Consider the following relation R(A, B, C, D, E) and functional dependencies F that hold over this relation.

Consider the following relation R (ApplicationID, BankID, SSN, type, income, name) for loan bank systems. Using the following assumptions

Each customer can have one SSN and only one name associated with the SSN and have one income

A customer can apply for multiple loans. However, applicationID at a given bankID, is for one customer and one given type.

One applicationID is associated with one customer at a given bankID applying for a given types loan

The functional dependencies deduced for these assumptions are as follow:

SSN → income , name

ApplicationID, BankID → SSN, type, name

SSN , BankID, type→ ApplicationID, income

1- Find the candidate key (s)

2- Find the canonical cover

3- What normal is R

4- Decompose R into 3NF schema

5- Decompose R into BCNF schema

Problem 2 For each of the following schedules determine which properties this schedule has. E.g., a schedule may be recoverable and cascade-less (strict). Consider the following notation for operations of transactions:

w1(A) transaction 1 wrote item A r1(A) transaction 1 read item A c1 transaction 1 commits a1 transaction 1 aborts

S1 = r2(C), w2(A), w1(A), w2(B), c2, r3(B), c1, w3(B), c3

S2 = r1(C), w3(C), r2© r2(A), r1(B), w2(A), r2(B),r3(A), w1(B), c1, w3(A), c3, w2(B), c2

S3= r1(C), r1(B), r2(A), w2(A), w1(B), r2(C), w2(C), c1, w2(B), c2 S2

S4= r3(A), r1(B), w2(B), r1(C), w1(B),c1, w2(A), c3, w1(A) c2