Schema: Suppose a bookstore has the following five relational tables:

- Book (bid, title, aid, subject, quantity_in_stock)
- Author (aid, first_name, last_name)
- Customer (cid, first_name, last_name)
- Order-Details (oid, bid, quantity)
- Order (oid, cid, order_date)

Assumptions:
- Primary keys are underlined and foreign keys are in red and *italics*
- Each book has exactly one author
- Each order is made by exactly one customer and has one or more associated records in Order-Details (e.g., an order may contain different books)
create table Author (  
aid int,  
first_name char(30),  
last_name char(30),  
primary key (aid) )

create table Customer (  
cid int,  
first_name char(30),  
last_name char(30),  
primary key (cid) )

create table Book (  
bid int,  
title char(30),  
aid int not null,  
subject char(30),  
quantity_in_stock int,  
primary key (bid),  
foreign key (aid) references Author on delete cascade )

create table Order (  
oid int,  
cid int not null,  
order_date date,  
primary key (oid),  
foreign key (cid) references Customer on delete cascade )

create table Order-Details (  
oid int not null,  
bid int not null,  
quantity int,  
primary key (oid, bid),  
foreign key (oid) references Order on delete cascade  
foreign key (bid) references Book on delete cascade )
Exercise – Q2

Q2: Customer with id = 1001 purchases all the books of the author(s) with last name “Dickens” on “08/03/2013” in a single order (assume that all these books are in stock). This new order gets id = 12345. Add the appropriate records in the database.

```
insert into Order values (12345, 1001, “08/03/2013”)
```

```
insert into Order-Details
    select 12345, B.bid, 1
    from Book as B, Author as A
    where B.aid = A.aid and
        A.last_name = “Dickens”
```

```
update Book
set quantity_in_stock = quantity_in_stock-1
where bid in (
    select B.bid
    from Book as B, Author as A
    where B.aid = A.aid and
        A.last_name = “Dickens”)
```

How can we increase performance?
Exercise - Q3

Q3: Delete customer with id = 1001 from the database

```
delete from Customer where id = 1001
```

If cascading deletions were not used in tables Order and Order-Details

```
delete from Order-Details as D
Where D.oid in (
    select O.oid
    from Order as O
    where O.cid = 1001 )
```

```
delete from Order where cid = 1001
```

```
delete from Customer where id = 1001
```

Books (bid, title, aid, subject, quantity_in_stock)
Authors (aid, first_name, last_name)
Customers (cid, first_name, last_name)
Order Details (oid, bid, quantity)
Orders (oid, cid, order_date)