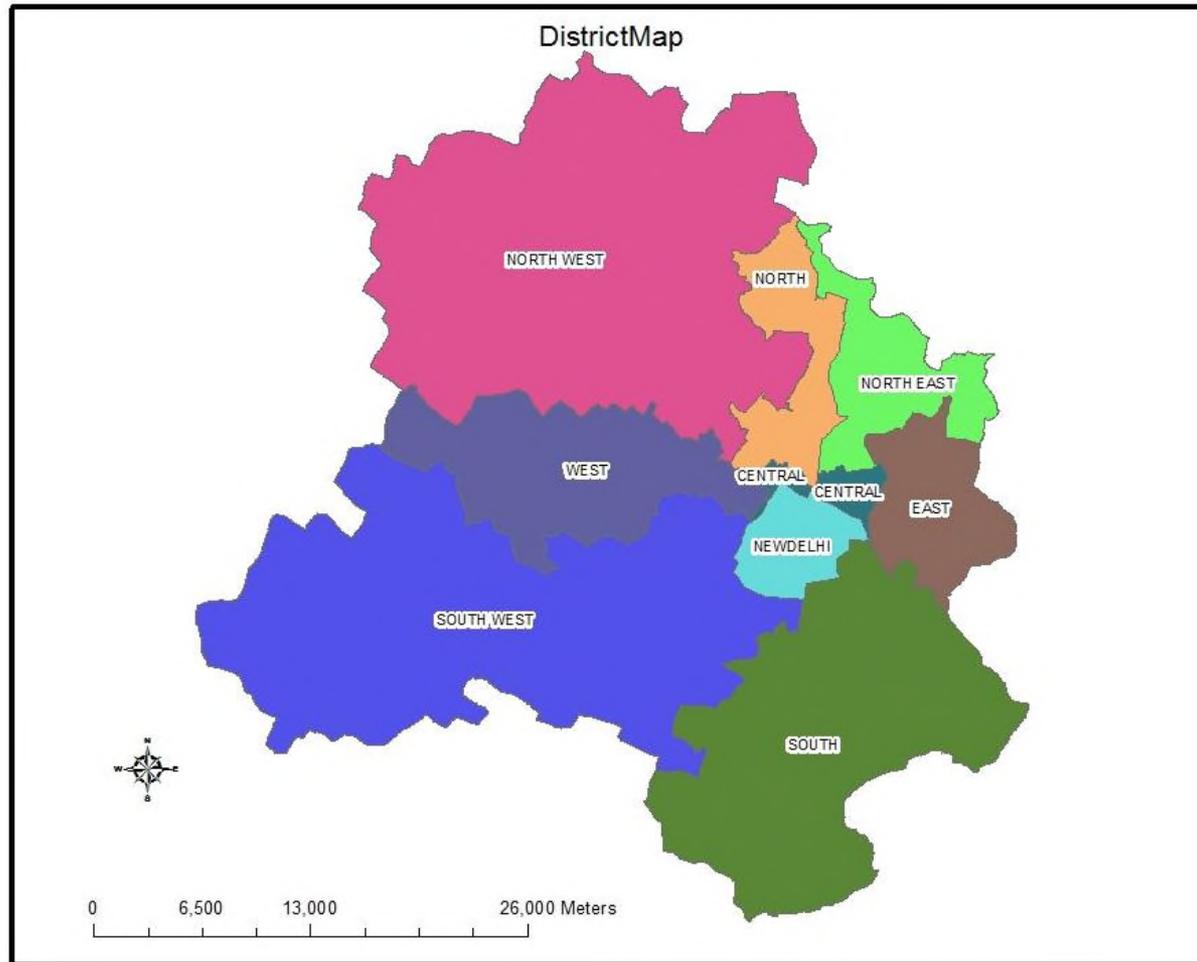
Types of Maps



General-Purpose Maps

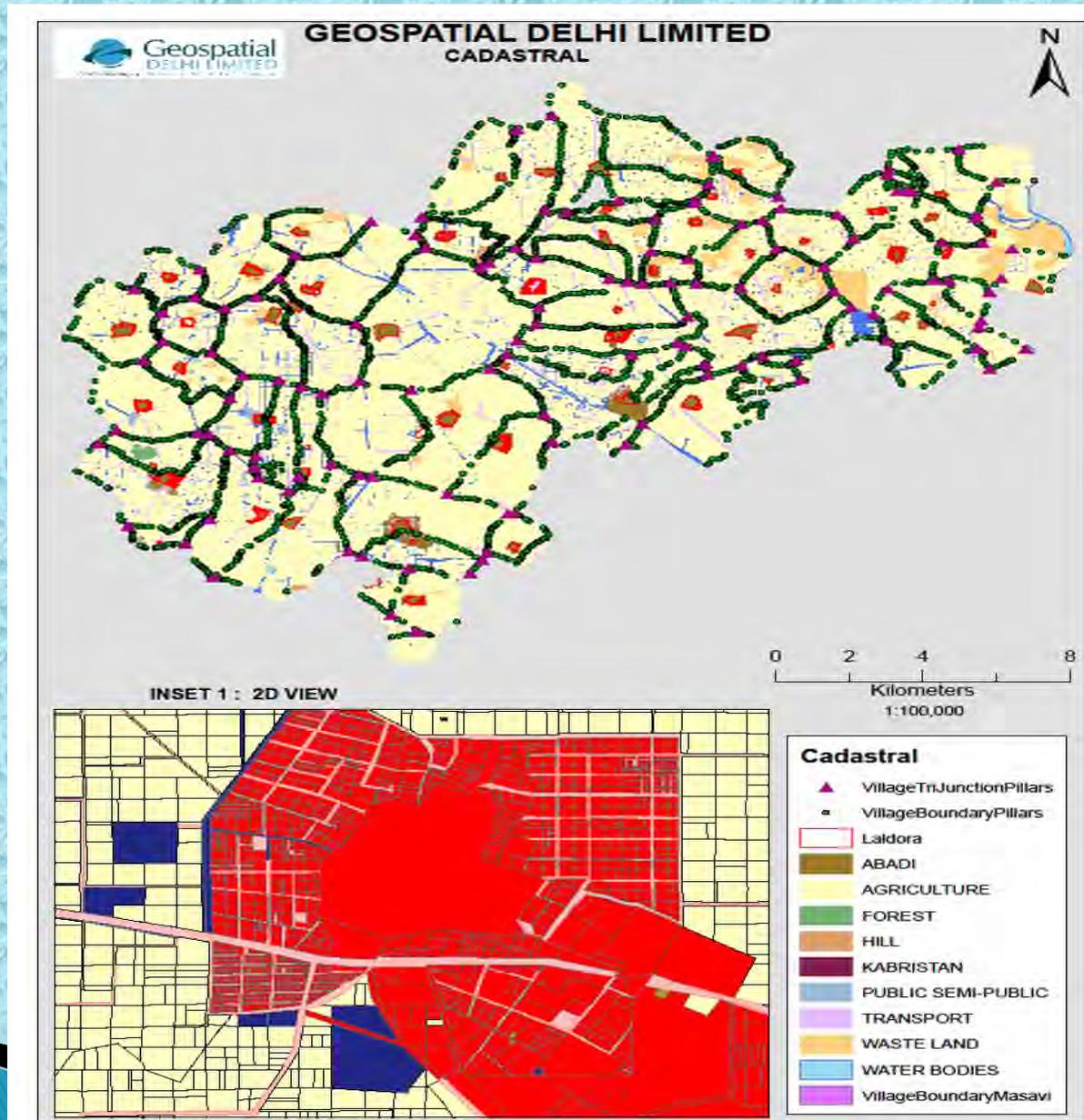
- ▶ Also known as reference or location maps.
- Political maps
- Physical maps
- Statistical / Distribution maps
- Topographic maps
- Geological maps
- Geomorphological maps
- Town plan maps
- Cadastral maps
- Weather maps
- Bathymetric maps / Navigational maps
- Aeronautical maps

Political Maps



Cadastral Maps

- ▶ A cadastral map is a map that shows the boundaries and ownership of land parcels.



Thematic Maps

- ▶ Also known as (Special Purpose) maps.

Qualitative Thematic Maps

Also known as descriptive maps ,are

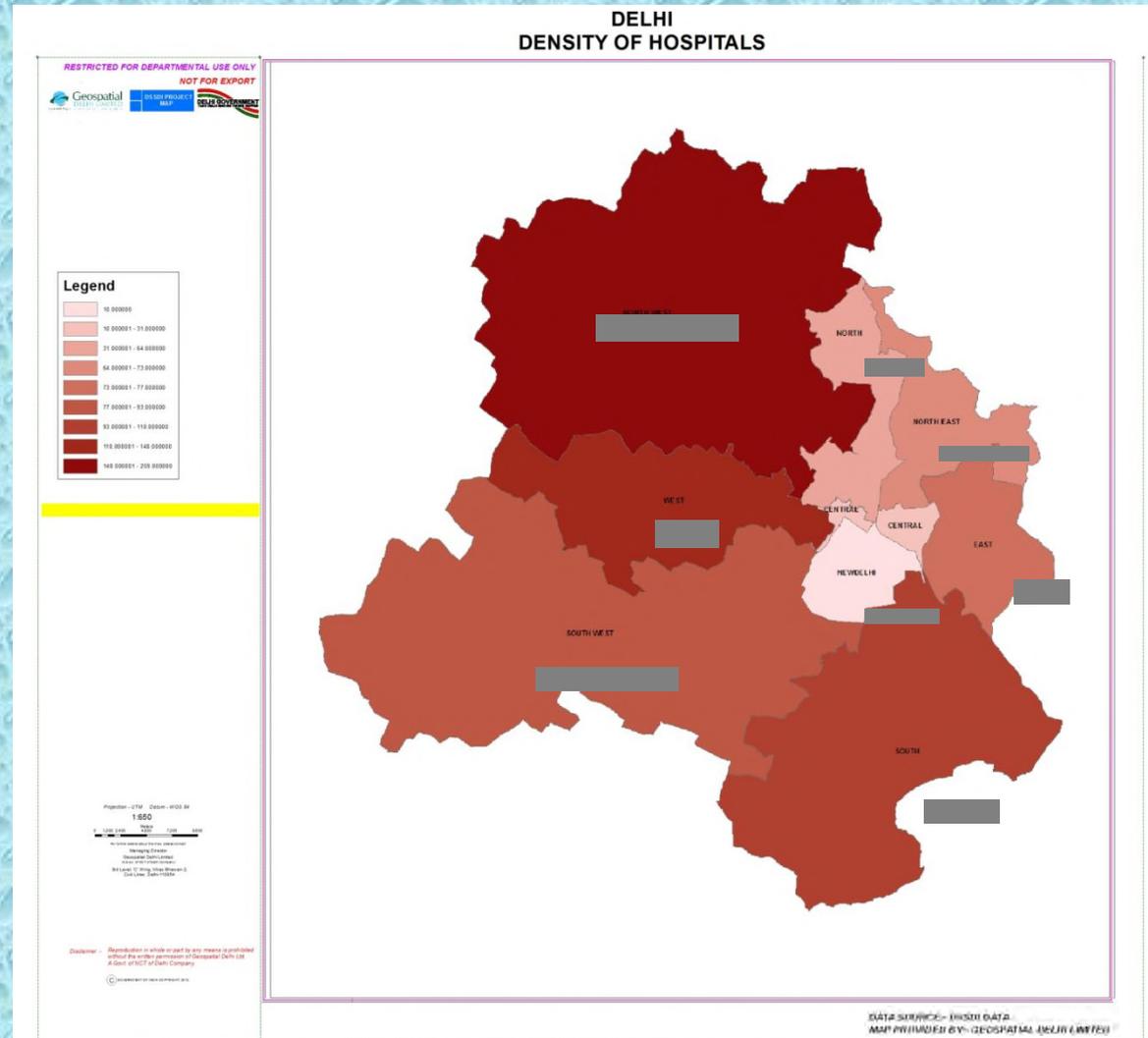
- ▶ Region Map : In which geographic shapes have been grouped into larger regions, with each region appearing as a single entity (usually with the same colour).
- ▶ Path Map :map that shows paths between locations, or directions of flow.
- ▶ Facility Map: map that shows the locations of facilities using point symbols.
- ▶ Resource Map : map which shows the locations of resources.

Quantitative Thematic Maps

- ▶ indicate the quantity of a data attribute at different locations on a map.

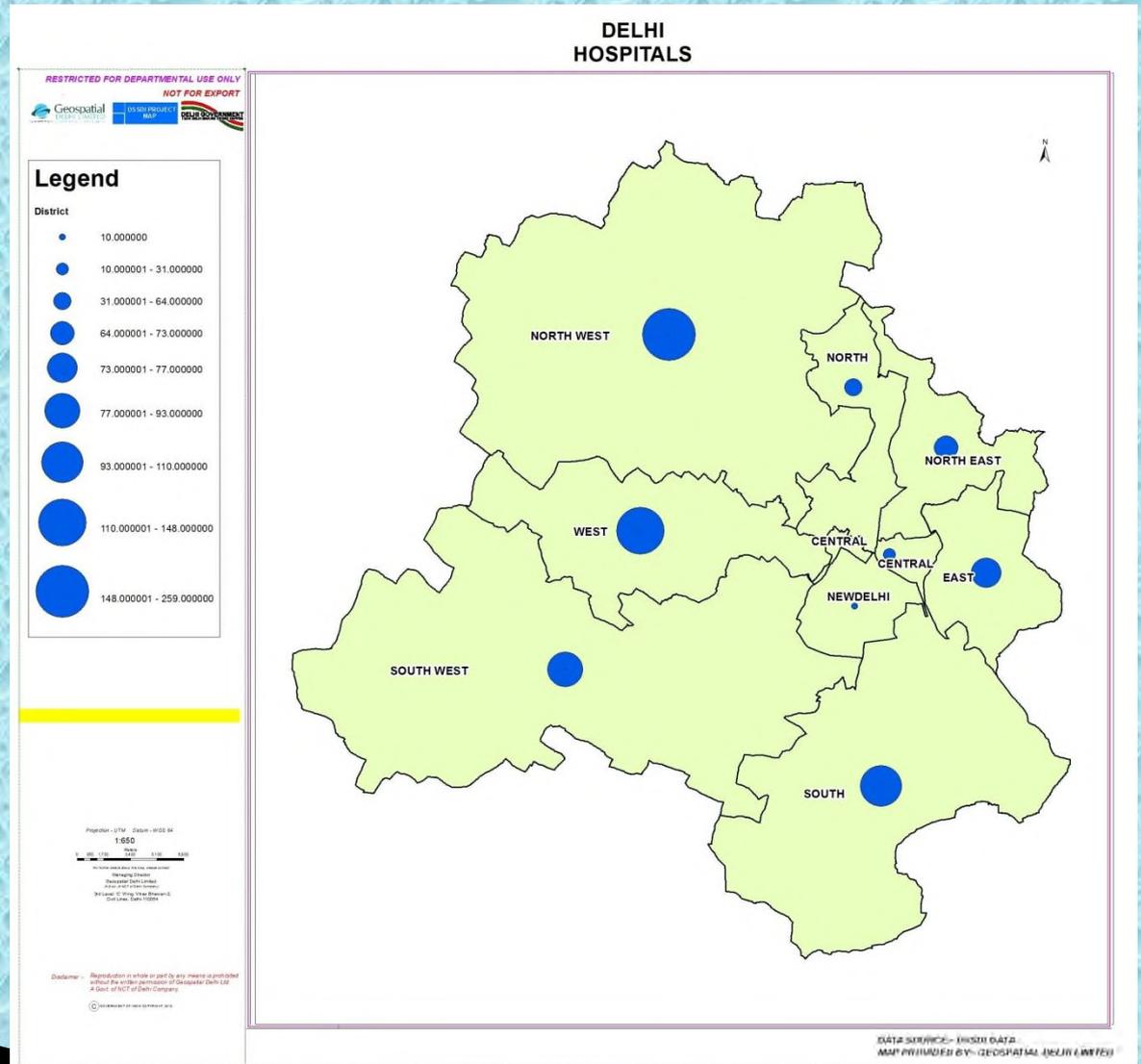
Choropleth Maps

Maps use colour shading to represent different quantities or values



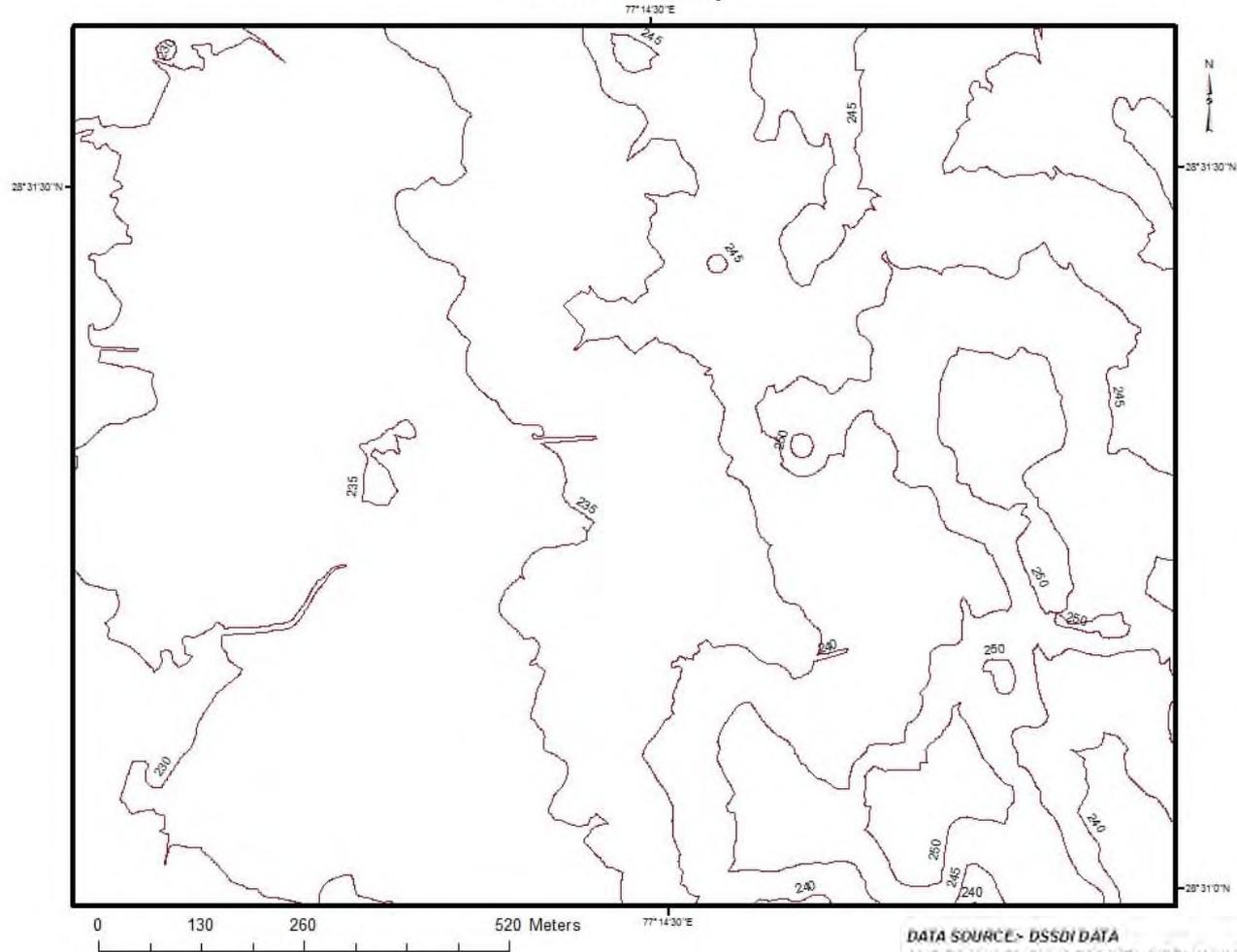
Graduated Circle Maps

Use symbols of different sizes placed within an area to show the value or quantity associated with it.



Isopleths Maps

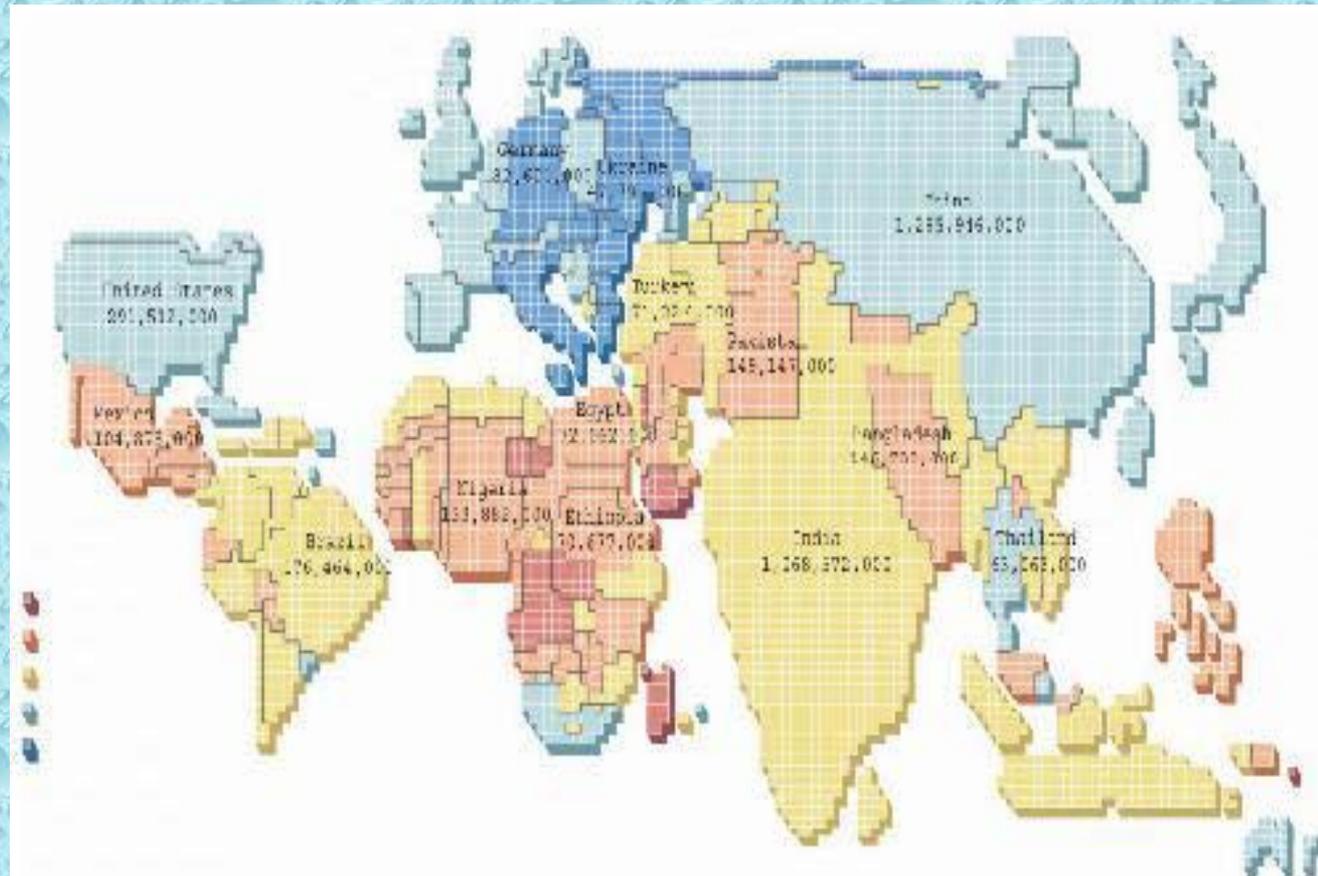
Contour Map



DATA SOURCE- DSSDI DATA
MAP PROVIDED BY- GEOSPATIAL DELHI LIMITED

Cartograms

- ▶ Cartograms distort the size and shape of map areas to show statistical data



Map making

Basic Issues in Map Design

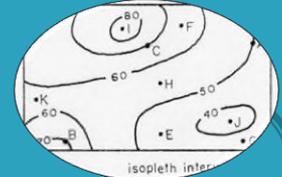
1. Considering the purpose of and audience for the map.

What to make?

Who will use?



► **Choosing a map type**



► **Choosing appropriate map projection**



- ▶ **Selecting a title that represents what is shown**

Resources
In India?

Resource
Map of
India?

India
Resource
Map?



▶ Selecting and placing text

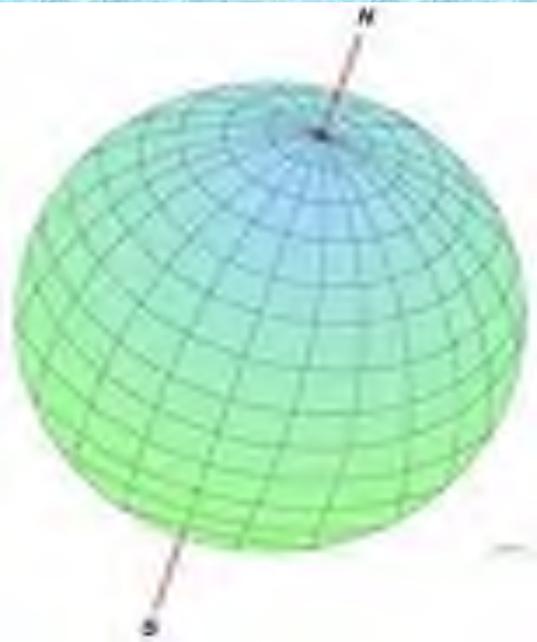


1. Designing an overall layout for easy understanding



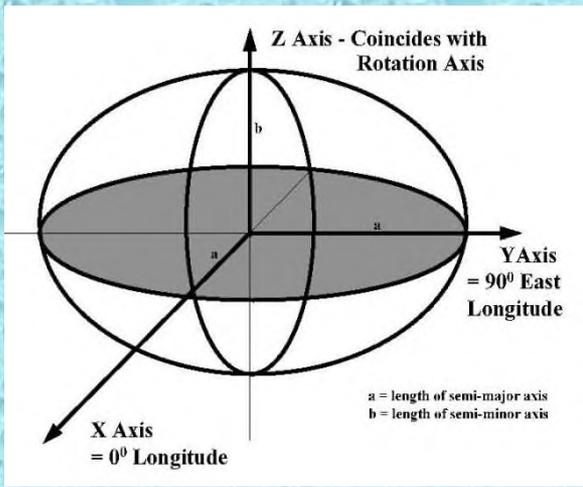
Map making process

There are five important steps to produce a map of the Earth's Surface. These are:



1. A reference system which is used to describe the locations of points on the surface of the Earth.

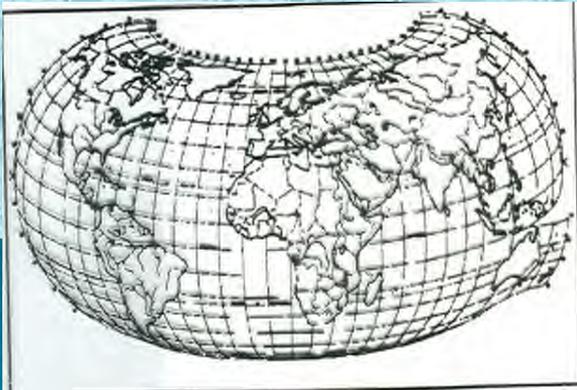
For maps of large areas of the Earth this would be latitude/longitude and for simpler 'sketches' or maps of local areas this would be a grid.



2. A Datum which defines the geometry/mathematics of how to transfer this coordinate system onto the surface of the Earth.



3. Thirdly, a measurement system which is used calculate the coordinates of points on the surface of the Earth.



4. A **projection** which allows the coordinates which have been calculated using a measuring system, to be displayed on a flat piece of paper.

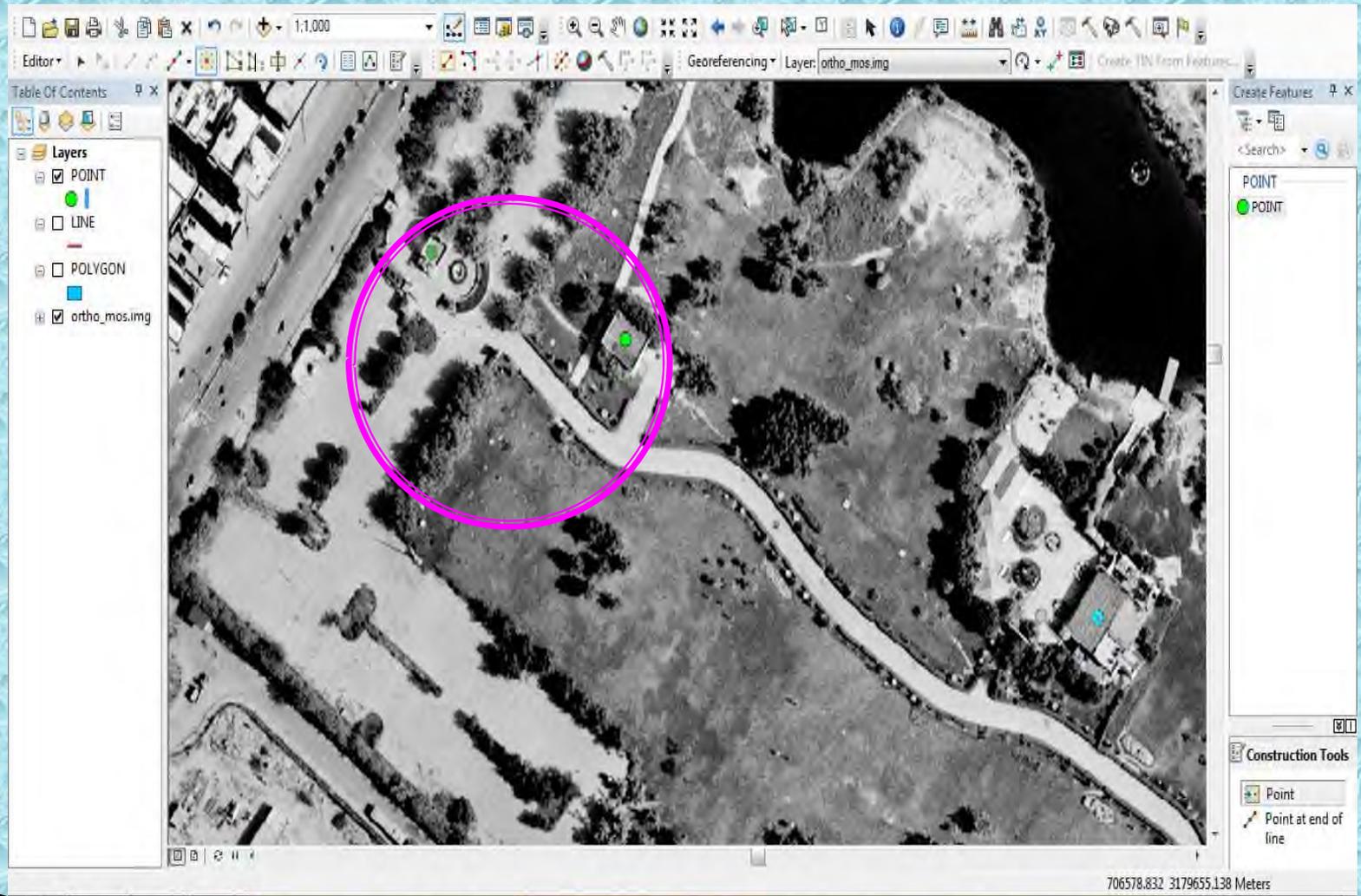
5. The Map Maker's Art.



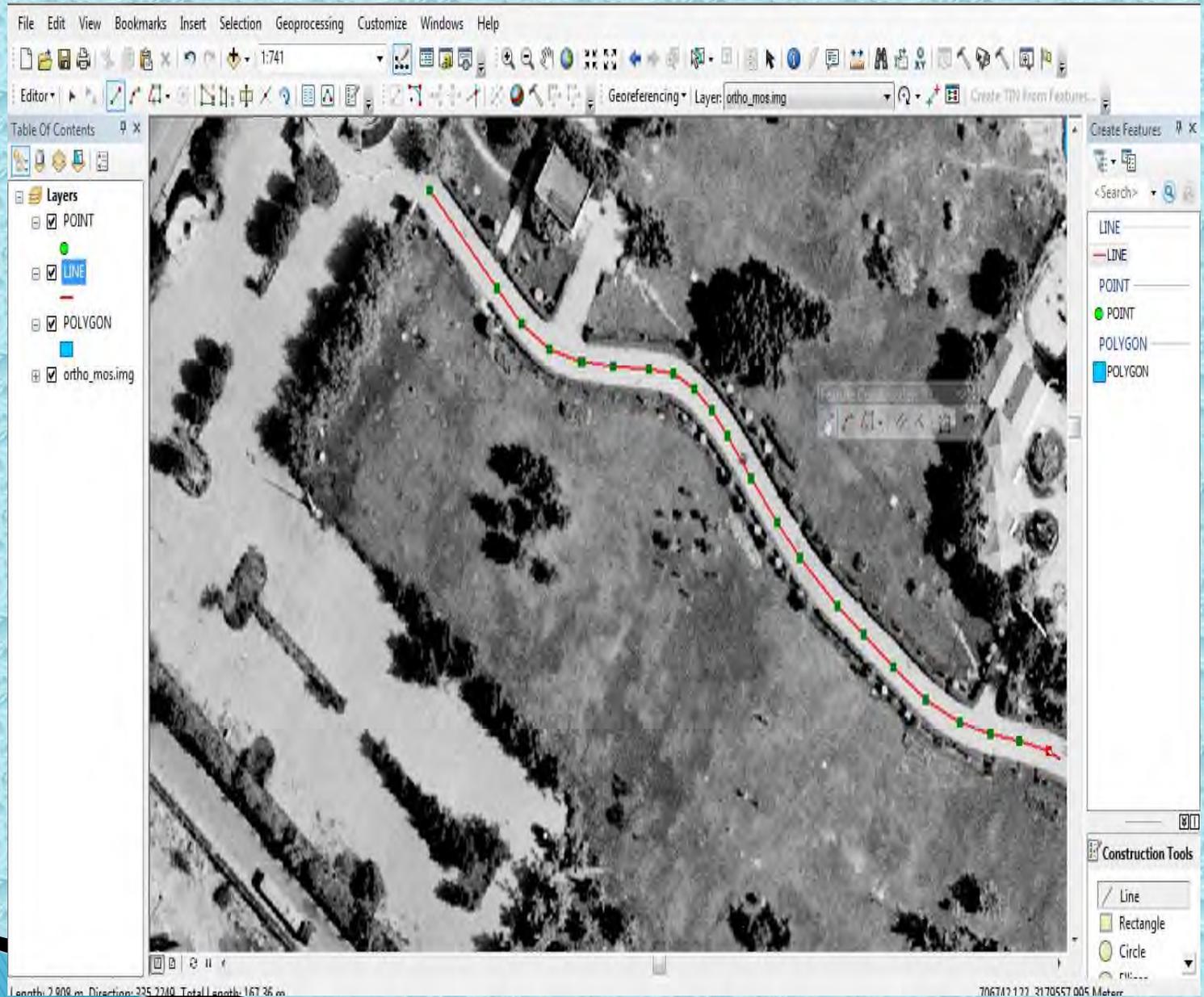
GIS In Map Making

Capturing Features Using GIS

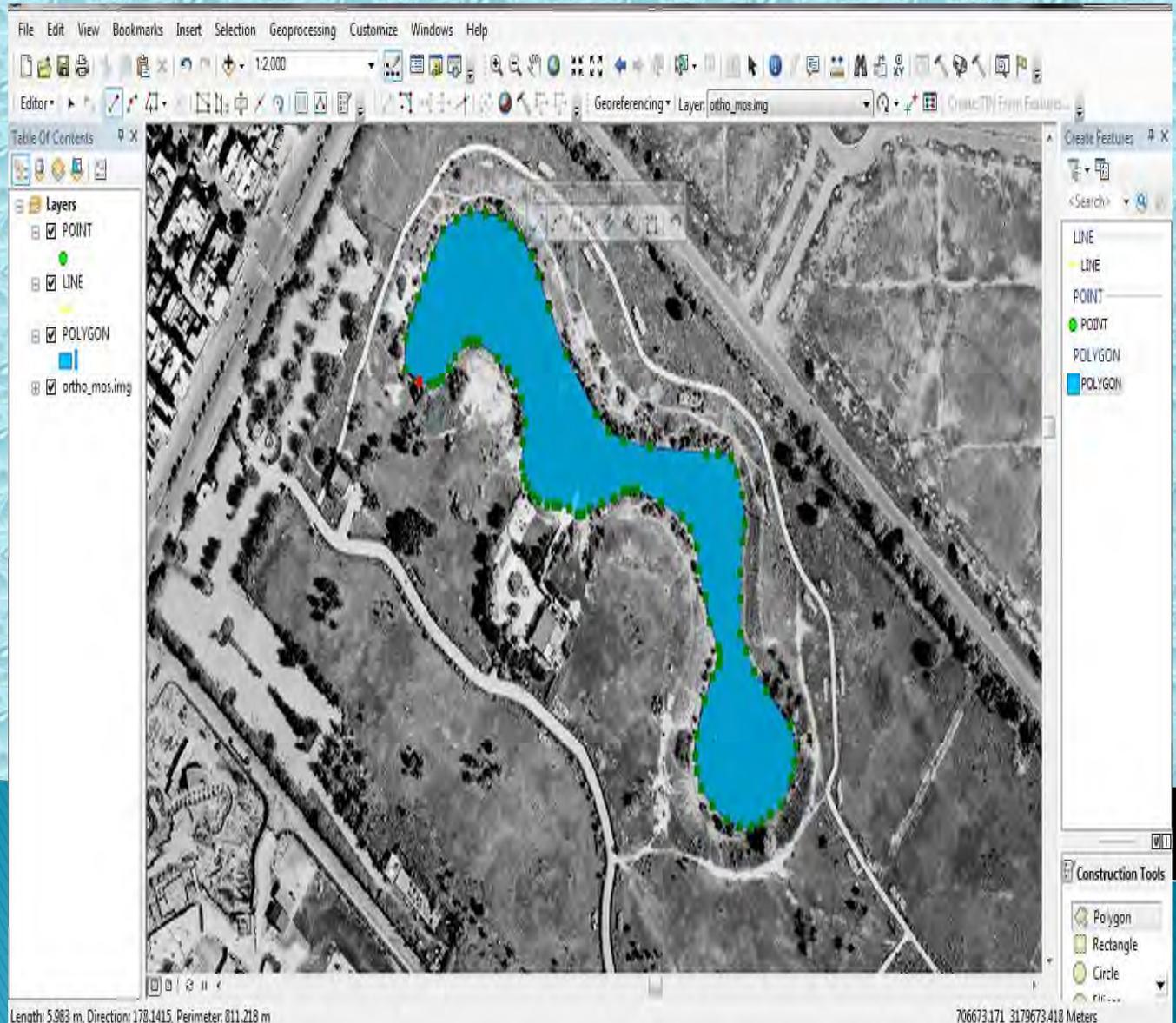
▶ Point



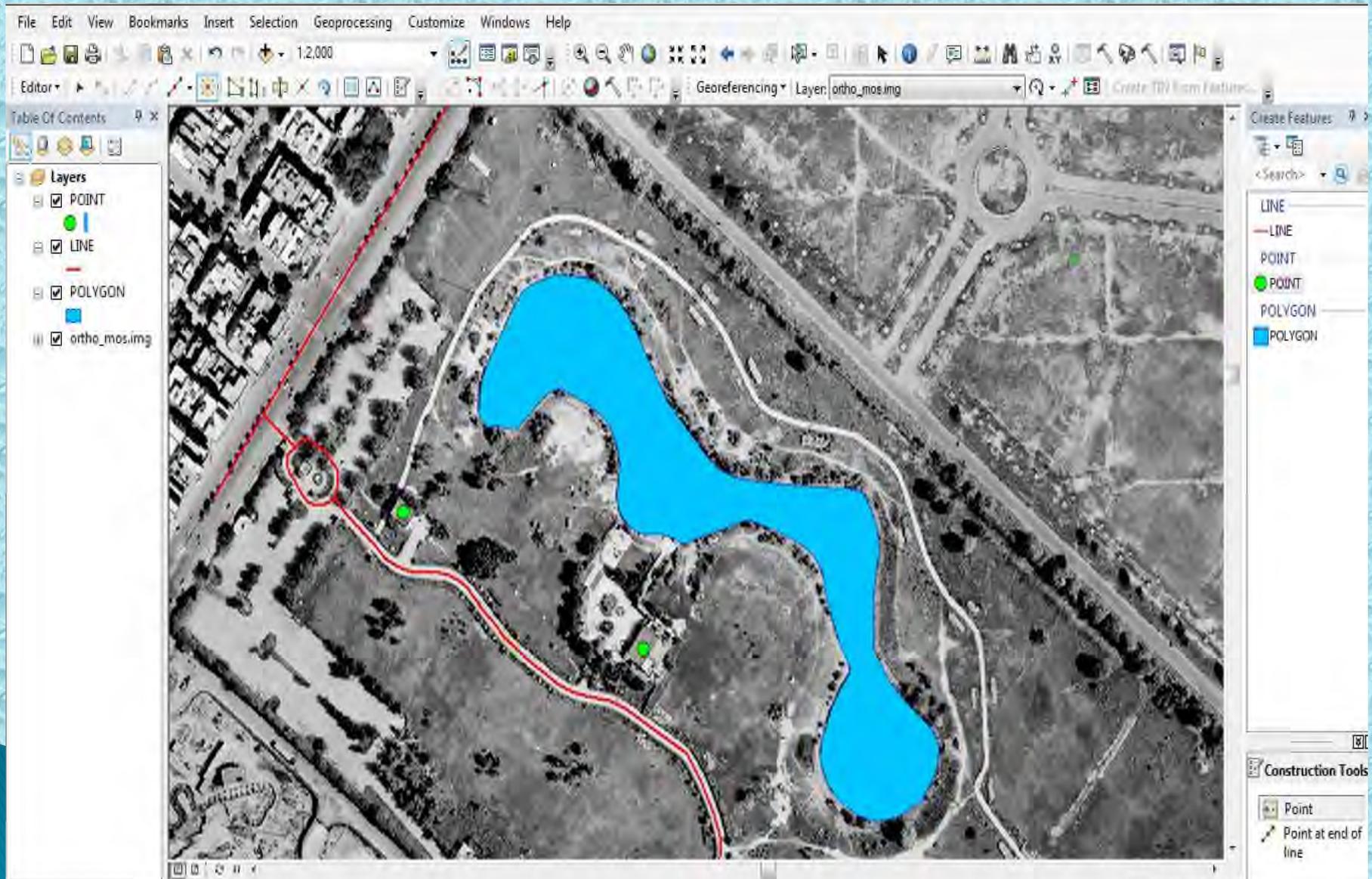
▶ Line



Polygon



Final Layout



OLD MAPPING TECHNIQUES

- ▶ Mapping was difficult



MAPPING WITH GIS

- ▶ Mapping is easy



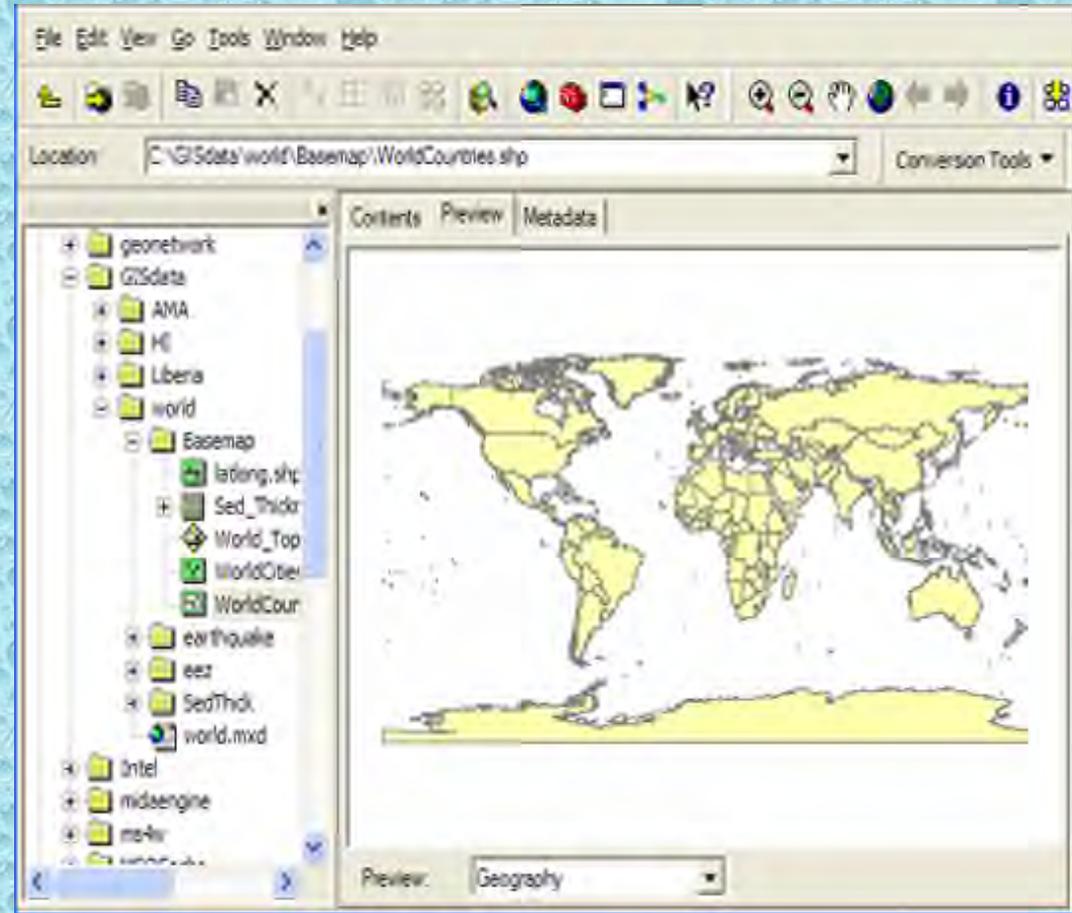
OLD MAPPING TECHNIQUES

- ▶ Cannot find correct data when needed



MAPPING WITH GIS

Data retrieval is easy



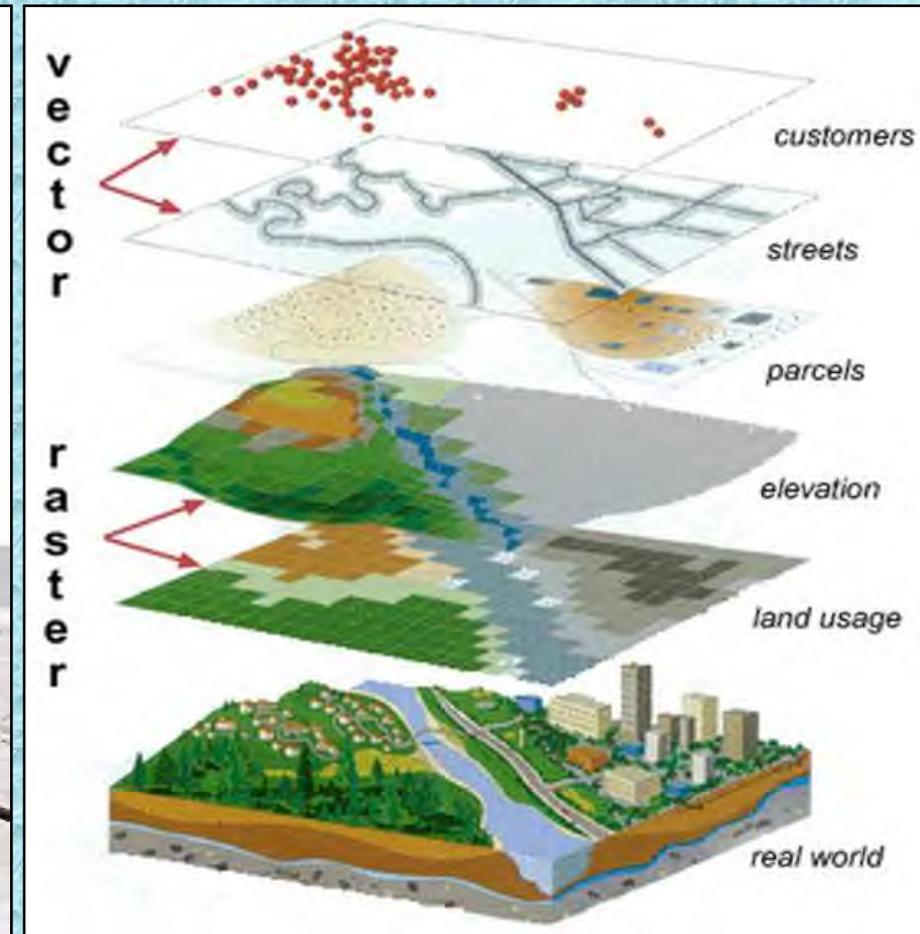
OLD MAPPING TECHNIQUES

- ▶ Combining data and maps for a study is time-consuming and difficult



MAPPING WITH GIS

- ▶ The capability of spatial analysis, decision-making increased a lot with GIS.



OLD MAPPING TECHNIQUES

- ▶ Number of maps produced is limited by the person-time required
- ▶ Maps and data are out of date, incomplete, inaccurate
- ▶ Dependent on personal knowledge and memory
- ▶ Products are not standard

MAPPING WITH GIS

- ▶ With the GIS mapping is not only faster, but different options can now be tried with the saving of preparation time.
- ▶ The GIS data can be collected over a period of time and then used to produce the results (Temporal mapping)
- ▶ Its computer based system hence no dependency on personal knowledge and memory
- ▶ GIS data accuracy has developed enough interest that buying it makes good business sense and helps in revenue generation.

FUTURE SAVINGS / BENEFITS

- ▶ **In Future any design and implementation of the new development review system project cannot be discussed without the mention of GIS and the necessity that this new review system be linked to its database.**

CONCLUSION

- ▶ **GIS has proven to be a valuable tool for the persons and organizational units.**
- ▶ **Implementation of GIS technology can mature and adapt to the current trends in the industry (i.e., 3D) and continue to serve the Country.**
- ▶ **As GIS increasingly penetrates a number of academic subjects and integrates further into mainstream business, the need to build close relationships between academia and the business community is stronger than ever.**

THANK YOU

