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GENESYS:

Spatial Query Processing in Geographic Database Systems

GENESYS is a system for an efficient processing of spatial queries in geographic database systems.

GENESYS offers a well-chosen set of spatial operations and queries on polygonal objects which serves as a basis for implementing more sophisticated operations. Examples for such queries are the point query computing all objects containing a given query point, and the spatial join which determines all pairs of intersecting objects for two given sets of objects.

In GENESYS, spatial queries are executed following the paradigm of multi-step query processing: the set of objects which potentially fulfill a query, is systematically reduced by using several filter steps. For that purpose, GENESYS exploits efficient spatial access methods, additional approximations, and object representations which are based on geometric decompositions and spatial data structures.

For the specification of queries and for the rendering of results, GENESYS offers a graphical user interface that also allows to visualize the techniques used for computing the queries according to the paradigm of multi-step query processing.

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