# Objective

Practice the sorting and sorting algorithm.

# Problem

Create an application to keep track of some book objects. The user wants to create a list of the Book objects. The user also wants to search the books based on different criteria. For example, the user wants to sort all the books based on the title.

List of the classes: Book, BookStore, Driver. BookStore class has many Book objects.

**Book class**

Most of this class has been implemented for you. Each Book object has the attributes title, author, price, and isbn. The code for the constructor, getter methods, setter methods and equals method is given. You need to implement three methods so that we can compare the book objects based on the author or based on the title or based on the title and price. Each of the compare methods has been numbered in the provided shell. Refer to the shell.

# BookStore class

This class has an instance variable which is an ArrayList of book. You need to implement the following methods in this class:

1. **Selection sort**: sorts the books based on the title of the books. Make sure to call the proper compare method that is implemented in the Book class
2. **Insertion sort**: sorts the books based on the authors of the books. Make sure to call the proper compare method In this method
3. **Bubble sort**: sorts the books based on the author and the price of the books. Make sure to call the proper compare method here
4. **Binary search:** Searches the list of the books based on the title of the book. Therefore the very first line of code should be selectionSort() so that all the books are sorted based on the title.

# Driver Class

Once you implemented the above classes, uncomment the given code in the Driver. Run your code.

# YourDriver class

Create your own driver similar to the given one. Make sure to complete this class to get the full credit.

# Sample output

  
Enter 1 to sort based on the title  
Enter 2 to sort based on the author  
Enter 3 to sort based on the author, and the price  
Enter your choice: 1  
  
\*\*\*\*\*\*\*\*\*\*\*\*\*  
Sorted based on the title  
  
Advance Java, Stewart, 98.0, 767676576  
Build Java, Liang, 45.0, 56786565y76  
C++, Elina, 23.56, 2645556  
Humanity, Smith, 100.56, 234545657  
Java, Zoie, 23.56, 12345678  
Programming Java, Stewart, 124.0, 75465666  
Python, Elina, 23.56, 2  
Zip lining, Stewart, 12.0, 1234566576  
  
  
 \*\*\*\*\*\*\*\*\*\*\*\*\*\*   
Enter the title of the book to search for it:   
Zip lining  
Zip lining, Stewart, 12.0, 1234566576  
  
  
Enter 1 to sort based on the title  
Enter 2 to sort based on the author  
Enter 3 to sort based on the author, and the price  
Enter your choice: 2  
  
\*\*\*\*\*\*\*\*\*\*\*\*\*  
Sorted based on the author  
  
C++, Elina, 23.56, 2645556  
Python, Elina, 23.56, 2  
Build Java, Liang, 45.0, 56786565y76  
Humanity, Smith, 100.56, 234545657  
Advance Java, Stewart, 98.0, 767676576  
Programming Java, Stewart, 124.0, 75465666  
Zip lining, Stewart, 12.0, 1234566576  
Java, Zoie, 23.56, 12345678  
  
  
 \*\*\*\*\*\*\*\*\*\*\*\*\*\*   
Enter the title of the book to search for it:   
Humanity  
Humanity, Smith, 100.56, 234545657  
  
  
Enter 1 to sort based on the title  
Enter 2 to sort based on the author  
Enter 3 to sort based on the author, and the price  
Enter your choice: 3  
  
\*\*\*\*\*\*\*\*\*\*\*\*\*  
Sorted based on the author and price  
  
C++, Elina, 23.56, 2645556  
Python, Elina, 23.56, 2  
Build Java, Liang, 45.0, 56786565y76  
Humanity, Smith, 100.56, 234545657  
Zip lining, Stewart, 12.0, 1234566576  
Advance Java, Stewart, 98.0, 767676576  
Programming Java, Stewart, 124.0, 75465666  
Java, Zoie, 23.56, 12345678  
  
  
 \*\*\*\*\*\*\*\*\*\*\*\*\*\*   
Enter the title of the book to search for it:   
Java  
Java, Zoie, 23.56, 12345678  
  
  
Enter 1 to sort based on the title  
Enter 2 to sort based on the author  
Enter 3 to sort based on the author, and the price  
Enter your choice: 2  
  
\*\*\*\*\*\*\*\*\*\*\*\*\*  
Sorted based on the author  
  
C++, Elina, 23.56, 2645556  
Python, Elina, 23.56, 2  
Build Java, Liang, 45.0, 56786565y76  
Humanity, Smith, 100.56, 234545657  
Advance Java, Stewart, 98.0, 767676576  
Programming Java, Stewart, 124.0, 75465666  
Zip lining, Stewart, 12.0, 1234566576  
Java, Zoie, 23.56, 12345678  
  
  
 \*\*\*\*\*\*\*\*\*\*\*\*\*\*   
Enter the title of the book to search for it:   
water  
Book not found  
  
  
Enter 1 to sort based on the title  
Enter 2 to sort based on the author  
Enter 3 to sort based on the author, and the price  
Enter your choice:4

Bye