

Assignment 3: Normalization

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

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

Dependency	Can Hold ?
$A \rightarrow C$	
$A, B \rightarrow C, D$	
$C, D \rightarrow E$	

2. For the following relational schema:

<u>InmateNo</u>	Name	<u>CrimeCode</u>	Description	<u>ArrestDate</u>	Disposition	Counts
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And the following functional dependencies (besides the one implied by the Primary Key, for which fields are underlined):

- $\text{InmateNo} \rightarrow \text{Name}$
- $\text{CrimeCode} \rightarrow \text{Description}$

(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:

<u>ProductId</u>	ProductName	CatId	CatName	Price
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And the following functional dependencies (besides the one implied by the Primary Key, for which fields are underlined):

- $\text{CatId} \rightarrow \text{CatName}$

(a) Specify which normal form this schema is in

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