Database Systems: HW 4

Due February 14, 2020

Let $R(A, B, C, D, E)$ be decomposed into relations $R_1(A, B, C)$, $R_2(B, C, D)$ and $R_3(A, C, E)$. For each set of FDs below, use the chase to determine whether the decomposition is lossless and if it is not, give an example of an instance of R that returns more than R after projection and equi-join.

(1) $B \rightarrow E$, $CE \rightarrow A$
(2) $AC \rightarrow E$, $BC \rightarrow D$
(3) $A \rightarrow D$, $D \rightarrow E$, $B \rightarrow D$
(4) $A \rightarrow D$, $CD \rightarrow E$, $E \rightarrow D$