Spatial Data

The spatial data or real world features are very complex. So, spatial data is simplified before they are entered into the computer. The common way of doing this is to break down all geographic features into three basic entity types – points, lines and areas. Points are 'one dimensional' objects, used to represent features that are very small, e.g. a post box, an electric pole, a well or tube well etc. Only latitudinal and longitudinal values or a coordinate reference can be given to these features to explain their location. Lines are two dimensional objects and are used to represent linear features, for example roads and rivers. Lines are also used to represent linear features that do not exist in reality, such as administrative boundaries and international boundaries. Areas are three dimensional objects and are represented by closed set of lines and are used to define features such as agricultural fields, forest areas, administrative areas etc. Area entities are often referred to as polygons.

The representation of real world features using the point, line and area entity types appears relatively simple. However, the appropriate entity to represent real world features is often difficult and it depends upon the scale of the map. On a world map, cities are represented by points. It only gives information about number of cities shown on the world map. At national or regional scale, the 'point' entity to represent cities is considered too simple, as it tells us nothing about the real size of the city. In this case, cities are represented by 'area' entity. At the local scale, 'area' entity to represent cities would be considered too simple. In this case, cities are represented by mixture of 'point', 'lines' and 'areas' as entities. Points may be used to represent features such as electric poles, post boxes etc. Likewise lines and areas may be used to represent road networks and residential blocks respectively. So, the decision makers decide the 'entities' through which different features of real world would be represented.