Assignment 5

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CIS 310-01

1NF

1. Dependency Diagram

PK Dependency

cc

Partial Dependency

Partial Dependency

AuthBRlty

BPrice

PubCity

BPublish

BName

BNbr

AInst

AFname

ALname

AID

Transitive Dependency

The current diagram is already in 1NF and consists of both partial dependencies and a transitive dependency. We will have to normalize it by taking it through 2NF and 3NF.

1. The given database is already in 1NF.

2NF

Fix partial dependencies to get to 2NF.

PK Dependency

Existing dependencies are undesirable because they are currently in one table and certain attributes are dependent on their specific primary keys. They need their own tables.

AID

ALname

AFname

AInst

PK Dependency

BNbr

BName

BPublish

PubCity

BPrice

Transitive Dependency

PK Dependency

AuthBRlty

AID

BNbr

3NF

Fix transitive dependencies to get to 3NF.

PK Dependency

AuthBRlty

AID

BNbr

Existing dependencies are undesirable because the publishing city is dependent on the book publisher, making it a transitive dependency needing its own table.

PK Dependency

PK Dependency

BPublish

AID

ALname

AFname

AInst

PubCity

BPublish

BPrice

BName

BNbr

PK Dependency