Normalization Exercises

1. For the following relation, say whether the following functional dependencies could hold for the sample data.

A	B	C	D	E
1	2	3	4	5
1	2	4	5	5
1	3	3	1	3
2	3	3	2	3
3	5	3	4	5

Dependency	Can Hold ?
A -> B	
A -> E	
A, B - > C, D, E	
C, D -> E	

2. For the following relational schema:

PersonId	CountryCode	PassportNo	Name	CountryName

And the following functional dependencies:
- Personid -> Name
- CountryCode -> Country Name

(a) Specify which normal form this schema is in

(b) If the schema is not in 3NF convert it to 3NF

3. For the following relational schema:

Cno	SecNo	Classroom	Capacity

And the following functional dependencies:
- Classroom -> Capacity

(a) Specify which normal form this schema is in

(b) If the schema is not in 3NF convert it to 3NF