

# Data input and verification

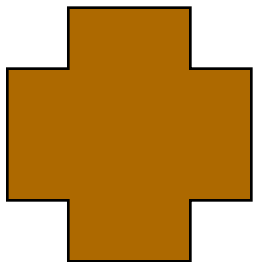
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Analysis



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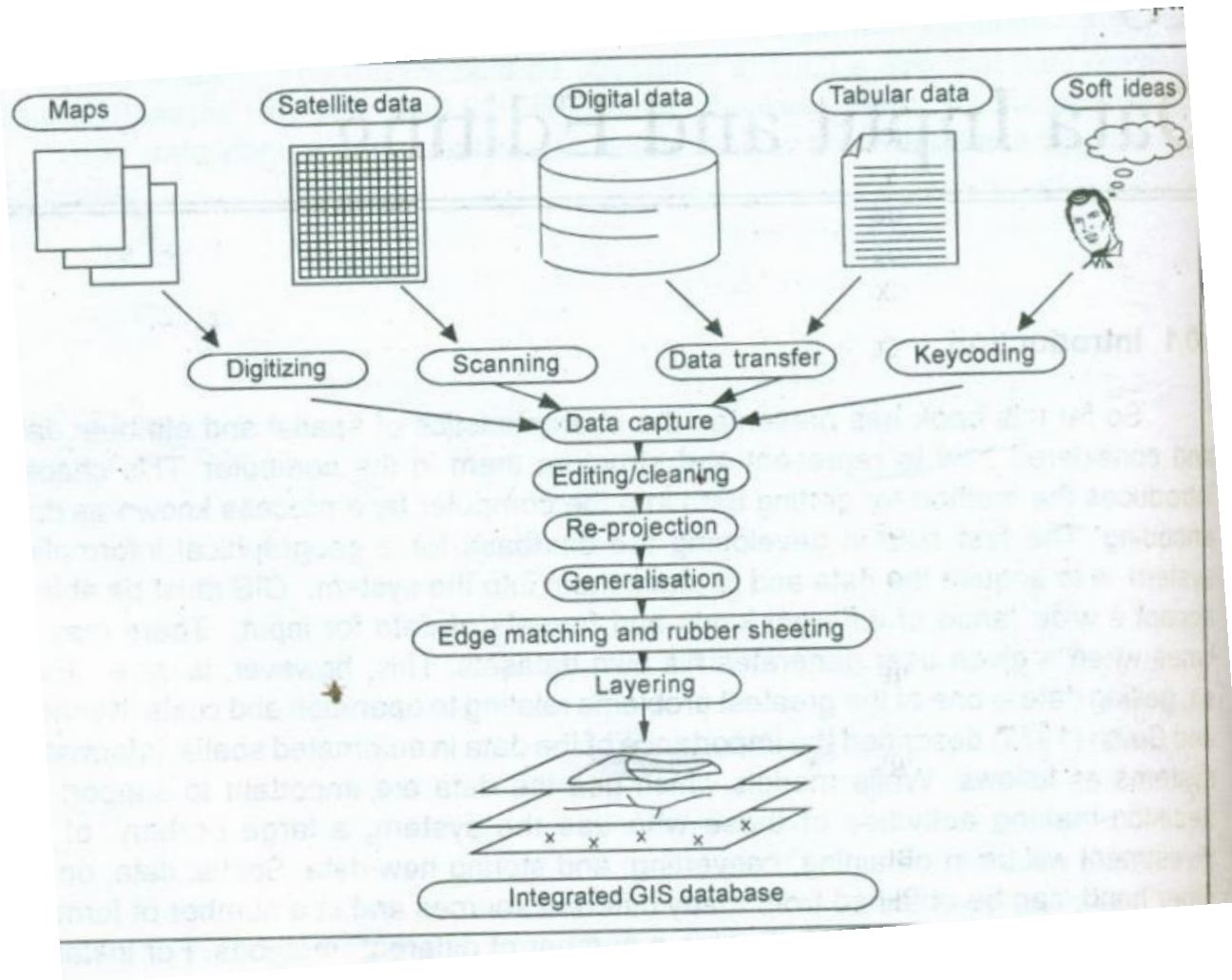
Decisions



# Introduction

- Introduce the method for getting data into the computer by the process is known as ‘encoding’ i.e characteristics of spatial and attribute data and is considered how to represent and structure them in computer.
- I st step is developing a data base for geographical information system
- Acquire the data and place them into the computer

# Data stream.....



variety of forms

## 1. Graphic and tabular forms

Includes maps, photographs, or may be non spatial information from the site visits.

## 2. Digital form

Digital spatial such as computer records of demographic data, land ownership data, magnetic tapes containing information about topography and remotely sensed imagery.

# Existing data types and their source in India

Data Type	Data Source
Topography Digital Elevation Model Digital Terrain Data	GSI, NATMO, SOI
Land Use and Land Cover Ownership and Political Boundaries Transportation	SOI, Land Records R & D, A.P.S.R.T.C.
Hydrography	Ministry of Water Resources State & Central Ground Water Board
Socioeconomic and Demographic data Census Tract Boundaries Demographic Data	Department of Census Bureau of Economics & Statistics
Soils	NAIMO
Wetlands	NATMO
Remotely Sensed Data	National Remote Sensing Agency

GSI - Geological Survey of India

NATMO - National Atlas Thematic Mapping Organisation

SOI - Survey of India

APSRTC -Andhra Pradesh State Road Transportation Corporation

# Creation of data

- ❖ Existing resources
- ❖ Develop your own data sets
- ❖ Field work
  - General trend of ground water, elevation ,annual cycle changes of discharge and recharge

## **Data input**

Analog (non digital) and digital sources of spatial data

Methods of data input

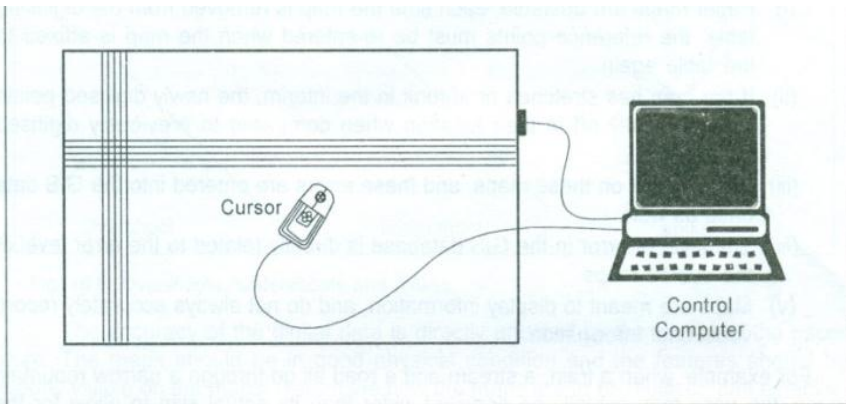
- 1.Key board entry
- 2.Manual digitization
- 3Auto magnetic digitization
- 4.Scanning



# Digitizing

Digitization on is a process of capturing a series of points and lines

- Tablet digitizing



- Heads-up digitizing

Often “drawing” features over an orthophoto base



# Data Editing

The storage and editing subsystem of GIS provides a variety of tools for storing and maintaining the digital representation of study area.

It provides a tool for examining the each coverage for mistakes that may have crept into our perception

The input data that is encoding may consists no. of errors derived from the original data sources as well errors that have been introduced during the encoding

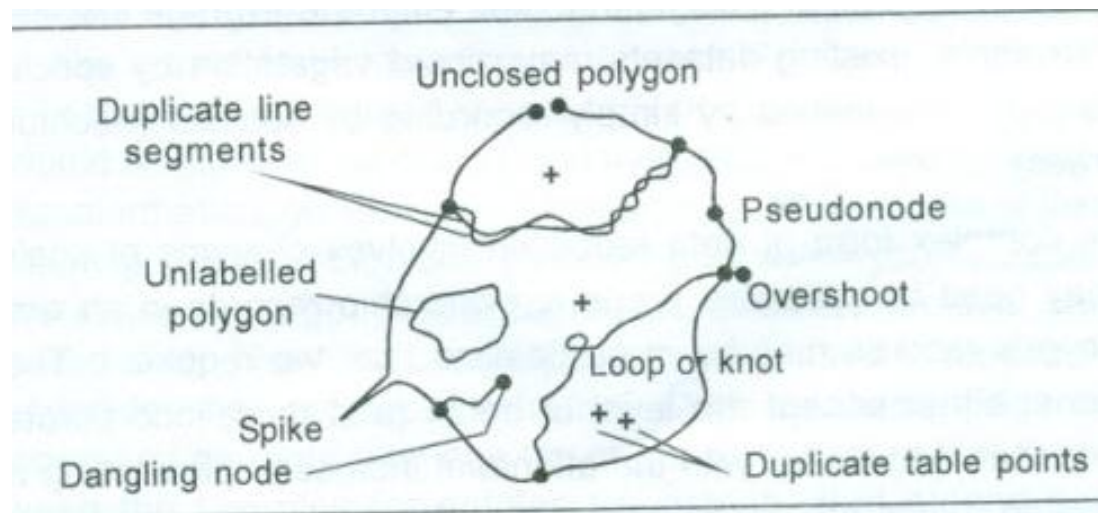
There may be errors in coordinate data as well as inaccuracies and uncertainties in attribute data

- The process of detecting and removing errors through editing is called **“Cleaning”**
- Error groups into 3 types
- i. Entity errors ii. Attribute error iii. Entity and attribute error
- Data editing and cleaning of GIS data base are covered under 3 sub heads
- a. Detecting and correcting errors
- b. Data reduction and generalization
- c. Edge matching and rubber sheeting

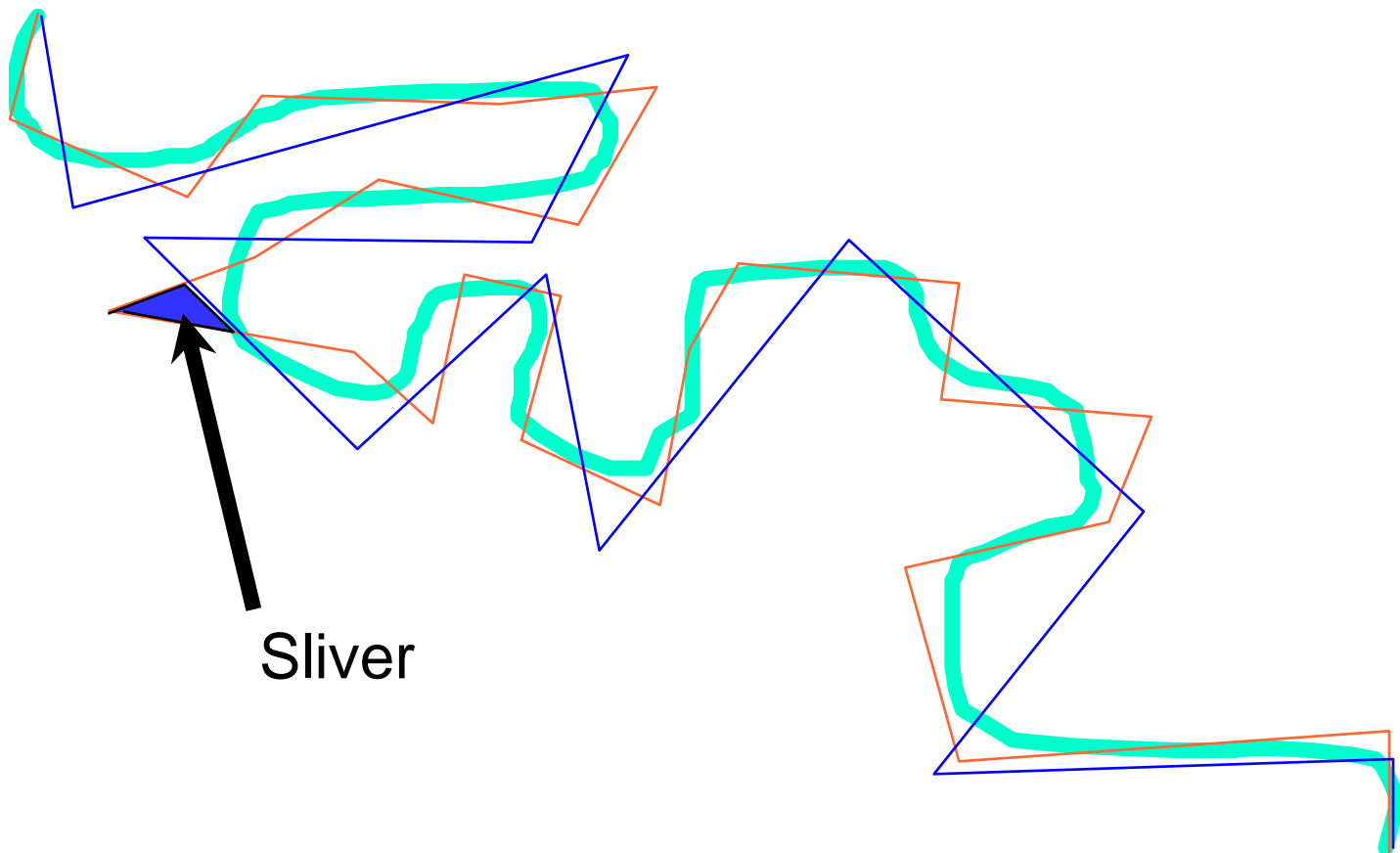


# Detecting and correcting errors

Error	Description
Missing entities	missing points, lines or boundary segments
Duplicate entities	points, lines or boundary segments that have been digitised twice
Mislocated entities	points, lines or boundary segments digitised in wrong place.
Mislocated labels	unidentified polygons
Duplicate labels	two or more identification labels for the same polygon.
Artifacts of digitising	undershoots, overshoots, wrongly placed nodes, loops and spikes
Noise	Irrelevant data entered during digitising, scanning or data transfer.

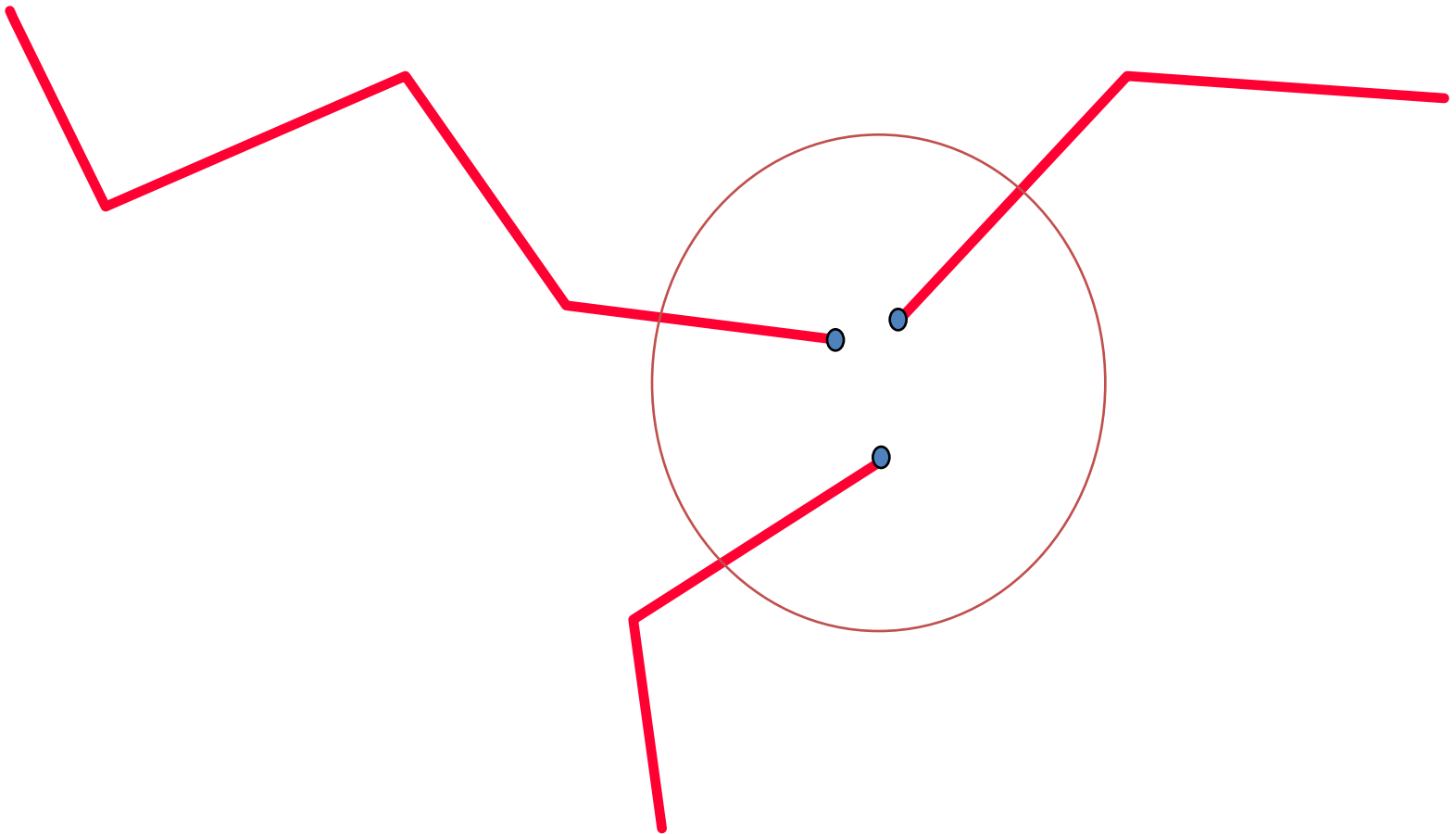


# Slivers



Sliver

# Unsnapped node



Errors	Before correction	After correction
Pseudo-node		
Undershoot		
Overshoot		
Clustered node		
Sliver polygon		
Duplicate objects		
Breaking crossing objects		
Co-ordinate thinning		
Label errors		

## Error and corresponding action to remove that error

Error	Action
Missing segment	Draw it
A gap between two segment	indicate which arc to extended or which node to move
An overshoot	delete node if needed
An undershoot	merge nodes and extended segment