

Normalization Practice

For each Relation, R, and set of Functional Dependencies, F:

1. Find all candidate keys.
2. Find the closure of F.
3. Find the minimal cover of F+.
4. Is R in BCNF? 3NF?
5. Put the relation into BCNF. Are any dependencies not preserved?
6. Put the relation into 3NF.

$R = \{ A, B, C, D, E \}$

$F = \{ A \rightarrow BC ; CD \rightarrow E ; B \rightarrow D ; E \rightarrow A \}$

$R = \{ A, B, C, D, E \}$

$F = \{ C \rightarrow AB ; ED \rightarrow C ; B \rightarrow DE ; E \rightarrow DA \}$

<http://lsirwww.epfl.ch/courses/iis/2006ss/ex2/ex2.html>

$R = \{ A, B, C, D, E \}$

$F = \{ A \rightarrow E, BC \rightarrow A, DE \rightarrow B \}$

<http://cnx.org/content/m28179/latest/>

$R = \{ A, B, C, D, E \}$

$F = \{ A \rightarrow B, BC \rightarrow E, ED \rightarrow A \}$

$R = \{ A, B, C, D, E, F \}$

$F = \{ AB \rightarrow C, C \rightarrow B, ABD \rightarrow E, F \rightarrow A \}$