



*Spatial ER Design*

from Shekhar/Chawla. Spatial Databases. A Tour

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Example Spatial Application Domain

⊕ Spatial application domain

- ❏ A *state-park* consists of *forests*.
- ❏ A forest is a collection of *forest-stands* of different species
- ❏ State-Park is accessed by *roads* and has a *manager*
- ❏ State-Park has *facilities*
- ❏ *River* runs through state-park and supplies water to the facilities

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The ER Model

⊕ 3 basic concepts

- ❏ Entities have an independent conceptual or physical existence.
  - Examples: Forest, Road, Manager, ...
- ❏ Entities are characterized by Attributes
  - Example: Forest has attributes of name, elevation, etc.
- ❏ An Entity interacts with another Entity through relationships.
  - Road allow access to Forest interiors.
  - This relationship may be name "Accesses"

⊕ Comparison with Object model of spatial information

- ❏ Entities are collections of attributes like objects
- ❏ However ER model does not permit general user defined operations
- ❏ Relationships are not directly supported in Object model
  - but may be simulated via operations

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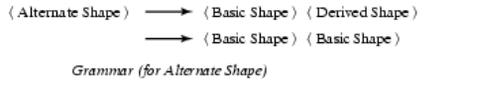
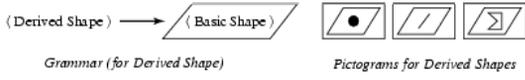






Entity Pictograms: Derived and Alternate Shapes

- Derived shape example is city center point from boundary polygon
- Alternate shape example: A road is represented as a polygon for construction
  - or as a line for navigation




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