

Normalization

Publishers Table:

Publisher = {Publisher_ID, Name}

1NF:

Already In 1NF

2NF:

Single primary key so in 2NF

3NF:

No transitivity so in 3NF

BCNF:

All primary keys are candidate

Table is normalized

Books Table:

Books = {ISBN, Name, Genre, Edition, Price, Quantity, Publisher_ID}

1NF:

Already In 1NF

2NF:

Single primary key so in 2NF

3NF:

No transitivity so in 3NF

BCNF:

All primary keys are candidate

Table is normalized

Publish Date Table:

Publish Date = {(ISBN, Publisher ID), Day, Month, Year}

1NF:

Already In 1NF

2NF:

No partial dependency in composite primary keys so in 2NF

3NF:

No transitivity so in 3NF

BCNF:

All primary keys are candidate

Table is normalized

Members Table:

Members = {Member ID, Name, Email, Contact No, Address, CNIC, Membership Date}

1NF:

Already In 1NF

2NF:

Single primary key so in 2NF

3NF:

No transitivity so in 3NF

BCNF:

All primary keys are candidate

Table is normalized

Issue Table:

Issue Card = {(ISBN, Member ID, Issue Date), Return Date, Late Fee Per Day, Late Days, Status}

1NF:

Already In 1NF

2NF:

No partial dependency in composite primary keys so in 2NF

3NF:

No transitivity so in 3NF

BCNF:

All primary keys are candidate

Table is normalized

Purchase Table:

Purchase Card = {(ISBN, Member ID, Purchase Date), Price, Quantity}

1NF:

Already In 1NF

2NF:

No partial dependency in composite primary keys so in 2NF

3NF:

No transitivity so in 3NF

BCNF:

All primary keys are candidate

Table is normalized

Non-Members Table:

Non-Members = {CNIC, Name, Email, Contact No, Address, ISBN}

1NF:

Already In 1NF

2NF:

Single primary key so in 2NF

3NF:

No transitivity so in 3NF

BCNF:

All primary keys are candidate

Table is normalized

Rent Table:

Rent = {(ISBN, CNIC, Rent Date), Return Date, Late Fee Per Day, Late Days, Status}

1NF:

Already In 1NF

2NF:

No partial dependency in composite primary keys so in 2NF

3NF:

No transitivity so in 3NF

BCNF:

All primary keys are candidate

Table is normalized

Staff Table:

Staff = {Staff ID, Name, Contact No, Address, Salary}

1NF:

Already In 1NF

2NF:

Single primary key so in 2NF

3NF:

No transitivity so in 3NF

BCNF:

All primary keys are candidate

Table is normalized

Maintenance Table:

Maintenance = {ISBN,Staff ID}

1NF:

Already In 1NF

2NF:

Single primary key so in 2NF

3NF:

No additional attributes so no transitivity can occur so in 3NF

BCNF:

All primary keys are candidate

Table is normalized