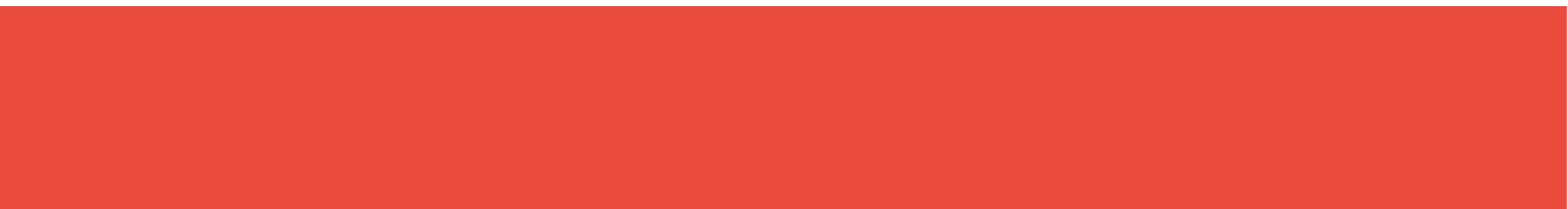A GEOGRAPHIC database can be defined as "collections of similar data that are related either through location, data structure or type, or common underlying purpose".

Graphic data in geographic databases consists of points, lines, polygons, and other map or cartographic features such as projections, coordinate systems, and cartographic symbols. Graphic data is commonly stored in the database in the form of coordinates, symbols, rules, or pixels.

There are two methods in which graphic data can be stored within a geographic database: vector or raster.

Vector data are denoted by coordinates (example, x and y or latitude and longitude) of nodes and lines or rules for connecting the various lines into areas. Vector data defines objects, polygons, and other involved units so that they can be displayed or analyzed based upon their associated attributes.

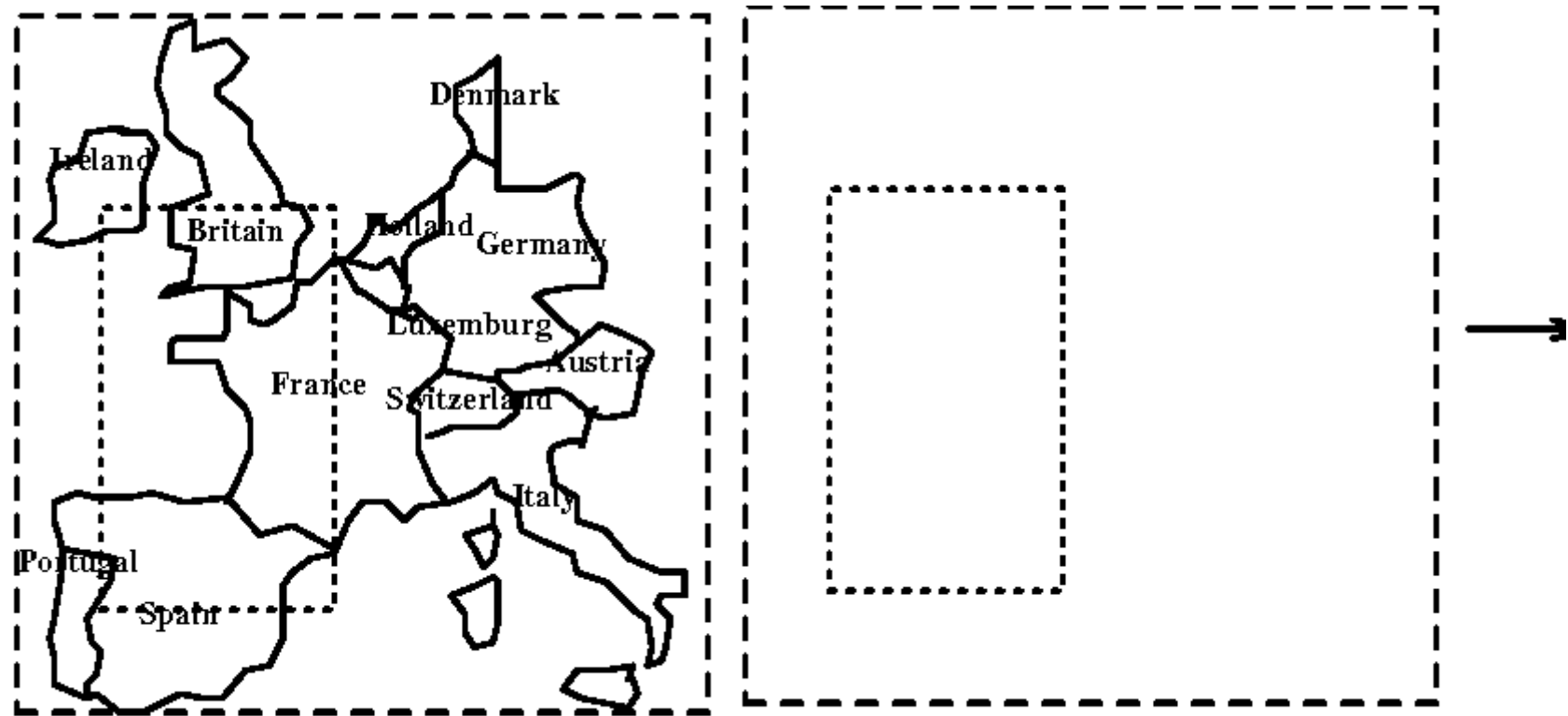Raster data sets are stored as a set of uniform grid cells that represent a continuous surface.

Management of geographic databases is very important to help ensure the accuracy of the data, the integrity of the database, and the reliability of the analysis done using a particular database.

Examples of geographic indexes include street addresses, mailing addresses, parcel numbers, or account numbers. Spatial relationship examples include various topological relationships such as connectivity, adjacency, and proximity. All of these elements of nongraphic geographic data are stored in geographic databases as alphanumeric characters.

An example of an identifier or geocodes would be used to describe items or actions at a geographic location such as building permits, accident reports, or tax records. Nongraphic data within a geographic database can take the form of a geographic index or be used to describe a spatial relationship.

Role of DBMS

System

Task

Geographic Information System

- Data load
- Editing
- Mapping
- Analysis

Object-Relational Database Management system

- Storage
- Indexing
- Security
- Query
- Backup

Data