

Vector and Raster data

In
GTS

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① Vector Data :-

Vector data consists of individual points, which are stored as pairs of (x, y) co-ordinates. The point may be joined in a particular order to create lines, or joined into closed rings to create polygons.

② Types of Vector Data :-

i. Point.

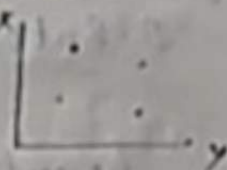
ii. Line.

iii. Polygon.

③ Points :-

Vector points are simply xy coordinates. Generally, they are latitude and longitude with a spatial reference frame. When features are too small to be represented as polygons, points are used.

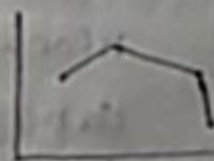
Ex. - House, population etc.



④ Lines :-

Vector lines connect each vertex with paths. Basically you are connecting the dots in a set order and it becomes a vector line with each dot representing a vertex.

Ex. - River, Road etc.



⑤ Polygon :-

When join a set of vertices in a particular order and close it, this is now a vector polygon feature.

Raster Data

The Raster data is made up of pixel has an associated value. Simplifying slightly, a digital photograph is an example of a raster dataset, where each pixel value corresponds to a particular colour.

In GIS, the pixel values may represent elevation above sea level, or chemical concentrations or rainfall etc.



Types of Raster Data :-

1. Satellite Imagery.
2. Binary Scanned File.
3. Graphics File.
4. Digital Elevation Models.
5. Digital Orthophotos.

Satellite Imagery :-

Satellite Imagery are image of the Earth or other planets collected by imaging satellites operated by governments and businesses around the world. Such data are recorded in raster format.

Satellite images can be displayed in black and white or in colour. Satellite images can also simulate color photographs if they have pixel values from the red, green, and blue spectral bands.

① Binary Scanned File:-

③

A binary image is one that consists of pixels that can have one of exactly two colours, usually black and white. Binary image also called bi-level or two-level. This means that each pixel is stored as a single bit that 0 and 1.

② Graphics File:-

In this type of raster data we can include maps, photographs and images which can be stored as digital graphic files. Major popular graphic files in raster format are - GIF (Graphic Interchange Format), PNG (Portable Network Graphics), JPEG (Joint Photographic Experts Group)

③ Digital Elevation Model:-

A digital elevation model (DEM) consist of an array of uniformly spaced elevation data. A DEM is point-based, but it can easily be converted to raster data by placing each elevation point at the center of a cell.

④ Digital Orthophotos:-

A digital orthophotos quad (DOQ) is a digitized image prepared from an aerial photographs or other remotely sensed data, in which the displacement caused by camera tilt and terrain relief has been removed.