협력적 질의응답 지원을 위한
값과 도메인 추상화 계층

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Abstract

Cooperative query answering analyzes the intentions of a query and provides generalized neighborhood or associated information relevant to the query as well as exact answers using the knowledge on the query and data values. The main issues on cooperative query answering are the representation of knowledge used for query relaxation and inference support between database objects using the knowledge. In this paper we propose a framework, Value and Domain Abstraction Hierarchy(VDAH), for the knowledge representation and inference in cooperative query answering. The framework provides multilevel representation of data and knowledge on databases using both value and domain abstraction, while existing frameworks use only value abstraction. The management of knowledge on domain abstraction as well as value abstraction can bring out some advantages with respect to the knowledge maintainability.

Based on the framework, we have constructed a knowledge base whose schema can be implemented on the relations. The knowledge base is dynamically maintainable to adapt to changes incurred in the underlying database and abstraction knowledge associated with it. Compared with existing knowledge base, it has some advantages such as normalization of the schema and independence between the hierarchy and the schema. Conclusively, our framework provides more effective management of the knowledge on the underlying database and abstraction knowledge associated with it