Beviskontroll med Prolog

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Functional Dependencies

An FD on a relation R is defined by:
If two tuples of R agree on all attributes A1,. . . ,An then they must also agree on all attributes B1,. . . ,Bm. We say that A1,. . . ,An determines B1,. . . ,Bm, denoted as A -> B.

A set K = {A1,. . . ,An} of attributes is key for reltion R if: - K functionally determine all other attr. of R. - No proper subset of K functionally determines all other attr. of R ,that is, all keys are minimal.

A set of attr. that contains a key is called a superkey.

FD Reasoning

FD's can be inferred from other FD's. - If R(A,B,C) satisfies A -> B and B -> C then A -> C and A -> B, C can be inferred. - If A1,. . . ,Am -> B1,. . . ,Bm then A1,. . . ,An -> B1,. . . , A1,. . . ,An -> Bm.

Trivial FD's. A constraint on a relation R is trivial if holds for every instance of R, regardless of other constraints. - An FD A -> B is trivial if B is a subset of A. Ex: A1, A2 -> A2 always holds and thusly is trivial.

Attribute Closures If A is a set of attr {A1,. . . ,An} and S is a set of FD's then the closure of A under the FD's in S is the set of attributes B such that every relation that satisfies all of S als satisfies A -> B, that is, A -> B follows from the FD's of S. The closure of a A is denoted as A+ˆ+