1. **-Suppose that a data warehouse consists of the three dimensions time, doctor, and patient, and the two measures count and charge, where charge is the fee that a doctor charges a patient for a visit.**

- Design a star schema for such a data warehouse.

- Identifying the fact table(s) and dimension table(s).

- Identifying their primary key(s), foreign key(s) and measures.

2. **Suppose that a data warehouse for Big-University consists of the following four dimensions: student, course, semester, and instructor, and two measures count and avg. grade. When at the lowest conceptual level (e.g., for a given student, course, semester, and instructor combination), the avg grade measure stores the actual course grade of the student. At higher conceptual levels, avg grade stores the average grade for the given combination.**

- Design a Star Schema   schema for such a data warehouse.

- Identifying the fact table(s) and dimension table(s).

- Identifying their primary key(s), foreign key(s) and measures.

3. **Suppose that a data warehouse consists of the four dimensions, date, spectator, location, and game, and the two measures, count and charge, where charge is the fare that a spectator pays when watching a game on a given date. Spectators may be students, adults, or seniors, with each category having its own charge rate.**

- Design a star schema for such a data warehouse.

- Identifying the fact table(s) and dimension table(s).

- Identifying their primary key(s), foreign key(s) and measures.

4. Design the data warehouse for a wholesale furniture company.
The data warehouse has to allow to analyze the company's situation at least with respect to the Furniture, Customers and Time. Moreover, the company needs to analyze:
the furniture with respect to its type (chair, table, wardrobe, cabinet. . .), category (kitchen, living room, bedroom, bathroom, office. . .) and material (wood, marble. . .)
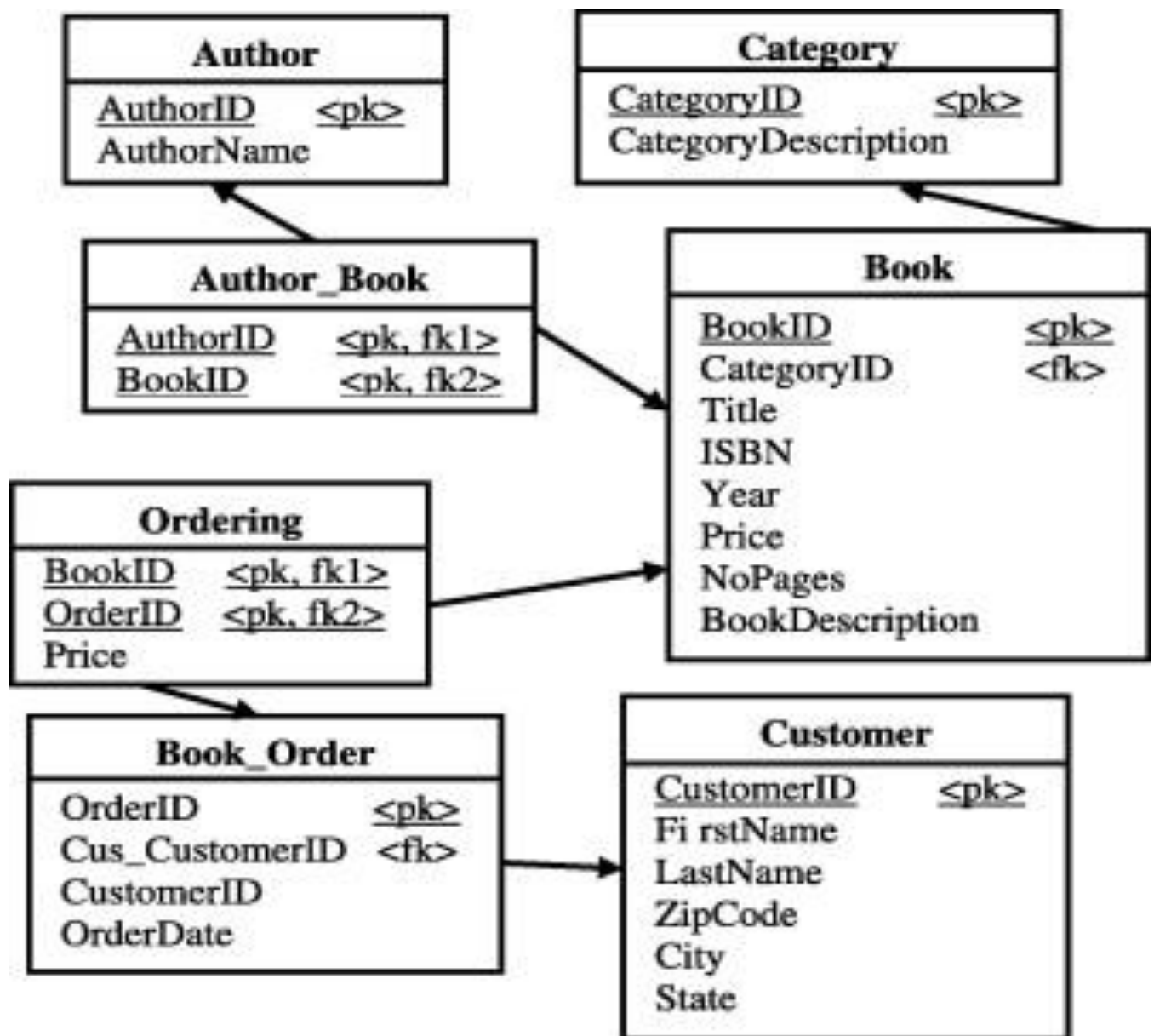**the customers with respect to their spatial location, by considering at least cities, regions and states**
The company is interested in learning at least the quantity, income and discount of its sales

- Design a star schema for such a data warehouse.

- Identifying the fact table(s) and dimension table(s).

- Identifying their primary key(s), foreign key(s) and measures.

5. Convert 3NF to Dimensional modeling

- Design a star or snowflake schema for such a data warehouse.

- Identifying the fact table(s) and dimension table(s).

- Identifying their primary key(s), foreign key(s) and measures.

Author	
AuthorID	<pk>
AuthorName	

Category	
CategoryID	<pk>
CategoryDescription	

Author_Book	
AuthorID	<pk, fk1>
BookID	<pk, fk2>

Book	
BookID	<pk>
CategoryID	<fk>
Title	
ISBN	
Year	
Price	
NoPages	
BookDescription	

Ordering	
BookID	<pk, fk1>
OrderID	<pk, fk2>
Price	

Book_Order	
OrderID	<pk>
Cus_CustomerID	<fk>
CustomerID	
OrderDate	

Customer	
CustomerID	<pk>
Fi rstName	
LastName	
ZipCode	
City	
State	

6. Convert 3NF to Dimensional modeling

category
- * category_id
- name
- last_update

inventory
- * inventory_id
- film_id
- store_id
- last_update

customer
- * customer_id
- store_id
- first_name
- last_name
- email
- address_id
- activebool
- create_date
- last_update
- active

film_category
- * film_id
- * category_id
- last_update

rental
- * rental_id
- rental_date
- inventory_id
- customer_id
- return_date
- staff_id
- last_update

address
- * address_id
- address
- address2
- district
- city_id
- postal_code
- phone
- last_update

film
- * film_id
- title
- description
- release_year
- language_id
- rental_duration
- rental_rate
- length
- replacement_cost
- rating
- last_update
- special_features
- fulltext

payment
- * payment_id
- customer_id
- staff_id
- rental_id
- amount
- payment_date

city
- * city_id
- city
- country_id
- last_update

staff
- * staff_id
- first_name
- last_name
- address_id
- email
- store_id
- active
- username
- password
- last_update
- picture

language
- * language_id
- name
- last_update

country
- * country_id
- country
- last_update

film_actor
- * actor_id
- * film_id
- last_update

actor
- * actor_id
- first_name
- last_name
- last_update

store
- * store_id
- manager_staff_id
- address_id
- last_update
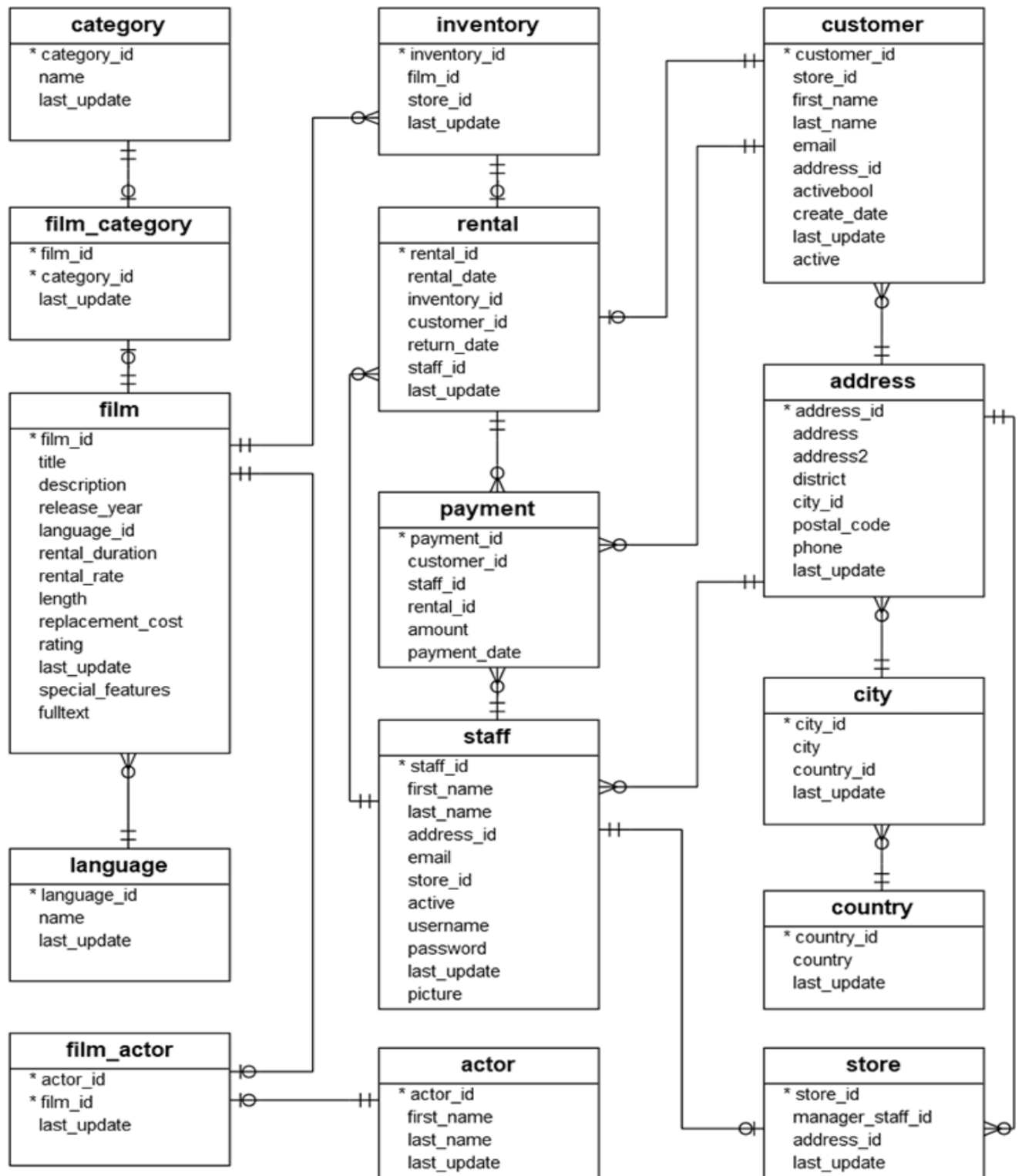
7. Convert 3NF to Dimensional modeling

- Design a star or snowflake schema for such a data warehouse.

- Identifying the fact table(s) and dimension table(s).

- Identifying their primary key(s), foreign key(s) and measures.