

## Software Quality Assurance Assignment 3

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### Question 1 (20%)

Give one positive and one negative test situation for each functional requirement in Section A.

F1. The e-BookStore shall allow the addition of books to the store's books catalogue

F1.a Positive test case: Book is added to catalog after being submitted

F1.b Negative test case: Book is not added to catalog

F1.1. The following information shall be provided for each book:

- a mandatory category
- a mandatory book id that must be between 5 and 8 characters long
- a mandatory book title
- a mandatory book author name(s)
- an optional book description
- a mandatory cost that must be a decimal number greater or equal to 0.0

F1.1.a Positive test case: Book with all required information is added to catalog

F1.1.b Negative test case: Book that is missing author name is not allowed to be added to catalog

F2. The e-BookStore shall allow customers to browse through the store's books catalogue by displaying books resulting from a search

F2.a Positive test case: User searches for book that is in the catalog, and that book is displayed

F2.b Negative test case: User searches for book that is not in the catalog, and nothing is displayed

F2.1. The e-BookStore shall allow books to be searched by category

F2.1.a Positive test case: User chooses category and the books in that category are displayed

F2.1.b Negative test case: User chooses category and books not in that category are not displayed

F2.2. The whole catalogue shall be returned for a search with an empty value for category

F2.2.a Positive test case: User searches for empty value and all the books in the catalog are displayed

F2.2.b Negative test case: User searches for a category and books that are not in the category are omitted from being displayed

F3. The e-BookStore shall allow customers to add books to a books order

F3. a Positive test case: User selects a particular book and it is added to the book order

F3. b Negative test case: User tries to add an out of stock book to the order and the book is not added to the order // can't test, no way to add book that is not in stock to order

F4. The e-BookStore shall allow customers to view the content of their books order

F4. a Positive test case: user adds a book to an order then views that order

F4. b Negative test case: user tries to view an order with no books

F4. 1. The following information shall be shown for each of the book in the books order

- book id
- book description
- book unit cost
- number of ordered copies
- total cost of the ordered copies (before taxes, shipping and handling)

F4. 1.a Positive test case: user adds a book to an order then views that order and all info is displayed

F4. 1.b Negative test case: user removes a book from the order and the information is no longer displayed

F5. The e-BookStore shall allow customers to update the number of ordered copies of books in their books order

F5. a Positive test case: user increases the number of ordered copies of a book

F5. b Negative test case:

F5.1. A book shall be removed from the books order if its number of ordered copies is less or equal to 0.

F5.1.a Positive test case: user decreases the number of ordered copies of a book from 1 to 0

F5.1.b Negative test case:

F6. The e-BookStore shall compute and present upon checkout to customers:

- the date of their books order
- the total amount of their books order
- the amount of taxes of their books order
- the amount of handling and shipping fee of their book order

F6.a Positive test case: user orders and checks out a book

F6.b Negative test case: user tries to check out an empty book order

F6.1. The e-BookStore shall apply a tax rate of 13% on all books orders

F6.1.a Positive test case: user checks out a book order and the total price is 13% higher than the subtotal

F6.1.b Negative test case: a user tries to check out a book order with multiple books, one of those books is removed and the tax on that book is no longer included in the total price

F6.2. The e-BookStore shall apply a fixed rate of \$10 plus 5% of a books order amount as handling and shipping fee.

F6.2. a Positive test case: book is checked out and shipping fee is added

F6.2.b Negative test case: no books are checked out and shipping fee is 0

F7. The e-BookStore shall allow the removal of books from the store's books catalogue

F7.a Positive test case: admin removes book from catalog

F7.b Negative test case:

F8. The e-BookStore shall allow the authentication of administrators before allowing them to add/remove books to/from the catalogue

F8.a Positive test case: admin user logs in with proper credentials

F8.b Negative test case: admin user is denied entry when using improper credentials

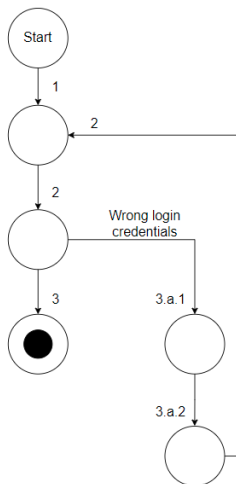
Question 2 (30%)

Derive test cases based on the use cases in section C.

For each use case give

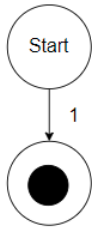
1. A scenario graph
2. A set of scenarios ensuring branch coverage of the scenario graph
3. Abstract test cases corresponding to scenarios

1. Use Case: Administrator Sign in



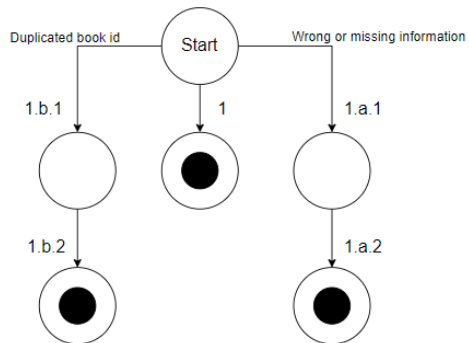
Id	Events	Description
1.1	1-2-3-4	Administrator enters login information and signs in
1.2	1-2-3-3.a.1-3.a.2-2*-3-4	Administrator enters incorrect login information

2. Use Case: Administrator Sign out



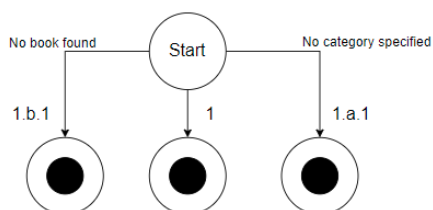
Id	Events	Description
2.1	1-2	Administrator logs out

### 3. Use Case: Add Book



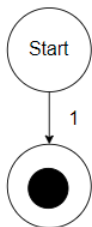
Id	Events	Description
3.1	1-2	Admin adds book
3.2	1-1.a.1-1.a.2	Admin adds book with wrong information
3.3	1-1.b.1-1.b.2	Admin adds book already in catalog

### 4. Use Case: Browse Catalogue



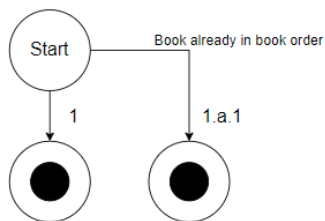
Id	Events	Description
4.1	1-2	User selects category to browse books
4.2	1-1.a.1	User tries to browse books without specifying a category
4.3	1-1.b.1	User selects a category containing no books

#### 5. Use Case: Remove Book



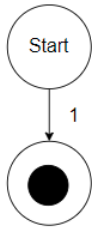
Id	Events	Description
5.1	1-2	Administrator removes book from catalog

#### 6. Use Case: Order Book



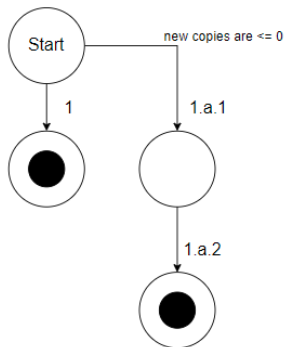
Id	Events	Description
6.1	1-2	User adds new book to book order
6.2	1-1.a.1	User adds book to book order that is already in the book order

#### 7. Use Case: View Books Order



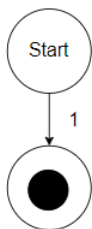
Id	Events	Description
7.1	1-2	User views her book order

## 8. Use Case: Update Book Order



Id	Events	Description
8.1	1-2	User changes number of copies in book order to >0
8.2	1-1.a.1	User changes number of copies in book order to <= 0

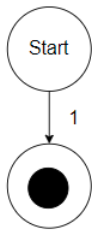
## 9. Use Case: Check out



Id	Events	Description
9.1	1-2	User proceeds to checkout from book order



#### 10. Use Case: Select language



Id	Events	Description
10.1	1-2	User selects a language

#### Question 3 (50%)

Provide a implementation of the test situations derived from the functional requirements in Question 1 and use case scenarios Question 2. Ensure you have traceability between your test implementation and the test situation. Give a brief explanation if you determine that a test situation cannot be implemented. The function requirements should be written in Selenium using WebDriver, and the use case scenarios can be implemented using either Selenium directly, or with Cucumber (with StepDefs and Selenium invocation). Attach screenshots of the result of running your tests to your report.

See attached code

Traceability between the test implementation and the test situation is located beside each test name