POST-GIS - Introduction to PostGIS

PostgreSQL - Postgre SQL - Sistemistica

Durata:	Lingue:	Certificazione:
3 Giorni	**Italiano**	**-**

Descrizione del corso

The course teaches how to use PostGIS, the extension of PostgreSQL, and it is aimed at those who work in the GIS field. After a brief introduction on spatial data, participants will be taught how to import them into PostsgreSQL database and how to manage them using the tools provided by PostGIS. The course also describes how to optimize the database with the indexing based on proximity and spatial location.

Programma

1. GIS
o Introduction
o Data formats (WKT, WKB, GeoJSON, KML, GPX, GeoRSS ...)
o Geometry types
o GIS geometry functions– Spatial analysis (theory)
2. PostGIS
o Installing a PostGIS module
o Upgrade procedures of a spatial DB
o Creating a spatial DB
o Database query
o Spatial data projection
o R-Tree and indexes management on spatial data
o Building geometries
o Controlling geometrical data validity
o Comparing data: comparing polygons through ST_OrderingEquals and ST_Equals di PostGIS functions

o Linear referencing: how to find the closest point to a line through the PostGIS ST_LineLocatePoint function
o Intersection of models (DE9IM)
o Spatial indexes: clustering, creation and indexing based on proximity and spatial location
o 3D geometries
o Finding the closest Geometry
o Geometrical triggers
o Complex geometries
o Raster data management
o Geometry and Geography in PostGIS (data types and differences)
o Topology rules
o Operators in PostGIS (intersects, contains, ...)
o Importing spatial data from other systems
o ST_GEOMETRY (esri) and PG_GEOMETRY
3. Software solutions for data graphical management
o MapServer
o Desktop clients – brief overview
o QGIS (ESRI and QGIS)
o OpenJUMP
o uDig
o Integration with JavaScript
o Leaflet
o OpenLayers
o GeoExt (OpenLayers ExtJs)
o Integration with Java (brief overview)
o Additional libraries
o GeoTools
o Integration with PHP (brief overview)
o Additional libraries
o GeoPHP and Brick/Geo
o MapServer and PHP MapScript API