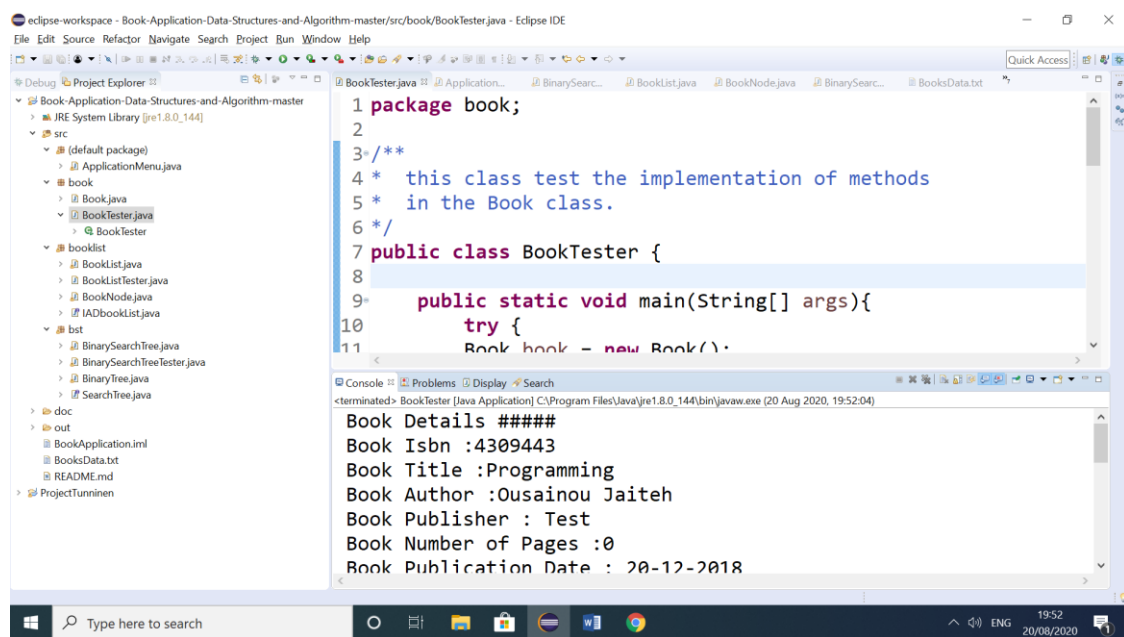


# Data Structures and Algorithm - Book-Application Test Regime

**Note:** To test the Book Application please run with Eclipse, IntelliJ or any other IDE compatible with java.

Below I list each class and how to go about testing it:

1. **Book Tester class:** This class test the implementation of methods in the Book Class. To Test it simply open in IDE and run it. Two book objects have been created in this class with respective data by making use of the setters methods for the available properties such as ISBN, Title, Author, Publisher, Number of Pages, Publication Date, Format, Genre and Number of borrows. A toString method is created in the **Book** class that calls and prints all the data available in the getter methods of these books. See figure below:



The screenshot shows the Eclipse IDE interface. The Project Explorer on the left displays the project structure: 'Book-Application-Data-Structures-and-Algorithm-master' with sub-projects 'book' and 'booklist'. The 'book' project contains 'Book.java' and 'BookTester.java'. The 'booklist' project contains 'BookList.java', 'BookListTester.java', 'BookNode.java', and 'IADBookList.java'. The 'booklist' project also contains a 'bst' sub-project with 'BinarySearchTree.java', 'BinarySearchTreeTester.java', and 'SearchTree.java'. The 'book' project also contains a 'doc' sub-project with 'BookApplication.iml', 'BooksData.txt', and 'README.md'. The main editor shows the 'BookTester.java' file with the following code:

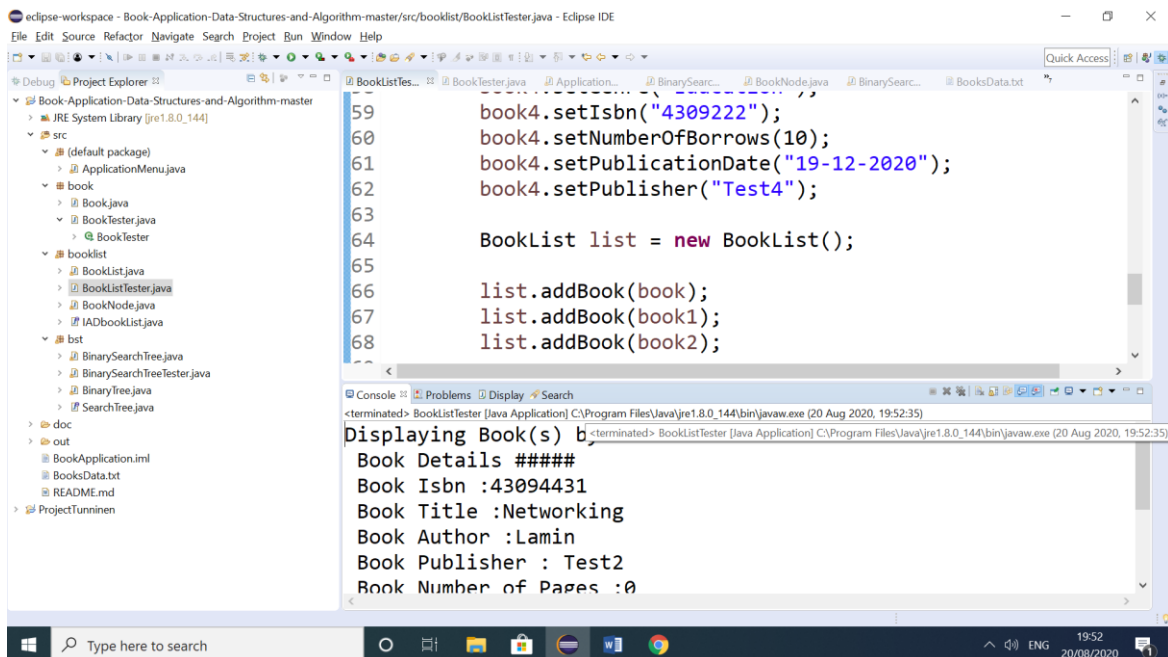
```
1 package book;
2
3 /**
4  * this class test the implementation of methods
5  * in the Book class.
6  */
7 public class BookTester {
8
9     public static void main(String[] args){
10         try {
11             Book book = new Book();
```

The Console window at the bottom shows the output of the program:

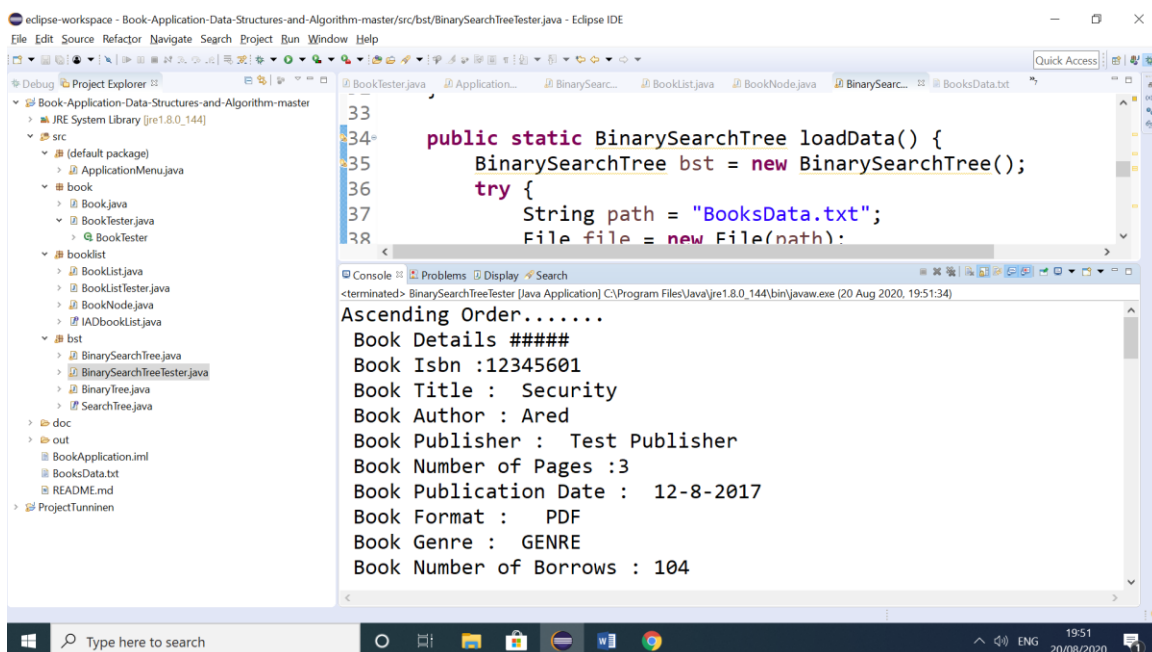
```
<terminated> BookTester [Java Application] C:\Program Files\Java\jre1.8.0_144\bin\javaw.exe (20 Aug 2020, 19:52:04)
Book Details #####
Book isbn :4309443
Book Title :Programming
Book Author :Ousainou Jaiteh
Book Publisher : Test
Book Number of Pages :0
Book Publication Date : 20-12-2018
```

2. **BookList Tester class:** This class test the implementation of the methods in the **BookList** and **BookNode** classes. We created 5 Books in this class with respective data using the available setter methods in the Book class. We also instantiate the **BookList** class to add all 5 Books into the BookList LinkedList. The constructor of the BookList class allows us to create a Book as a BookNote. So every Book is a

BookNode that has reference to the next BookNode. This is seen in the **BookNode** class. See Figure below:

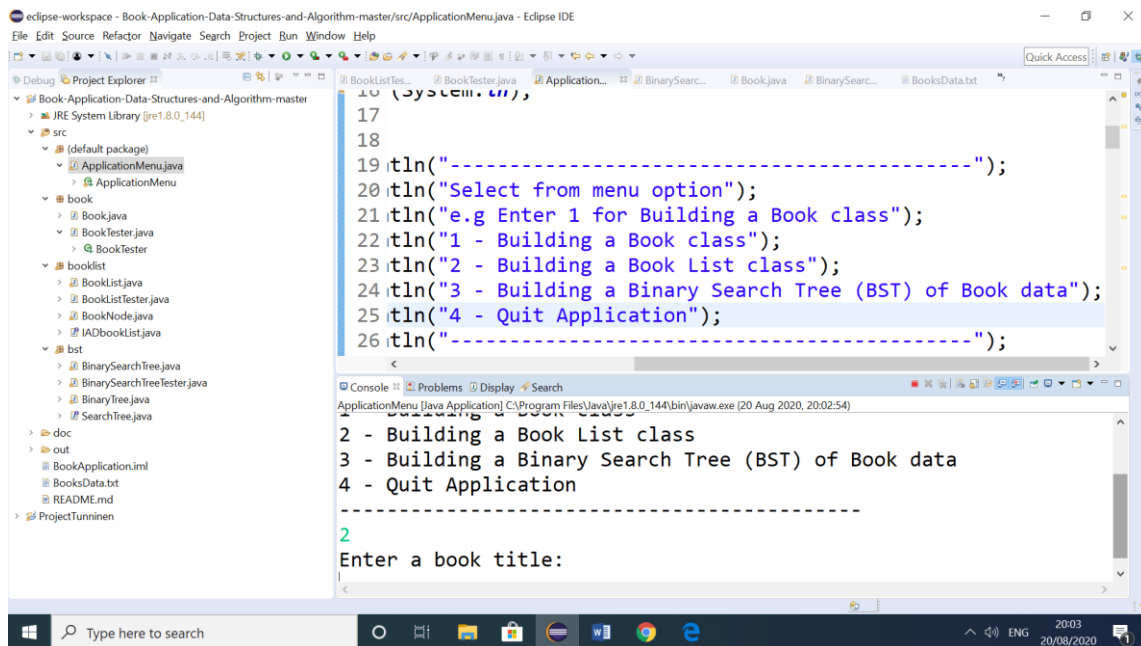


3. **Binary Search Tree Tester class:** This class test the implementation of methods in the Binary Search Tree class. It loads data from BooksData.txt which contains data of Books and their properties. This data is loaded using the LoadData method and then I read through it using File reader to load the data in memory and created methods to sort data in ascending or descending order by author name. See figure below:

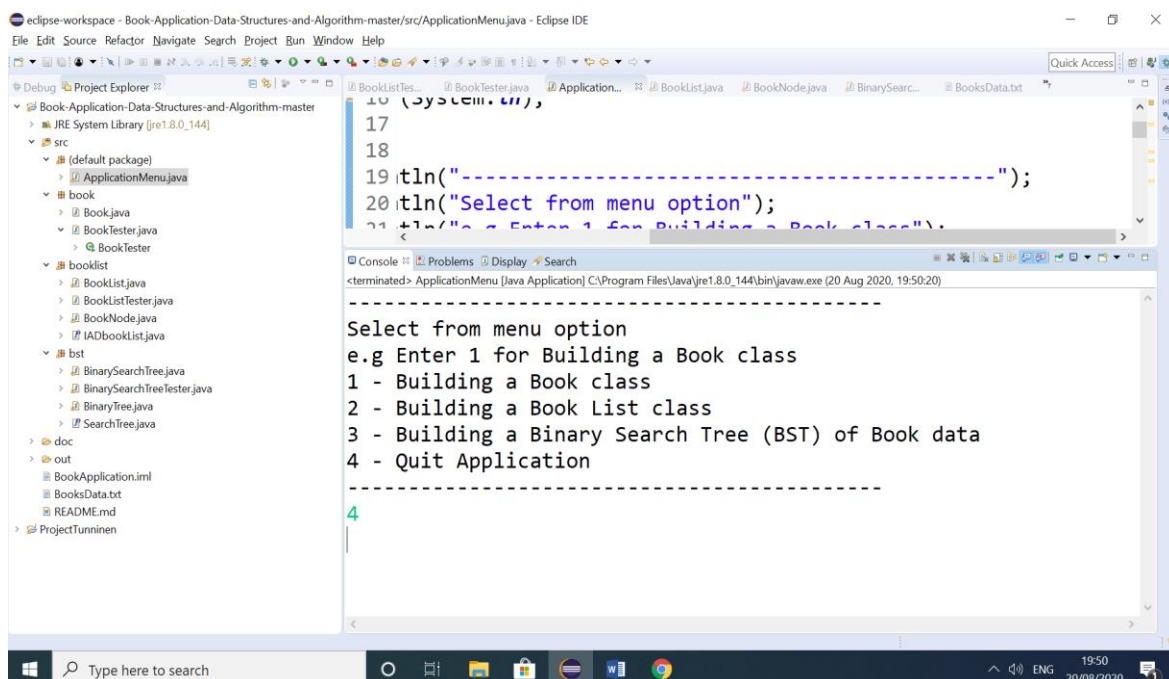


4. **Application Menu class:** This class test the implementation of methods in the Book, BookList and BinarySearchTree classes. It allows the user to select a menu option to test any one of the Tester class implementation of these classes. So the user gets to select from the console an option from 1 to 4 and has the choice to repeat the process again. Option 4 allows the user to quit the application. See figure below:

## Option 2



## Option 4



5. Lastly, the **Javadoc** is location in the “docs” folder. To view it, simple click on the index.html page.

