CS1555 Recitation 10

Objective: to practice normalization, finding canonical forms, checking for lossless decompositions.

**Part 1:** For each of the following relations R and sets of functional dependencies F, find the canonical cover (minimal cover) of F.

**1.** Consider the following set of functional dependencies F on a relation R (A, B, C, D, E):

A → BC

A → D

B → C

C → D

DE → C

BC → D

**2.** Consider the following set of functional dependencies F on relation R (A, B, C, D, E, H):

A → C

AC → D

E → AD

E → H

A → CD

E → AH

**Part 2:** Assume that R is decomposed into:

R1 (A, B), F1 = {A → B}, key (A)

R2 (B, C), F2 = {B → C}, key (B)

R3 (C, D, E), F3 = {C → D, DE → C), key (DE), (CE)

Is this decomposition a lossless-join decomposition? Use the table method.