Class Activity – Object Oriented Design Concepts

Create a class diagram with the following classifications. Identify classes (abstract and concrete, relationship and multiplicity among classes. Name all the classes properly and find their attributes and methods. Note: Ignore all getters and setters of instance variables.

1. You are designing a system for an online book store that records information of the books, Authors of the books, Publishers who published the books, customers who buy the books from this store, and the orders that are placed by the customers are recorded. Information about book is recorded as follows, ISBN, title, cost, retail, category (like literature, cooking, computer etc.), publisher, date the book was published and discount when store wants to have some promotion. Author’s name and id are recorded for book’s author. Publisher’s id, name, contact#, are recorded to contact the publisher to order more books for the store. Customer’s name, address (street#, street, city, zip code and country) are recorded. Managers want to know who placed the order, which books are ordered, when the order was placed, when was it shipped, how many books are ordered are the interest to the bookstore? Management is also interested to see some reports like:
   1. what is total of each order placed by a customer?
   2. how much profit is coming from each book?
   3. how much worth of inventory is present in the store?
   4. how many orders each customer placed?
   5. how many orders still need to be shipped?
   6. How many books are in the store?
   7. How many customers are registered with the book store?

Based on your knowledge of class diagrams, Identify the relationships and associations of the classes in the given system of book store. Model the Class Diagram along with their multiplicity among the classes. Also identify their attributes and methods. List/differentiate the abstract and concrete classes. Obvious classes are Book, Author, Publisher, Customer, Orders that are highlighted. But if you think you need to add more classes or remove some you can do so to make the system work efficiently and redundancy free.

There are some constraints: Each order must have at least one book and can have up to 5 books maximum. Each order can belong to only one customer but customer can place many orders. Each book can be ordered many times. Authors can write any number of books. Group of authors can write a book. One book must be published by one publisher only.

Please see rubric below for detailed assessment:

