A shape describing QGIS attribute table plugin

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Abstract

In an any GIS system, valid data is crucial. SQL enterprise databases like PostGIS are often used to serve geospatial data to web services and other information systems. QGIS software is popular for reading and editing geospatial data within enterprise databases without the need for lookup tables or constraints. Unfortunately, the passing of geospatial vector objects (points, lines and polygons) between QGIS and enterprise databases can lead to errors. Furthermore, the QGIS data providers are unique for each database type and equivalent vector objects may be passed differently for different database types.

Real data passing errors can from errors in logic or syntax. Perceived errors come from differences in ideology and interpretation that are present in any multidisciplinary team.

Null and empty shape values are a common cause of perceived errors where different expectations of SQL enterprise database focussed professionals and GIS software professionals do occur. Records containing multiple shape attributes, empty shapes, and, null shapes are all legitimate and common for SQL enterprise databases. In contrast, GIS software like QGIS defaults to records with single shape attributes and neither empty nor null shapes. Furthermore, set operators like intersection produce empty shapes for records where no intersection occurs in SQL databases, but, filters the same records if performed in QGIS.

Any error whether real or perceived needs to be exposed to be addressed. The attribute table in QGIS does not display any attributes that describe the shape associated with each record. The QGIS 'DB Manager' plugin shows the shape type of each record and exposes shapes with null value. A table that exposes properties of the shape attribute for each record is needed for visual review of datasets.

A shape attribute table QGIS plugin will be demonstrated. This plugin exposes empty and null shapes, the geometry type, and, the number of parts where appropriate. The plugin also shows warnings for shapes that contain some invalid geometries. Although the motivation for this plugin was derived from problems in passing datasets to QGIS from PostGis and Microsoft SQL server, the plugin has been designed to work with any loaded vector layer.

By application of the shape attribute table plugin, it will be demonstrated that QGIS reads equivalent model datasets from PostGis, Microsoft SQL server and created within QGIS differently.

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