

Attribute Data

There are two components to GIS data: spatial information (coordinate and projection information for spatial features) and attribute data. Attribute data is information appended in tabular format to spatial features. The spatial data is the where and attribute data can contain information about the what, where, and why. Attribute data provides characteristics about spatial data.

Types of Attribute Data

Attribute data can be store as one of five different field types in a table or database: character, integer, floating, date, and BLOB.

Character Data

The character property (or string) is for text based values such as the name of a street or descriptive values such as the condition of a street. Character attribute data is stored as a series of alphanumeric symbols.

Aside from descriptors, character fields can contain other attribute values such as categories and ranks. For example, a character field may contain the categories for a street: avenue, boulevard, lane, or highway. A character field could also contain the rank, which is a relative ordering of features. For example, a ranking of the traffic load of the street with “1” being the street with the highest traffic.

Character data can be sorted in ascending (A to Z) and descending (Z to A) order. Since numbers are considered text in this field, those numbers will be sorted alphabetically which means that a number sequence of 1, 2, 9, 11, 13, 22 would be sorted in ascending order as 1, 11, 13, 2, 22, 9.

Because character data is not numeric, calculations (sum, average, median, etc.) can’t be performed on this type of field, even if the value stored in the field are numbers (to do that, the field type would need to be converted to a numeric field). Character fields can be summarized to produced counts (e.g. the number of features that have been categorized as “avenue”).

Numeric Data

Integer and floating are numerical values (see: the difference between floating and integer values). Within the integer type, there is a further division between short and long integer values.

As would be expected, short integers store numeric values without fractional values for a shorter range than long integers. Floating point attribute values store numeric values with fractional values. Therefore, floating point values are for numeric values with decimal points (i.e numbers to the right of the decimal point as opposed to whole values).

Numeric values will be sorted in sequentially either in ascending (1 to 10) or descending (10 to 1) order.

Numerical value fields can have operations performed such as calculating the sum or average value. Numerical field values can be a count (e.g. the total number of students at a school) or be a ratio (e.g. the percentage of students that are girls at a school).

Date/Time Data

A date field contains date and time values.

BLOB Data

BLOB stands for binary large object and this attribute type is used for storing information such images, multimedia, or bits of code in a field. This field stores object linking and embedding (OLE) which are objects created in other applications such as images and multimedia and linked from the BLOB field

