

CS34800 - PSO Exercise – Week 11

1. Given the relation R and the set of functional dependencies F that hold on R, find all candidate keys for R.

R(A, B, C, D, E, F)

F:

DF \rightarrow C

BC \rightarrow F

E \rightarrow A

ABC \rightarrow E

2. Given the relation R and the set of functional dependencies F that hold on R, what is the highest normal form of R (1NF, 3NF or BCNF)?

R(C, O, L, D, P, S)

F:

C \rightarrow D

O \rightarrow L

CO \rightarrow P

P \rightarrow S

3. Consider the decomposition of R in Question 2 into the relations below. State the highest normal form (1NF, 3NF or BCNF) for each of the relations in the decomposition.

R1(C, O, P, S); R2(C, O, L); R3(C, D)

4. Given the relation R and the set of functional dependencies F, find a decomposition of R into 3NF relations that is lossless-join and dependency-preserving.

R(A, B, C, D, E)

F:

A \rightarrow B

A \rightarrow C

C \rightarrow A

BD \rightarrow E