

,
 « »,
 (,)
 ,
 « »,
 (,)

POSTGRESQL SQLITE

() -
 (), -

[1].

() -

, , 3D ,
 PostGIS SpatiaLite.

(X, Y), . , , -
 , , , . , -
 (). -

(),
 Open Geospatial Consortium (OGC - , -
). -

SQL- (. structured query language)
 [2].

SQL, 2D/3D SELECT, OGC

PostgreSQL PostGIS SQLite

Spatialite. PostgreSQL - SQL

PostgreSQL

Linux, Microsoft Windows, FreeBSD, Solaris

PostgreSQL

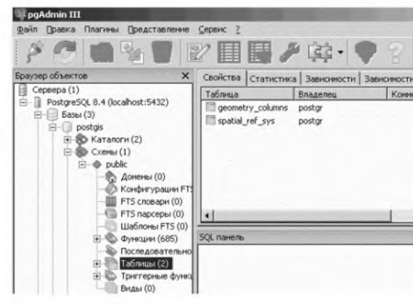
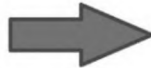
Python, Ruby, C, C++, PHP, Lisp, Scheme Qt. PostGIS PostgreSQL,

2001 Refrations Research. PostGIS R-Tree/GiST, geometry [5].

PostGIS PostgreSQL

Simple Features SQL OGC. PostGIS

SQL , PostGIS (. 1).



1 -

PostgreSQL + PostGIS

1

«geometry_columns»

«spatial_ref_sys»

PostgreSQL + PostGIS

Computational Geometry Algorithms Library). CGAL -

CGAL (The

C++. CGAL

SQLite.

SQLite

MySQL

PostgreSQL.

». SQLite

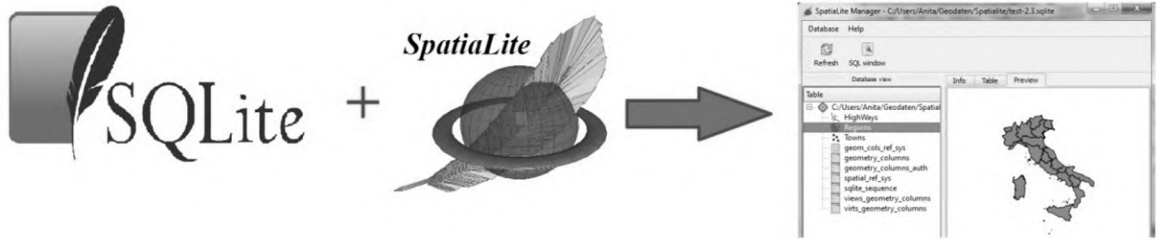
, SQLite

SQLite

[3]. SQLite

Spatialite.

PostGIS.
SpatiaLite (2). (R-)



2 -

SpatiaLite

SQLite +

SpatiaLite SQLite OGC, WKT WKB AsText(), GeomFromTextQ, Area(), PointN() SQL, GeoJSON, shape- EWKT, GML, KML RTreeSQLite.

SpatiaLite

PostGIS

PostgreSQL + PostGIS

3D

(Oracle Spatial, ArcGIS Spatial Analyst). PostGIS CesiumJS [4] (

PostgreSQL +

1.

2.

, 2004. 330 .

:

", 2011. 321 .

3. Allen G., Owens M. The Definitive Guide to SQLite. - NY: Apress, 2010. 369 p.
4. CesiumJS - An open-source JavaScript library for world-class 3D globes and maps: <https://cesiumjs.org/>.
5. Corti P., Kraft T. J., Mather S. V., Park B. PostGIS Cookbook. - Birmingham: Packt Publishing, 2014. 484 p.
6. Smith G. PostgreSQL 9.0 High Performance. - .: , 2010. 468 .

656

()-71

(,)

(,)

« »

:

.

,

.

-

Abstract: This article describes the energy company in terms of logistics. The analysis of the problems of the energy enterprise. Methods for eliminating these problems are proposed, the results from the application of these methods are shown.

:

,

,

,

,

Keywords: efficiency, rolling stock, transportation, logistics, economic effect.

-

,

.

,

,

,

,

-

.

-

,

,

,

-

,

,

—

.

,