**CT3533 Assignment 1**

1.) Book Class:

**import** java.util.\*;

**public** **class** Book {

//Initialising variables

**private** String title;

**private** String author;

**private** ArrayList<Book> bookList;

//Constructor

**public** Book() {

title = **null**;

author = **null**;

bookList = **new** ArrayList<Book>();

}

//Getters

**public** ArrayList<Book> getBookList() {

**return** bookList;

}

**public** String getTitle() {

**return** title;

}

**public** String getAuthor() {

**return** author;

}

//Setters

**public** **void** setBookList(ArrayList<Book> bookList) {

**this**.bookList = bookList;

}

**public** **void** setTitle(String title) {

**this**.title = title;

}

**public** **void** setAuthor(String author) {

**this**.author = author;

}

//toString Method

**public** String toString() {

**return** "Title: " + title + " Author: " + author;

}

}

2.) JUnit Test Class:

**import** **static** org.junit.Assert.\*;

**import** org.junit.After;

**import** org.junit.Before;

**import** org.junit.Ignore;

**import** org.junit.Test;

**public** **class** BookJUnitTest {

//default test

@Ignore

@Test

**public** **void** test() {

*fail*("Not yet implemented");

}

//set up variables

Book b;

//setup function

@Before

**public** **void** setUp() {

b = **new** Book();

}

//test Constructor

@Test

**public** **void** testConstructor() {

*assertNotNull*(b);

*assertEquals*(**null**, b.getAuthor());

*assertEquals*(**null**, b.getTitle());

}

//Test Get/Set Author

@Test

**public** **void** testSetGetAuthor() {

b.setAuthor("John Doe");

*assertEquals*("John Doe", b.getAuthor());

}

//Test Get/Set Title

@Test

**public** **void** testSetGetTitle(){

b.setTitle("BookName");

*assertEquals*("BookName", b.getTitle());

}

//Test toString

@Test

**public** **void** testToString() {

b.setTitle("BookTitle");

b.setAuthor("John Doe");

*assertEquals*("Title: BookTitle Author: John Doe", b.toString());

}

//Test to add an element to the ArrayList

@Test

**public** **void** testAdd() {

b.getBookList().add(b);

*assertEquals*(1, b.getBookList().size());

}

//Test to remove an element from the ArrayList

@Test

**public** **void** testRemove() {

b.getBookList().remove(b);

*assertEquals*(0, b.getBookList().size());

}

//teardown function

@After

**public** **void** tearDown() {

b = **null**;

}

}

3.) JUnit test:

