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Spatial data and its management in GIS

LECTURE 6



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6.1 Introduction

- Geospatial data has significantly different structure and function. It includes structure data about objects in the spatial universe—their identity, location, shape and orientation and other things we may know about them
- In geographical data all the objects are described in terms of points, lines, tables and polygons constituting the tabular portion of geospatial data



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6.2 What is a GIS

- A geographic information system (GIS) is a computer-based tool for mapping and analysing things that exist and events that happen on earth.



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6.3 Importance of GIS

- Perform Geographic Queries and Analysis
- Improve Organisational Integration
- Make Better Decisions
- Making Maps much more



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6.4 How GIS works

- A GIS stores information about the world as a collection of thematic layers that can be linked together by geography.
- This simple but extremely powerful and versatile concept has proven valuable for solving many real-world problems from tracking delivery vehicles, to recording details of planning applications, to modelling global atmospheric circulation



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6.5 Geographic References

- Geographic information contains either an explicit geographic reference, such as a latitude and longitude or national grid coordinate or an implicit reference such as an address, postal code, census tract name, forest stand identifier or road name.
- An automated process called geo-coding is used to create explicit geographic references (multiple locations) from implicit references (descriptions such as addresses).



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6.6 Vector and Raster Models

- Geographic information systems work with two fundamentally different types of geographic models - the “vector” model and the “raster” model.
- The **vector** model is extremely useful for describing discrete features,.
- The **raster** model has evolved to model continuous features.



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6.7 Components of GIS

- Hardware
- Software
- Data
- People
- Methods



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Thank You