**Table User**

Key: user\_phone

user\_id -> user\_name, user\_gender, user\_email, user\_address, user\_phone

user\_phone -> user\_name, user\_id

1NF: Each user will register with a phone number, and we have user\_id this will be the primary key. And each user can have only one name, gender, email, address, phone.

2NF: All non-key attributes are functionally dependent on the entire user\_id and some of them dependent on user\_phone, so that's 2NF.

3NF: In the existing FD, the left-hand side is the key, so it's 3NF.

**Table Seller**

Key: seller\_id

Foreign Key: user\_id

seller\_id -> user\_id, rating

user\_id -> seller\_id, rating

1NF: Each seller can have only one seller\_id, user\_id, rating.

2NF: Non-key attribute rating is functionally dependent on the entire seller\_id or user\_id.

3NF: In the existing FDs, the left hand side is the key or its right hand side is a key.

**Table Delivers**

Key: deliver\_id

Foreign Key: order\_id, customer\_id, seller\_id

deliver\_id -> deliver\_name, phone\_number, deliver\_date, order\_id, customer\_id, seller\_id

order\_id -> deliver\_id, deliver\_name, phone\_number, deliver\_date, customer\_id, seller\_id

1NF: Each deliver can have only one deliver\_name, phone\_number, deliver\_date

2NF: Non-key attributes deliver\_name, phone\_number and deliver\_date are functionally dependent on the entire deliver\_id or order\_id.

3NF: In the existing FDs, the left-hand side is the key or its right-hand side is a key.

**Table Payment**

Key: payment\_id

Foreign Key: customer\_id

payment\_id -> payment\_type, customer\_id

customer\_id -> payment\_type, payment\_id

1NF: Each payment\_id can have only one payment\_type

2NF: Non-key attribute payment\_type is functionally dependent on the entire payment\_id or customer\_id.

3NF: In the existing FDs, the left-hand side is the key or its right-hand side is a key.

**Table Order**

Key: order\_id

Foreign Key: payment\_id, customer\_id

order\_id -> payment\_id, customer\_id

payment\_id -> order\_id, customer\_id

customer\_id -> payment\_id, order\_id

1NF: Each order can have only one order\_id, customer\_id

2NF: in 1NF and does not have non-key attributes.

3NF: In the existing FDs, the left-hand side is the key or its right-hand side is a key.

**Table Customer**

Key: customer\_id

Foreign Key: user\_id

customer\_id -> user\_id

1NF: Each customer\_id can have only one user\_id

2NF: in 1NF and does not have non-key attributes.

3NF: In the existing FDs, the left-hand side is the key or its right-hand side is a key.

**Table Transactions**

Key: transaction\_id

Foreign Key: customer\_id, payment\_id, order\_id

transaction\_id -> customer\_id, payment\_id, order\_id

transaction\_id -> status, date

1NF: Each transaction\_id can have only status, date

2NF: Non-key attributes status, date are functionally dependent on the entire transaction\_id or customer\_id.

3NF: In the existing FDs, the left-hand side is the key or its right-hand side is a key.

**Table Product**

Key: **product\_id**

Foreign Key: category\_id

product\_id -> name, price, rating, city, description, quantity, category\_id

category\_id -> city, product\_id

1NF: Each product\_id can have only one category\_id, name, price, rating, city, description, quantity

2NF: in 2NF.

3NF: In the existing FD, the left-hand side is the key, so it's 3NF.

**Table Reviews (weak entity)**

**Key: no**

Foreign Key: **Customer\_ID, Product\_ID**

**Customer\_ID -> Date\_Of\_Publication, Rating\_Stars, Comment**

**Product\_id -> Date\_Of\_Publication, Rating\_Stars, Comment**

1NF: Each **Customer\_ID** and each **Product\_id** can have only one **Date\_Of\_Publication, Rating\_Stars, Comment**

2NF: in 2NF.

3NF: In the existing FD, the left-hand side is the key, so it's 3NF.

Tables Basket, Return, Category all in 3NF