CS34800 - PSO Exercise – Week 12

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 ➔ C
   BC ➔ F
   E ➔ A
   ABC ➔ 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 ➔ D
   O ➔ L
   CO ➔ P
   P ➔ 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 ➔ B
   A ➔ C
   C ➔ A
   BD ➔ E