Martin Hynes
16390836

Book.java

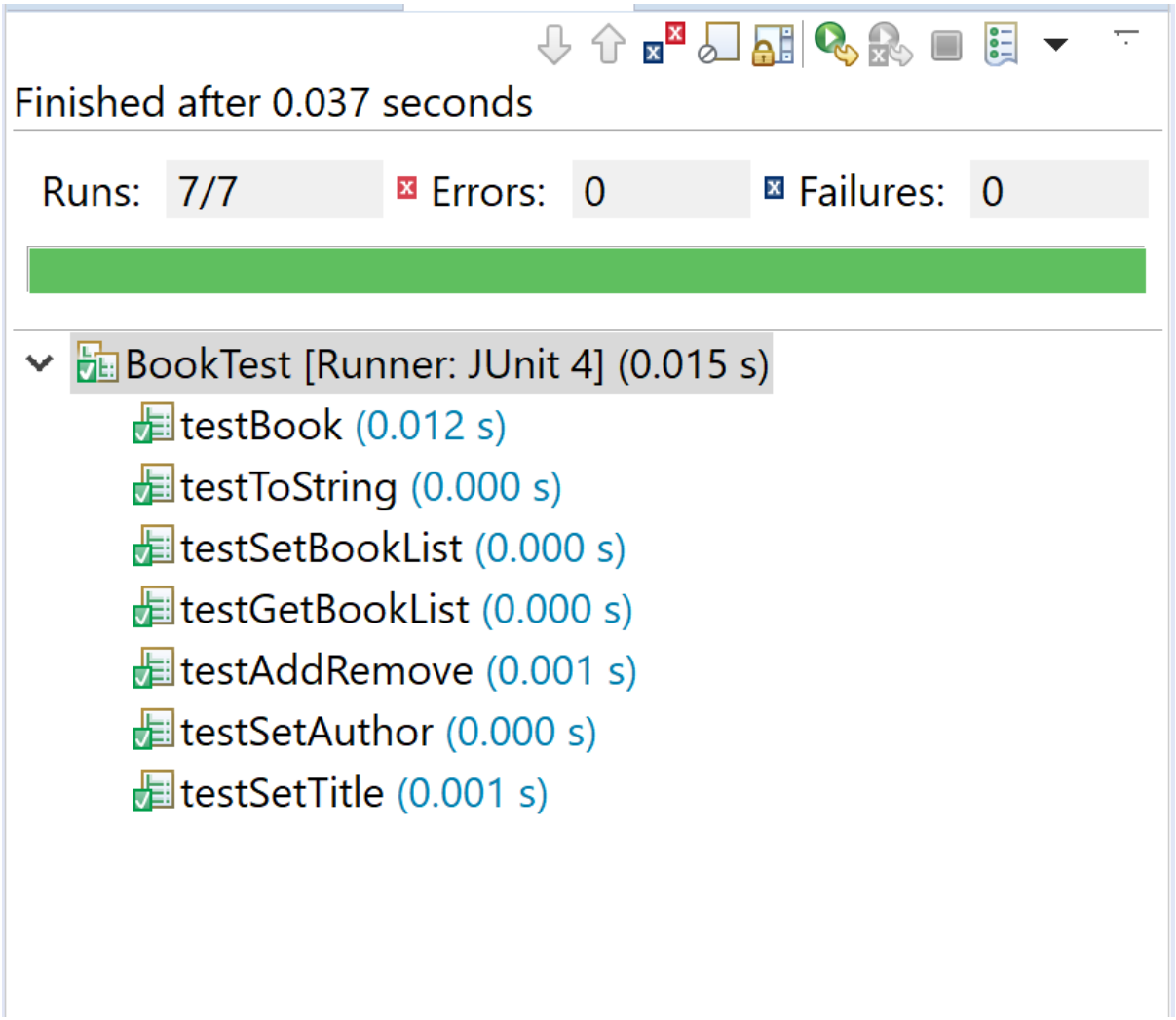
```
//Import ArrayList
import java.util.ArrayList;

public class Book{

	//create private instance variables
	private String title;
	private String author;
	private ArrayList<Book> bookList;

	//Constructor
	public Book(){
		this.title = "Unassigned";
		this.author = "Unknown";
		bookList = new ArrayList<Book>();
	}

	//Title accessor
	public String getTitle(){
		return this.title;
	}
	//Title changer
	public void setTitle(String Title){
		this.title = Title;
	}

	//Author accessor
	public String getAuthor(){
		return this.author;
	}
	// Author changer
	public void setAuthor(String Author){
		this.author = Author;
	}

	//BookList accessor
	public ArrayList<Book> getBookList(){
		return this.bookList;
	}

	//BookList changer
	public void setBookList(ArrayList<Book> list) {
		this.bookList = list;
	}

//	public void setBookList(Book book) {
//		if(this.getBookList().contains(book)){
//			bookList.remove(book);
//		}else {
//			bookList.add(book);
//		}
//	}
	//toString override
	public String toString() {
```

```
            return "Title: "+this.title+". Author: "+this.author+".";
        }
}
```

BookTest.java

```
//Import required packages
import java.util.ArrayList;
import static org.junit.Assert.*;
import org.junit.Before;
import org.junit.After;
import org.junit.Test;
import org.junit.Ignore;

public class BookTest{//open class
        //define book variable
        private Book book;

        //create a new book object before each test
        @Before
        public void setup(){
                book = new Book();
        }

        //delete the book object after each test
        @After
        public void setUp(){
                book = null;
        }

        //test the constructor
        //make sure title and author defaults are working
        @Test
        public void testBook(){
                assertNotNull(book);
                assertEquals("Unassigned", book.getTitle());
                assertEquals("Unknown",book.getAuthor());
        }

        //Test setTitle method
        @Test
        public void testSetTitle(){
                book.setTitle("Harry Potter");
                assertEquals("Harry Potter",book.getTitle());
        }

        //Test setAuthor method
        @Test
        public void testSetAuthor(){
                book.setAuthor("J. K. Rowling");
                assertEquals("J. K. Rowling",book.getAuthor());
        }

        //Test toString override
        //@Ignore
```

```
	@Test
	public void testToString(){
		book.setTitle("Harry Potter");
		book.setAuthor("J. K. Rowling");
		assertEquals("Title: Harry Potter. Author: J. K.
Rowling.",book.toString());
	}

	//Test getBookList method
	//@Ignore
	@Test
	public void testGetBookList(){
		assertEquals(0,book.getBookList().size());
	}

	//Test setBookList method
	//@Ignore
	@Test
	public void testSetBookList() {
		ArrayList<Book> list = new ArrayList<Book>();
		list.add(book);
		book.setBookList(list);
		assertEquals(book.getBookList(),list);
	}

	//Test that items are added and removed from ArrayList successfully.
	//@Ignore
	@Test
	public void testAddRemove(){
		book.setTitle("Harry Potter");
		book.setAuthor("J. K. Rowling");
		assertEquals(0,book.getBookList().size());
		book.getBookList().add(book);
		assertEquals(1,book.getBookList().size());
		book.getBookList().remove(book);
		assertEquals(0,book.getBookList().size());
	}
}
```


Finished after 0.037 seconds
Runs: 7/7
Errors: 0
Failures: 0
BookTest [Runner: JUnit 4] (0.015 s)
testBook (0.012 s)
testToString (0.000 s)
testSetBookList (0.000 s)
testGetBookList (0.000 s)
testAddRemove (0.001 s)
testSetAuthor (0.000 s)
testSetTitle (0.001 s)