

SQLiteMap: package to manage vector graphical maps using SQLite

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Some server based database management systems implemented the OpenGIS "Simple Features Specification for SQL".¹ The OpenGIS specification defines two standard ways of expressing spatial features: the Well-Known Text (WKT) form and the Well-Known Binary (WKB) form. Both WKT and WKB include information about the type of the feature and the coordinates which form the feature.² These systems (e.g. PostgreSQL-PostGIS, MySQL, ORACLE, MSSQL) allow to store the topological features and the descriptive data in the same database. This makes it possible to connect the spatial and descriptive tables without any interface and to access the spatial data by a large number of users in a secure way.

But these systems assume that the user needs permission to a running service or to install a server to use the spatial data. In some cases, it is useful if the user can use the database stored maps on different computers and platforms. The SQLite is a good choice for a portable database, it is platform-independent and there are some R packages to manage SQLite databases. Unfortunately, it has no spatial extension, but there is an SQLite extension for the SharpMap library.³

Following the idea of this solution we developed a package that may help the user read and write spatial features from and to an SQLite database. Each table with geometry field is treated as a layer. The tables contain the topological features (polygon, linestring, point etc.) in one geometry field in WKT form.

¹<http://www.opengeospatial.org/standards>

²<http://postgis.refractory.net/>

³<http://www.codeplex.com/SharpMap>