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Definition-Concepts of GIS, Maps and their influences

What Is GIS Mapping?

GIS stands for geographic information system and the map is, of course, a visual representation of quantifiable data. Compared to traditional table maps, a GIS map is dynamic and interactive. It can reveal previously unseen features by highlighting them and show change of these features over time, based on the given attributes.

GIS Map: How Does It Work?

Since human eyes are wired to respond to different colors and shapes, a GIS map usually transforms real-world geospatial data into colored patterns or shapes. This speeds up processing of information, which leads to faster and better-informed decisions.

As far as the purely technical side of GIS mapping goes, the system ties a geospatial point containing latitude and longitude to a specific data element. Then a spatial analysis measures the distance between these points and determines the relationship between them, to better understand the planet.

Using this technology, geographers and other GIS professionals can visualize various kinds of statistics, including client base distribution and demand for a product or service, demographic facts, and other data. Mechanisms

Types Of Mapping In GIS

Depending on what exactly needs to be visualized, there are many different types of mapping in GIS. It can be anything from population density to crop classification. Some of the most common types of GIS maps are: category, heat, cluster, bubble, and quantity ones.

Category Maps

When you need to understand exactly which portions on the map correspond to which data segment, there is nothing else like a category GIS map. This is by far one of the most common types of GIS mapping, since it is the easiest to create. A specific category, or attribute, is assigned its own distinct color. The result is a convenient map of differently colored patches, each representing a particular category.

Heat Maps

Often mistakenly applied to quantity maps, the term “GIS heat map” actually describes a unique mapping convention. When the data you need to represent on the map is incredibly dense and mixed up, a general idea of “warmer” and “cooler” regions can help. Especially, if you know that the hottest spots represent the highest density of the given quantity.

It is more or less universally accepted that red stands for heat, while blue means cold. Not that it is incredibly precise, but it definitely provides a rough picture of quantity distribution.

Cluster Maps

This type successfully combines the use of colors, shapes, and labels to cluster densely packed points of data together. In other words, there are too many points to be displayed individually on the GIS map, so they are fused into a single cluster point for convenience.

Bubble Maps

A bubble GIS map is an example of using shapes and the difference in their size to simplify the layout of complex numerical data. For example, imagine you need to compare the amount of people using certain slang words for different locations. Bigger and smaller bubbles on the GIS map will represent more and less people, respectively. Instead of boring rows and columns of numbers, you get bubbles. This provides a quick general understanding of the relationship between quantities and locations at a glance, saving time and effort.

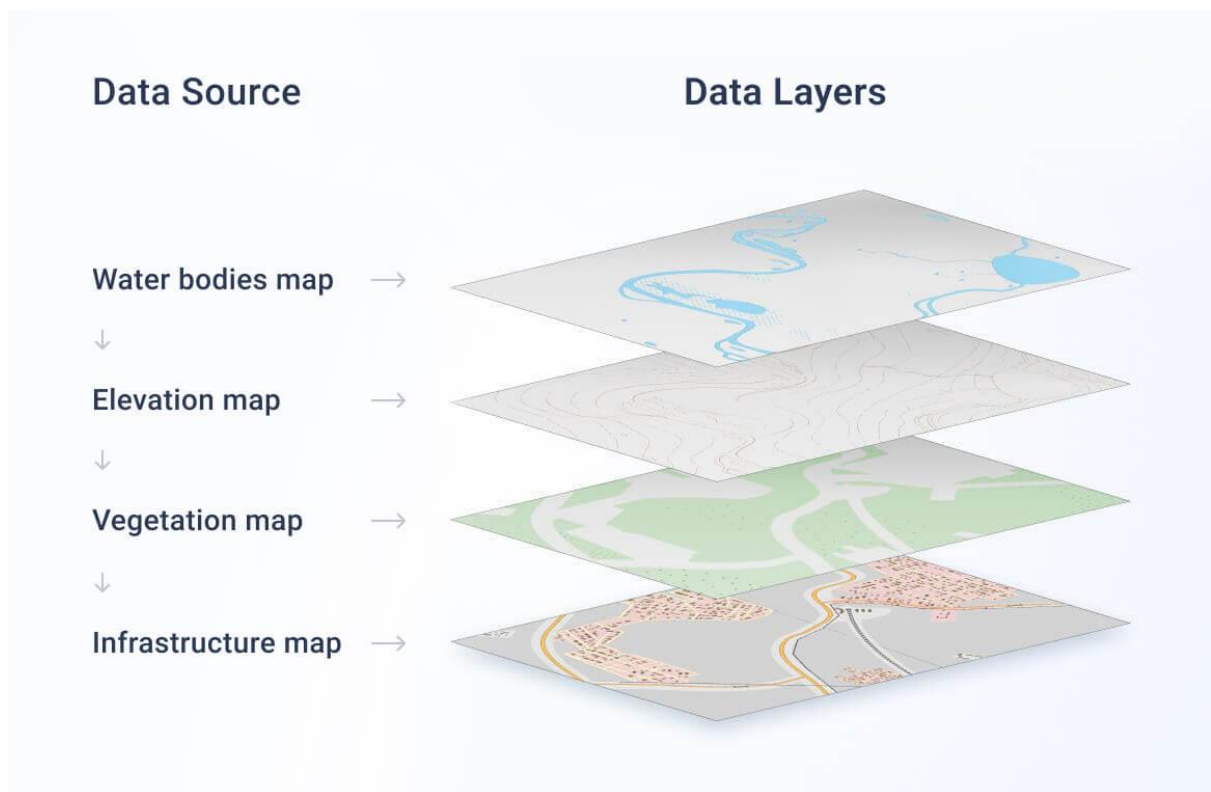
Quantity Maps

A GIS quantity map is color-coded, but uses different shades of the same color to show the variety in quantities of something depicted on the map. It is a perfect GIS mapping solution to the problem of visualizing a lot of detailed data spread over a large area.

What Is A GIS Map Layer

The magic of GIS map layers is that they allow for stacking different types of maps on top of each other on the same screen. This way different layers can intersect and synergize, providing much more information. The user can easily toggle between different layers, without confusing them.

The most basic layer is the so-called GIS base map. Most are familiar with the classic satellite view base map. Yet, depending on the specific purpose, any type of data can be used as a base map to build other layers upon it.



Interactive GIS Mapping

Today, we take most online maps for granted, without stopping and wondering how incredibly interactive they are. A traditional map can be well-crafted, but it lacks dynamics and is limited in space and time, acting as a still photo. It simply doesn't compare to, say, a Google Map, where you can:

- drag the map to any location;
- zoom in down to a single house;
- zoom out to see the whole world at once;
- switch between layers (political, physical, street view);
- click on different objects to learn what they are (identify them);

An average interactive GIS map has more to it than meets the eye. It can provide additional nuanced, relevant, and precise data to the user. Let's take a closer look at the most interesting GIS mapping system interactive tools.

Map Queries

Many GIS map systems have a query feature, which is basically a data filter. It shows which parts/regions on the map within a certain AOI (area of interest) share a common quality or represent the same quantity. A query is made by typing/asking a question, letting the system know which features to highlight.