

Think Spatial

The UCSB brown-bag forum on spatial thinking

Presents

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Spatial Integrity Constraints from Conceptual Modeling and their Support in Spatially-extended DBMSs

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ABSTRACT:

Relational database management systems (DBMS) typically offer, through SQL, functions and statements dedicated to establishing and enforcing integrity constraints for conventional data. Spatial extensions for RDBMSs add simple geometric data types, spatial reference systems, and spatial functions, but they have not advanced in the direction of a general specification of spatial integrity constraints. Further, there is a large semantic distance between abstract representation alternatives used in conceptual modeling for spatial databases, as opposed to the much simpler point/line/polygon definitions included in spatially-extended RDBMSs. This distance has to be covered by application code, or by using general-purpose (and frowned upon) mechanisms such as triggers. An argument will be presented toward (1) including more advanced spatial data types in spatial databases, and (2) the need for future expansion of data and indexing structures for spatial DBMSs to support the enforcement of spatial integrity constraints by the DBMS, to the benefit of superjacent applications, with greater efficiency.



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