

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/>

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

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