Tables:

User (user_id, username, email, password)
Textbook (book_id, title, author, price, condition)
Transaction (transaction_id, buyer_id, seller_id, book_id, transaction_date)
Course (course_id, course_name, department)

Functional dependencies:

1. **users Table:**
    - user_id → username, email, password
    - username → user_id, email, password
    - email → user_id, username, password

    The primary key user_id uniquely identifies a row. Additionally, both username and email are unique constraints.

2. **textbooks Table:**
    - book_id → title, author, price, book_condition

    The primary key book_id uniquely identifies each textbook record.

3. **courses Table:**
    - course_id → course_name, department

    The primary key course_id uniquely identifies each course.

4. **transactions Table:**
    - transaction_id → buyer_id, seller_id, book_id, transaction_date

    The primary key transaction_id uniquely identifies each transaction record.

In this table, the foreign keys (buyer_id, seller_id, and book_id) reference the primary keys from their respective tables, meaning the value in transactions depends on corresponding values in users and textbooks.

5. **Combined Functional Dependencies:**
    - For a user making a transaction (purchase/sale):
        - (buyer_id, seller_id, book_id, transaction_date) → transaction_id

Normalize

They are all in BCNF already