The Book Shop Constraints and Denormalization

From the class presentation, you know that there are 4 constraint types. Three can be modeled in the ER diagram and the fourth cannot.

CONSTRAINT TYPES	
Entity Integrity	No part of a primary key can be NULL
Referential Integrity	A foreign key must match an existing primary key value (or else be NULL)
Column Integrity	A column must contain only values consistent with the defined data format of the column
User-Defined Integrity	The data stored in a database must comply with the rules of the business

Constraints for the Book Shop

Identify and describe all the Constraints that cannot be modeled in the ER Diagram from the Book Shop Scenario.

21. Both the manager and the assistant manager must be able to access and modify information about each employee as necessary.

26. No employee—other than the two managers—should have access to the employee information.

30. Because some customers do not like to give out personal information, only a first name or a last name is required.

33. The manager maintains a record of sales by tracking each order from when a sales clerk takes the order to when the sale is complete.

37. An order is completed when a book has been paid for and picked up at the store or paid for and shipped to the customer.

38. A book cannot be taken out of the store or shipped unless it is paid for.

55. In order to serve customers effectively, each employee must be able to access a centralized source of information about authors, books in stock, customers, and orders.

58. In addition, each employee should be able to create, track, and modify orders online, rather than having to maintain paper order forms.

59. Only the managers should be able to modify information about authors, books, and customers, however.

Denormalization for the Book Shop

Identify the Denormalization, **if any**, need to meet the customer requirements in the Book Shop Scenario.

Order.Total is denormalized to reflect the total of the books on the order.

Book.Sold is denormalized to reflect the status of a book as no longer in stock/available for sale.