SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF AUTOMOBILE ENGINEERING

AUTOMOTIVE SAFETY & INFOTRONICS

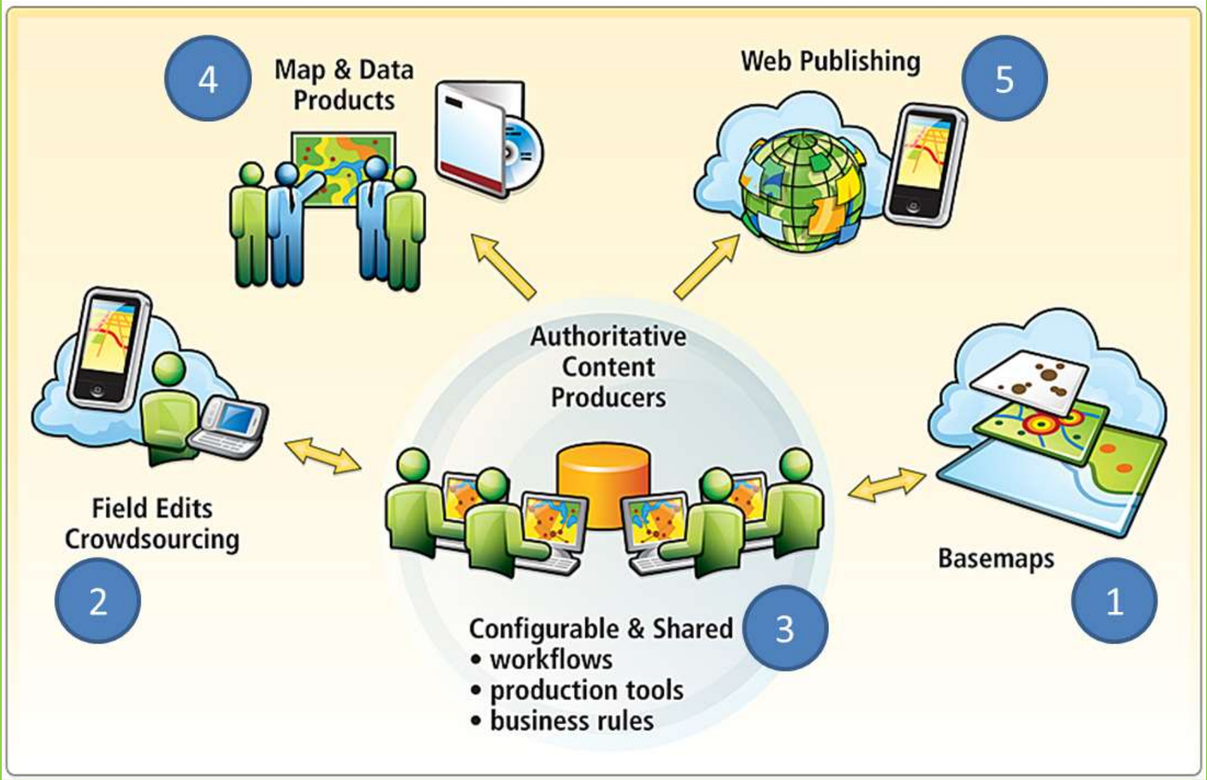
UNIT V – INFOTRONICS FOR AUTOMOBILES

TOPIC 2 :GEOGRAPHICAL INFORMATION SYSTEM

PRESENTATION OUTLINE

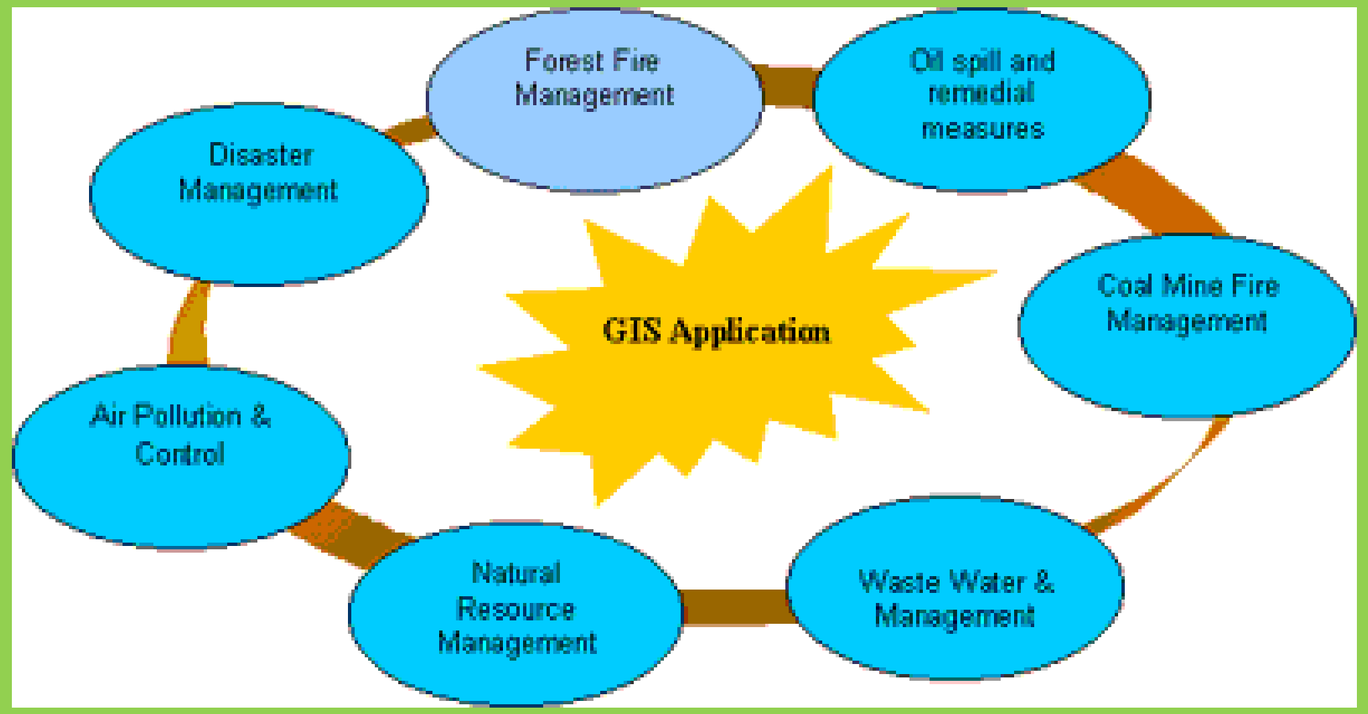
- GIS
- Application
- Components of GIS
- Spatial Data vs Attribute Data
- GIS Operations
- Geographic Coordinate System
- Datum
- Map Projections

GIS



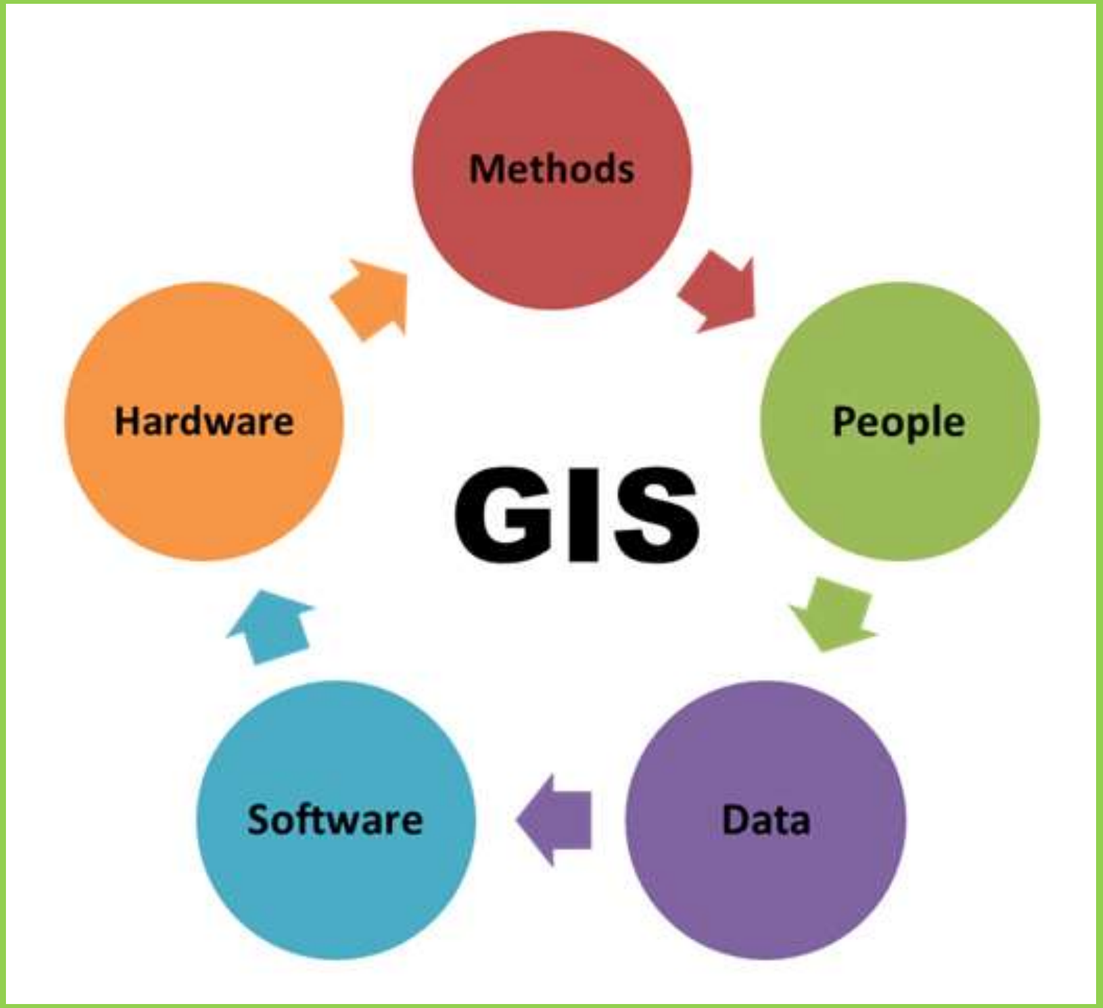
- Geographical Information System
- A computer based system for capturing, storing, querying, analyzing and displaying geospatial data
- The ability of GIS is to handle and process geospatial data distinguishes GIS from other information systems

APPLICATION OF GIS

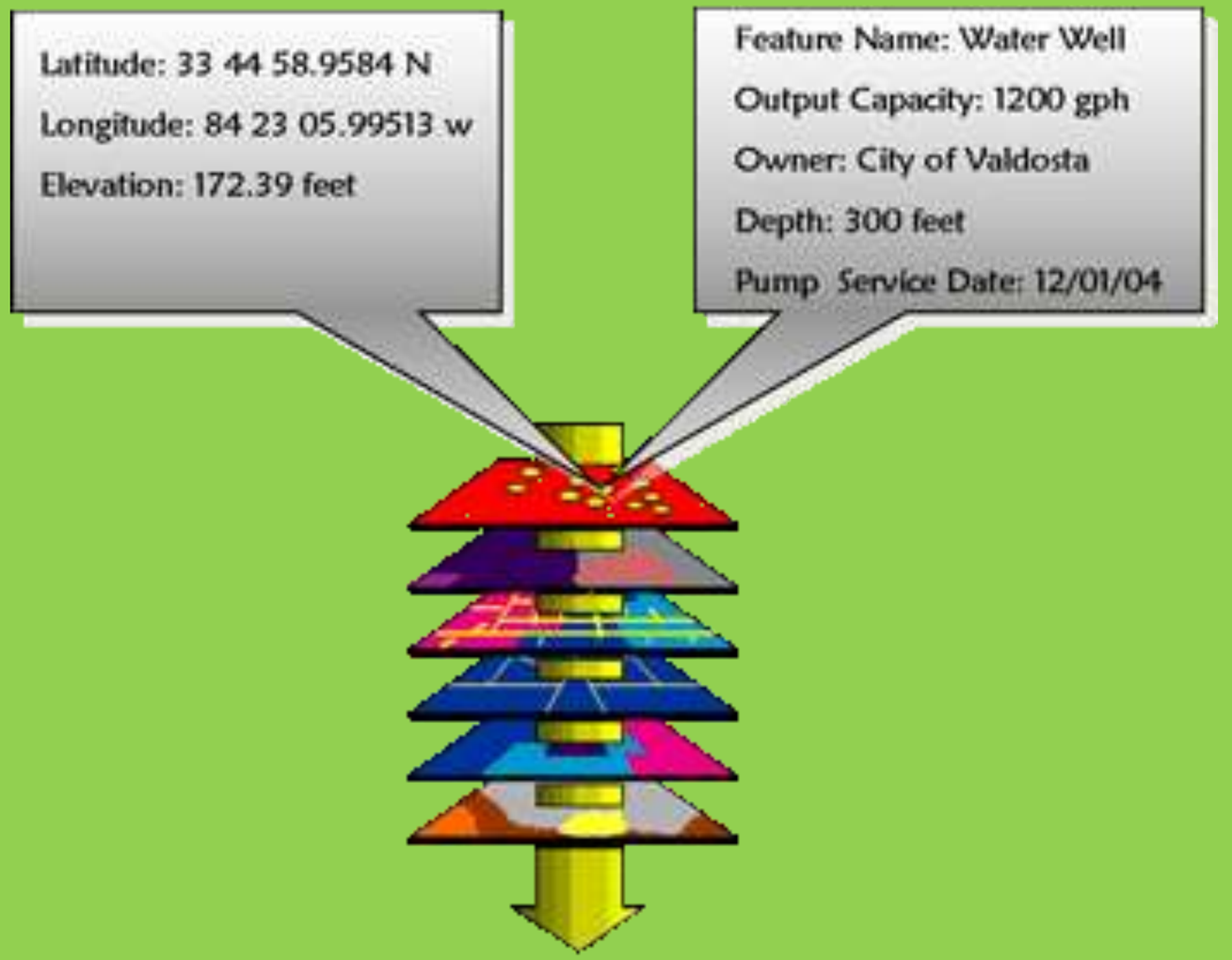


- Natural resource management including land use planning
- Natural hazard assessment
- Wildlife habitat analysis
- Riparian zone monitoring
- Timber management

COMPONENTS OF GIS

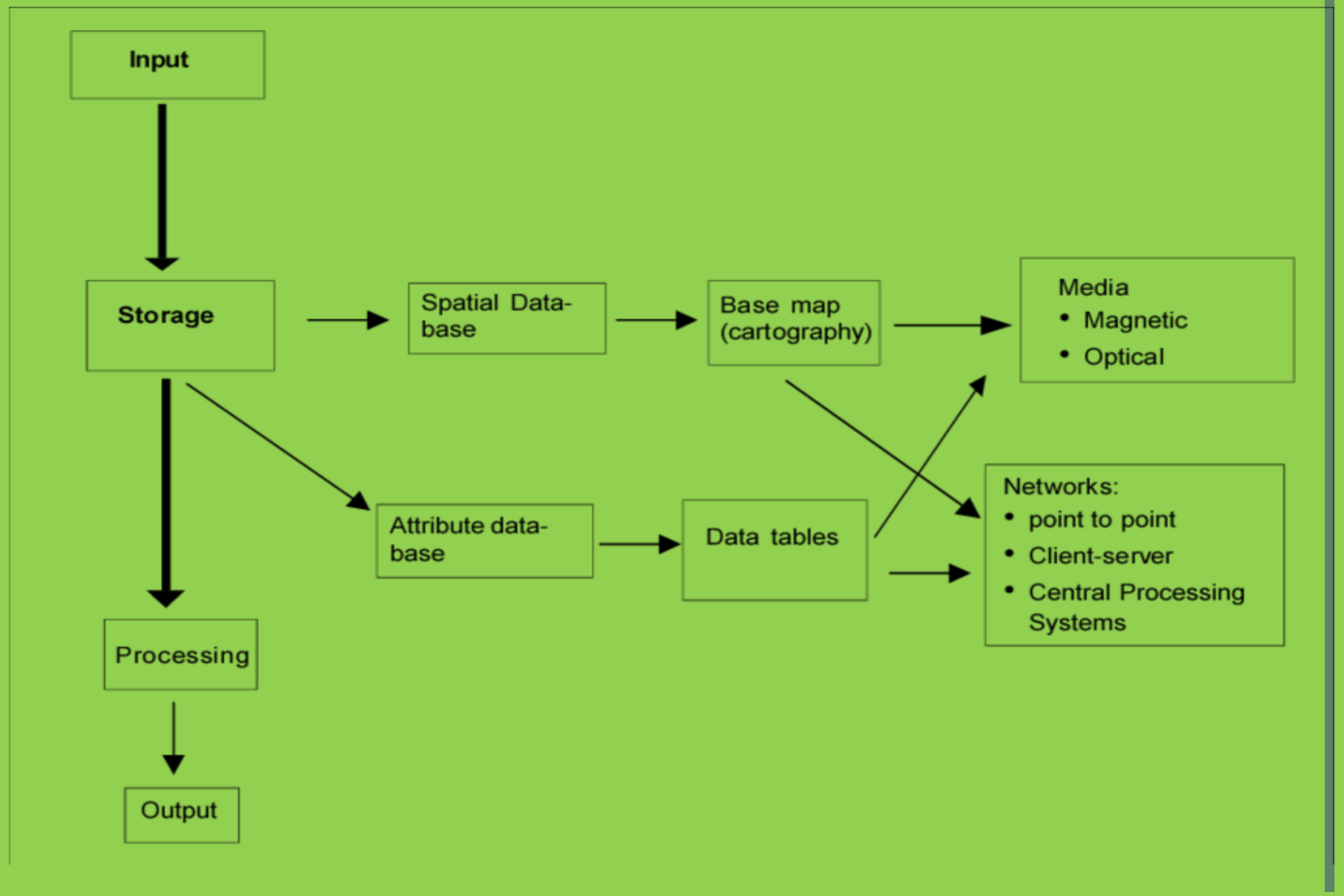


SPATIAL DATA VS ATTRIBUTE DATA

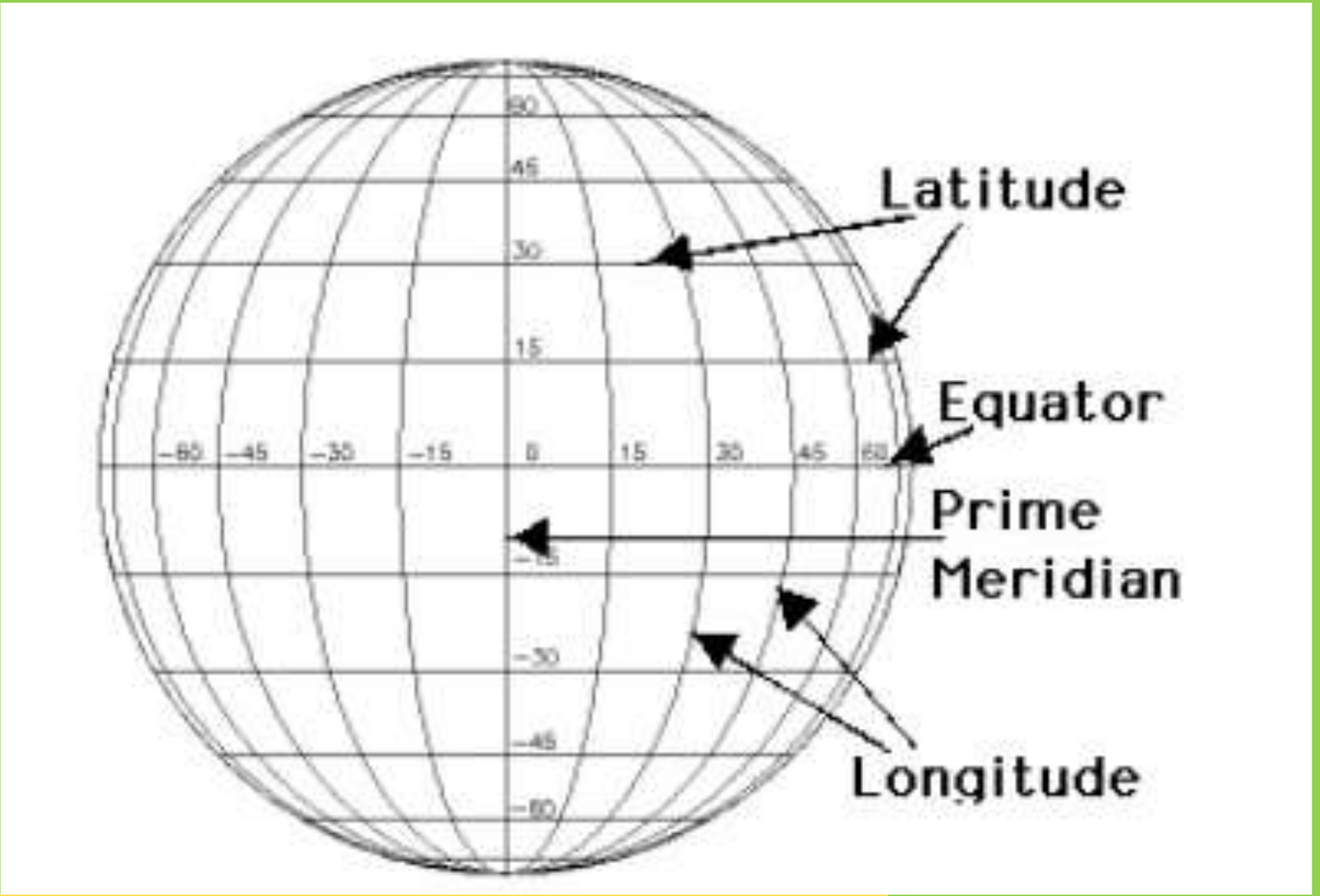


GIS OPERATIONS

- Spatial Data Input (Data entry, Geographic transformation, Projection
- Attribute Data Management (Verification, Attribute Data manipulation)
- Data Display (Cartographic Symbolization, Map Design)
- Data Exploration (Attribute Data Query, Spatial Data Query, Geographic Visualization)
- Data Analyzing



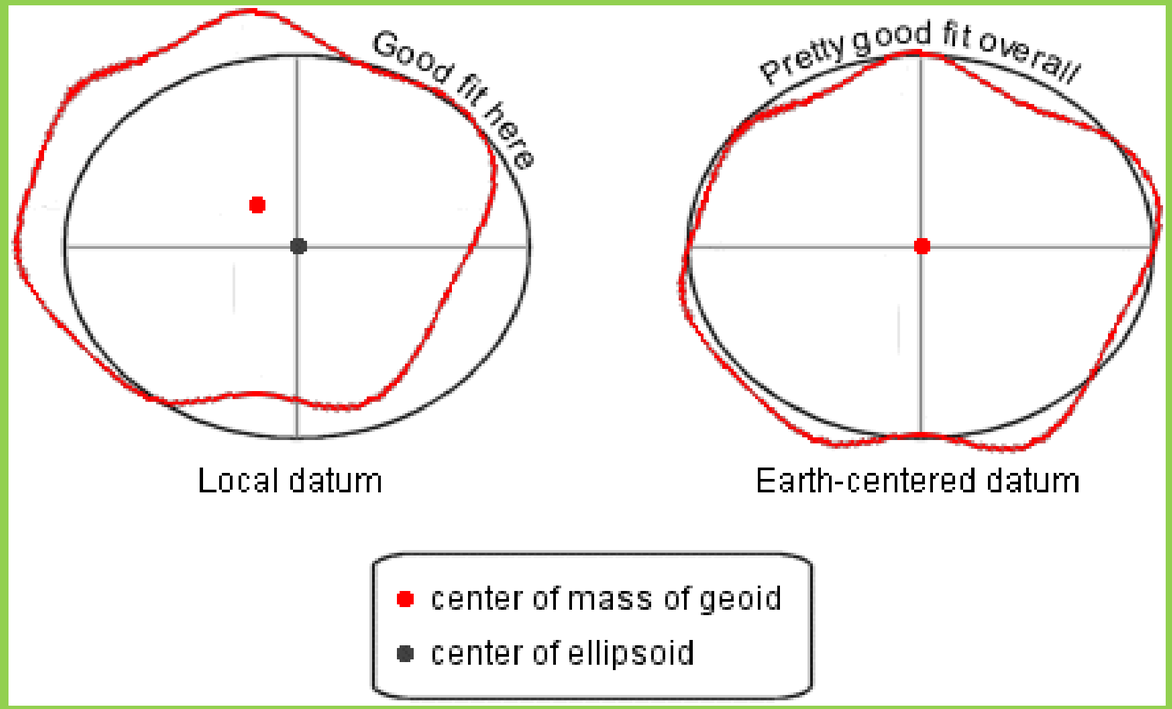
GEOGRAPHIC COORDINATE SYSTEM



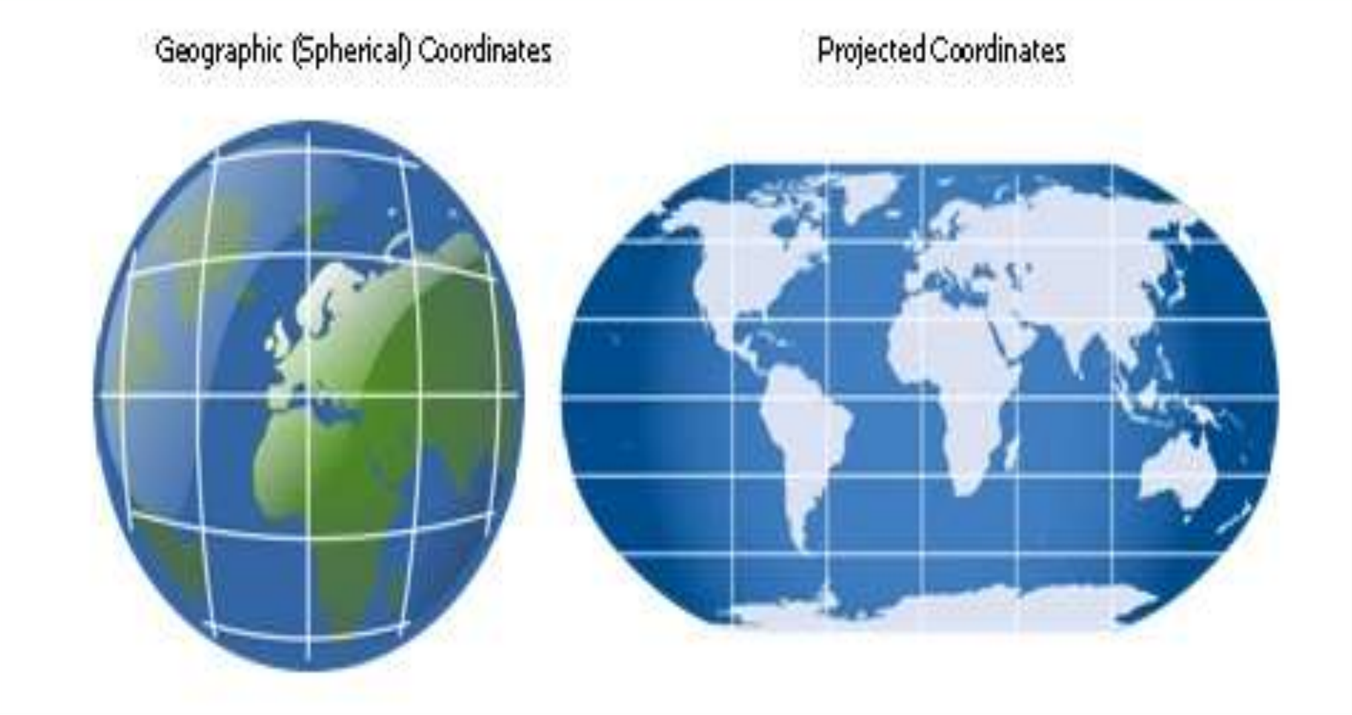
DATUM

- While a spheroid approximates the shape of the earth, a datum defines the position of the spheroid relative to the center of the earth

- A datum provides a frame of reference for measuring locations on the surface of the earth. It defines the origin and orientation of latitude and longitude lines



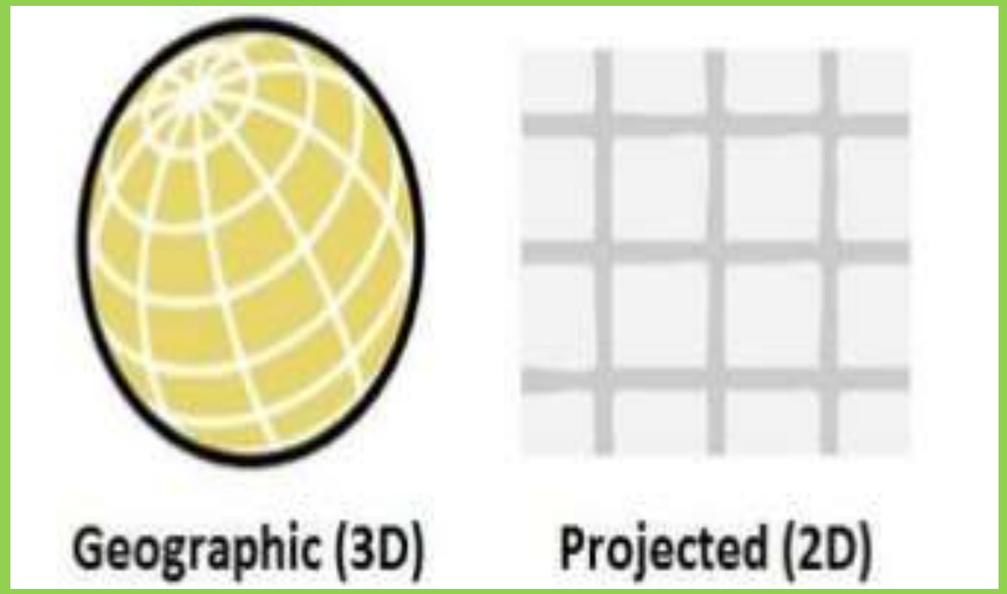
MAP PROJECTION SYSTEM



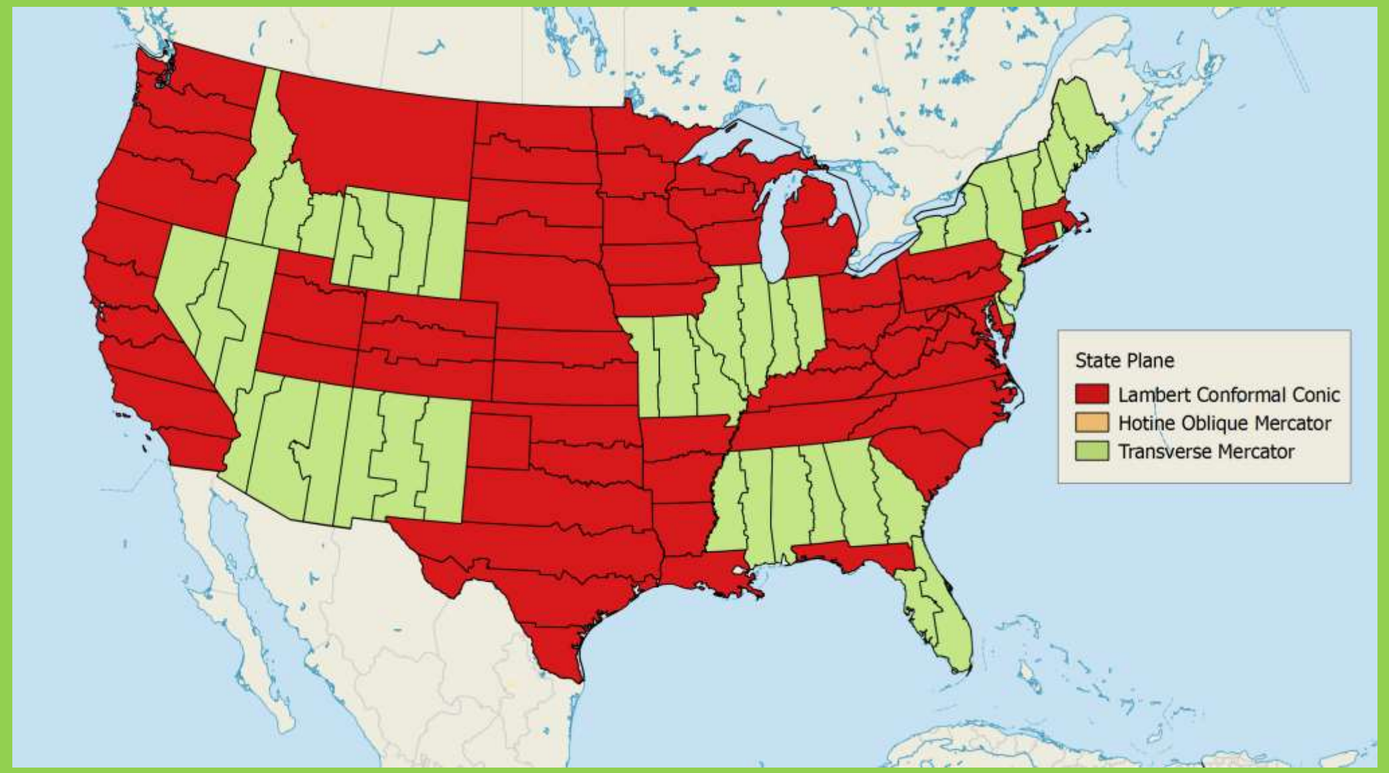
- A method for representing part of the surface of earth or a celestial sphere on a plane surface
- Projected Coordinate System
- State Plane Coordinate System
- Public Land Survey System

PROJECTED COORDINATE SYSTEM

- A projected coordinate system is a two dimensional planer surface
- The earth surface is three dimensional
- Transforming three dimensional space into two dimensional space



STATE PLANE COORDINATE SYSTEM



- State Plane Coordinate System is not a projection known as SPC, State Plane and a state
- It’s a coordinate system

REFERENCES

- George A. Peters, Barbara J. Peters, “Automotive Vehicle Safety” CRC Press, 2002
- Richard Bishop, “Intelligent Vehicle Technology and Trends” Artech House, 2005

Thank you