PANEL

Cooperative database design

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It is quite evident nowadays that designing a database is too complicated a task for a single database administrator (DBA). There is definitely a need for more succesful methodologies, supporting distribution of the design task among various designers (whether users or local DBAs). Cooperative design is used here to denote design techniques based upon coordinated activities of several partners. Integration of existing databases into a distributed or federated database may also be considered as a form of cooperative design, as the design problem is to merge existing specifications which were elaborated independently.

Collaborative approaches and groupware support aim at achieving an agreement among partners during the process leading to requirements specification. An alternative aiming at the same objective is to rely on an intelligent data dictionary/design tool to promote reuse of existing specifications.

More challenging is the approach allowing initial specifications to be defined independently, leaving to the next methodological steps to build a global schema consistently with the initial specifications. Schema integration techniques play a crucial role in these approaches. Schema integration has been investigated for many years now. Two directions have emerged: one is semi-automatic integration based on interschema assertions (mainly used for view integration), the other one is using ad-hoc operators to manually define a superview from existing specifications (mainly used for schema integration).

However, significant progress is still needed, and the research community is indeed very active in this area. The development of object-oriented systems, for instance, added a new dimension to the problem: integration of methods.

A few CASE tools have recently been developed to tackle schema integration. They are still limited in scope, as they do not know how to solve conflicting representations, but advances may be reasonably expected.

Starting from a short analysis of advances in schema integration and view management, this panel discussed:

- possible expectations from different technical approaches (comparing assertional view integration versus the procedural superview approach, for instance),

- expected limitations and difficulties,

- research directions which could be most promising.

The panel debated research issues (inclusion of methods into views, for instance) as well as more practical considerations (what may we really expect from CASE tools?).