A Semantics-Driven Query Optimizer for OODBs

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Int. Workshop on Description Logics, Rome, Italy. june 1995

1 DLs techniques for OODB query optimization

Semantic query optimization uses problem-specific knowledge (e.g. integrity constraints) for transforming a query into an *equivalent* one (i.e., with the same answer set) that may be answered more efficiently. The optimizer is applicable to the class conjunctive queries is based on two fundamental ingredients. The first one is the *ODL* description logics proposed as a common formalism to express: class descriptions, a relevant set of *integrity constraints* rules (IC rules), queries as ODL types. The second one are DLs (Description Logics) inference techniques exploited to evaluate the logical implications expressed by IC rules and thus to produce the *semantic expansion* of a given query. The optimizer tentatively applies all the possible transformations and delays the choice of beneficial transformation till the end. Some preliminar ideas on filtering activities on the *semantically expanded query* are reported. A prototype semantic query optimizer (*ODB-QOptimizer*) for object-oriented database systems (OODBs) is described.

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