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## GIS System:-

A GIS is a system that creates, manages, analyzes, and maps all types of data. GIS connects data to a map, integrating location data (where things are) with all types of descriptive information.

### Components of GIS:

GIS can be viewed as an integration of 3 components that are hardware & software, data, people.

#### 05 1. Hardware & Software:

Hardware relates to the devices used by end users such as graphic devices or plotters & scanners. Data storage & manipulation is done using a range of processors. With the development of Internet & web based application, web servers have become part of many system's architecture, hence most GIS's follows 3 tier

architecture

Software part relates to the processes used to define, store & manipulate the data & it is akin to DBMS.

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### 2-D data -

Known as the heart of GIS.

Geographic data are basically divided into two main groups that are raster and vector.

- Vector data/layers in GIS refers to discrete objects represented by points, lines and polygons.

Layers represent geometries that share a common set of attributes. Vector sources include digitized maps, features extracted from image surveys etc

- Raster data is a continuous grid of cells in two dimensions. Raster data are divided into categorical & continuous.

02 Categorical data is of soil type, vegetation type, land suitability & so on. Continuous raster 03  
images usually describe continuous phenomena in space. such as

Typical raster sources are aerial images, satellite images & scanned map images.

### 3. People -

People are involved in every phase of GIS & in collecting data. Including cartographers and surveyors who create the map and survey the land and geographical features. It also includes system users who collect the data, upload the data to system, manipulate the system & analyze the results.