

Homework 9. Design theory

Question 1.

Suppose $R(A,B,C,D,E,F)$ and the FD's are $AB \rightarrow C$, $BC \rightarrow AD$, $D \rightarrow E$, and $CF \rightarrow B$.

Compute $\{A,B\}^+$.

Question 2.

Suppose $R(A,B,C,D,E,F)$ and the FD's are $AB \rightarrow C$, $BC \rightarrow AD$, $D \rightarrow E$, and $CF \rightarrow B$.

Test whether $D \rightarrow A$ follows from the set of FD's.

Question 3.

Consider relation $R(A, B, C, D, E)$ with FD's: $AB \rightarrow C$, $AE \rightarrow D$, $D \rightarrow B$

Which of the following attribute pairs is a key?

a. AB

b. AC

c. AD

d. AE

Question 4.

For $R(A,B,C,D)$ with $B \rightarrow C$, and $B \rightarrow D$

Indicate all BCNF violations.

Decompose into relations that are in BCNF.