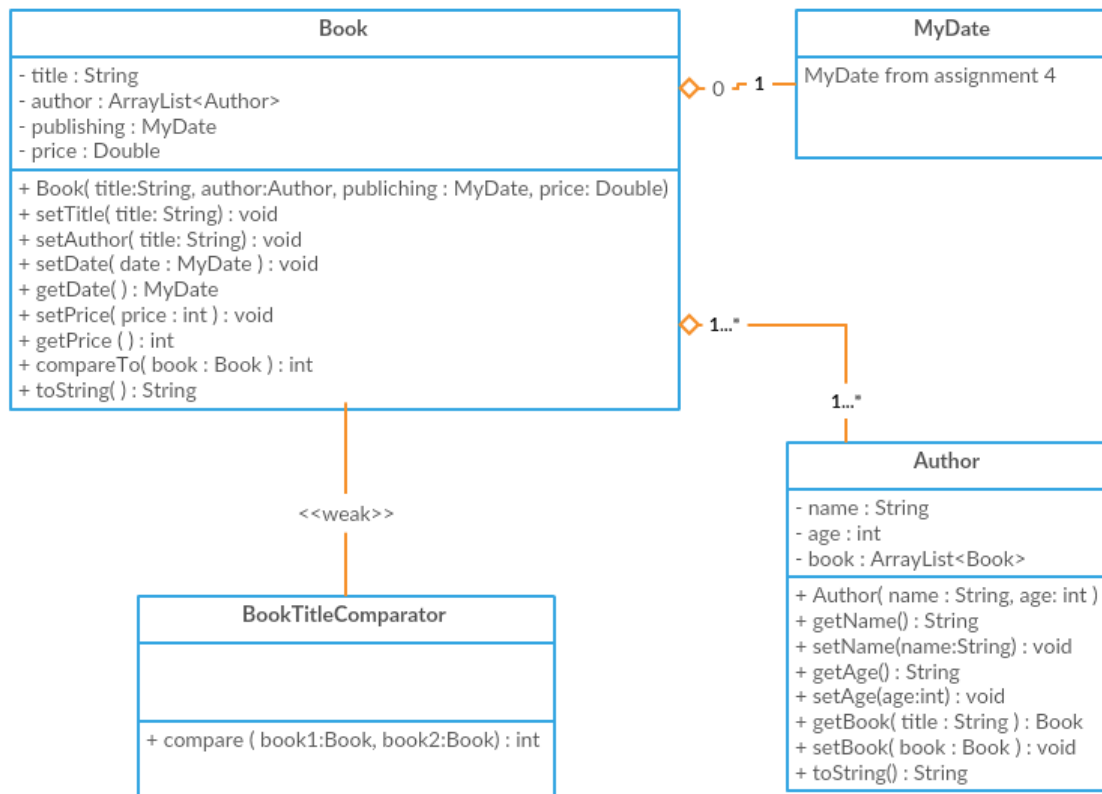Project#5:

Implement the classes in the following class diagram. The Book class implements the Comparable interface. Use *implements Comparable<Book>* in the class definition. Now, all book objects are instances of the java.lang.Comparable interface. Write a test program that creates an array of ten books.

1. Use Arrays.sort( Book[]  books ) from the java.util package to sort the array. The order of objects in the array is determined using *compareTo(...)* method.
2. Write a method that returns the most expensive book in the array of objects (Books).
    o The method signature is:   public static Book max ( Book[] books)
3. Create another class BookTitleComparator that implements the Comparator interface in which overrides the *compare( Book a, Book b)* method. Use the *implements Comparator<Book>* in the class definition in order to compare objects of type Book. The *compare(Book a, Book b)* method should compare the titles of the two books.
4. Using Arrays.sort( Book[] books, new BookTitleComparator()  ) to sort books by the title.
    o Arrays.sort( books, new BookTitleComparator() );
5. Create a method to show each element in the array with the following method signature:
    o public static void showBooksArray ( books )

**Book**

- title : String
- author : ArrayList<Author>
- publishing : MyDate
- price : Double

+ Book( title:String, author:Author, publiching : MyDate, price: Double)
+ setTitle( title: String) : void
+ setAuthor( title: String) : void
+ setDate( date : MyDate ) : void
+ getDate( ) : MyDate
+ setPrice( price : int ) : void
+ getPrice ( ) : int
+ compareTo( book : Book ) : int
+ toString( ) : String

**MyDate**

MyDate from assignment 4

0 — 1

1..."

1..."

**Author**

- name : String
- age : int
- book : ArrayList<Book>

+ Author( name : String, age: int )
+ getName() : String
+ setName(name:String) : void
+ getAge() : String
+ setAge(age:int) : void
+ getBook( title : String ) : Book
+ setBook( book : Book ) : void
+ toString() : String

<<weak>>

**BookTitleComparator**

+ compare ( book1:Book, book2:Book) : int

Note : You need to write a class MyDate that have method  getDate ,  setDate and tostring() method

Feel free to add any method  that you think is useful.