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| Guillaume Labasse | **Homework 3** | SEG3103 |
| 300132984 | **E-Book Store** | 20/06/2021 |

**Question 1**

**Assumption:** In general, requirements with only one sub-section that serve as additional details are treated as one requirement. I make an exception for F5 and F5.1 which seem distinct enough to me, and that I separate into two requirements.

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| --- | --- | --- |
| **Req** | **Positive Situation** | **Negative Situation** |
| **F1** | All book information fields are given valid input → book added to catalogue. | Some fields have invalid input (e.g., nothing in the Category, Title and Author fields; Book ID less than 5 characters or more than 8; Cost not a number or lower than 0) → book not added to catalogue. |
| **F2.1** | Non-empty category searched for → books from that category are displayed. | Empty (thus inexistant) category searched for → no books displayed. |
| **F2.2** | Catalogue is not empty → all books from the catalogue are displayed. | Catalogue is empty → no books displayed. |
| **F3** | Desired book is available → book added to order. | Desired book unavailable (e.g., out of stock) → book not added to order. |
| **F4** | Book order is not empty → user can view its contents. | Book order is empty → cannot view the contents. |
| **F5** | Book order list not empty, valid number of copies greater than one given → number of ordered copies updated. *This number can also be increased at the “adding books from catalogue” step.* | Cannot be tested with an empty book order; the feature is not available. With a non-empty order, invalid (e.g., not a number) number of copies given OR item was already removed → number of copies is not updated. |
| **F5.1** | Book currently in order → book removed from order. | Book already removed from order → nothing changes. |
| **F6.1** | Valid (e.g., not empty, not exceeding stock) order sent → checkout information displayed with tax rate correctly calculated. | Invalid (e.g., empty or exceeding stock) order sent → error message instead of checkout information (no tax rate). See note. |
| **F6.2** | Valid (e.g., not empty, not exceeding stock) order sent → checkout information displayed with handling & shipping fees correctly calculated. | Invalid (e.g., empty or exceeding stock) order sent → error message instead of checkout information (no handling & shipping fees). See note. |
| **F7** | Catalogue is not empty → books can be removed. | Catalogue is empty → no books to remove. See note. |
| **F8** | Valid administrator credentials given → admin logged in | Invalid credentials given → user not logged in as admin. |

**Note**: These are situations where the feature in question *cannot be accessed*. There is no way to both use this feature and get a negative result. As I added the concept of “availability” for F3, you may also consider the concept of “undeletability” for a better F7 negative test scenario, but I was unable to come up with acceptable reasons for why a book should be impossible to delete.

**Question 2**

**Use Case 1**: Administrator Sign in

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| --- | --- |
| **Main Scenario**  1. Administrator navigates to administrators’ operation page  2. e-BookStore asks for login credentials  3. Administrator enters login credentials  4. e-BookStore presents administrators operations page  **Alternatives**  3. a. Wrong login credentials  3. a. 1. e-BookStore displays invalid credentials error message  3. a. 2. GOTO Step 2 |  |

**Scenario Set:**

|  |  |  |
| --- | --- | --- |
| **ID** | **Event Sequence** | **Scenario Description** |
| 1 | 1-2-3-4 | Normal course of events; admin logins with valid credentials. |
| 2 | 1-2-3-3a.1-2\*-3-4 | Admin logins after giving invalid credentials any number of times. |

**Abstract Test Case Set:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case**: SignInTC1 **Goal**: Test normal course of events for admin login. **Scenario** #: 1 **Setup**: Opened the admin login page; account with name "admin" and password "password" exists. **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | User submits username "admin" and password "password" | System validates admin credentials and opens admin session. |   **Success Criteria**: Admin logged in |
| **Test Case**: SignInTC2 **Goal**: Test for successful admin login after a few failures entering credential. **Scenario** #: 2 **Setup**: Opened the admin login page; account with name "admin" and password "password" exists. **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | User submits username "blah" | System displays "invalid username and/or password" | | **2** | User submits password username "foo" and password "bar" | System displays "invalid username and/or password" | | **3** | User submits username "admin" and password "password" | System validates admin credentials and opens admin session. |   **Success Criteria**: Admin logged in |

**Use Case 2**: Administrator Log Out

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| **Main Scenario**  1. Administrator selects to Sign out  2. e-BookStore acknowledges that Administrator has Signed out **Added** 3.User goes back to login screen |  |

**Scenario Set:**

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| --- | --- | --- |
| **ID** | **Event Sequence** | **Scenario Description** |
| 1 | 1-2-3 | Normal course of events. Administrator logs out. |

**Abstract Test Case Set:**

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| --- | --- | --- | --- | --- | --- | --- |
| **Test Case**: LogOutTC1 **Goal**: Test the main course of events for logging out. **Scenario** #: 1 **Setup**: Administrator is logged in on the home page **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | User clicks "Sign out" button | System logs out user and redirects them to login screen. |   **Success Criteria**: Administrator is logged out. |

**Use Case 3**: Add Book

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| **Main Scenario**  1. Administrator enters the book information  2. e-BookStore acknowledge the book addition to the catalogue  **Alternatives**  1. a. Wrong or missing information  1. a. 1. e-BookStore displays the pertinent error messages  1. a. 2. GOTO Step 1  1. b. Duplicated book id  1. b. 1. e-BookStore displays a duplicated book id error message  1. b. 2. GOTO Step 1 |  |

**Scenario Set:**

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| --- | --- | --- |
| **ID** | **Event Sequence** | **Scenario Description** |
| 1 | 1-2 | Normal course of events. Book added. |
| 2 | 1-1a.1-1\*-2 | Book added after invalid information rejected any number of times. |
| 3 | 1-1b.1-1\*-2 | Book added after invalid (duplicate) ID rejected any number of times. |
| 4 | 1-1a.1-1-1b.1-1-2 | Book added after invalid information rejected + invalid ID rejected once. |

*Additional scenarios can be added for repeated failures due to* ***both*** *reasons but those would add a lot more work on my side for little actual utility.*

**Abstract Test Case Set:**

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| --- | --- | --- | --- | --- | --- | --- |
| **Test Case**: AddBookTC1 **Goal**: Test normal course of events for adding books. **Scenario** #: 1 **Setup**: Admin is logged in; valid information entered. **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | Admin clicks Add button | System adds the book to the catalogue. |   **Success Criteria**: Book added to catalogue. |
| **Test Case**: AddBookTC2 **Goal**: Test adding a book after entering invalid information. **Scenario** #: 2 **Setup**: Admin is logged in; no information entered. **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | Admin clicks Add button | System displays all validation errors. | | **2** | Admin enters "a" in all fields & clicks Add | System displays "invalid id" and "invalid cost" errors. | | **3** | Admin enters "aaaaa" as ID and 1 as Cost & clicks Add | System adds the book to the catalogue. |   **Success Criteria**: Book added to catalogue. |
| **Test Case**: AddBookTC3 **Goal**: Test adding a book after entering duplicate IDs (already in catalogue). **Scenario** #: 3 **Setup**: Admin is logged in; AddBookTC2; valid information entered with ID "aaaaa" **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | Admin clicks Add button | System gives "id already exists" error | | **2** | Admin enters "bbbbbb" ID & clicks Add | System adds the book to the catalogue. |   **Success Criteria**: Book added to catalogue. |
| **Test Case**: AddBookTC4 **Goal**: Test adding a book after entering invalid information and duplicate ID. **Scenario** #: 4 **Setup**: Admin is logged in; AddBookTC2; no information entered. **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | Admin clicks Add button | System displays all validation errors. | | **2** | Admin enters "a" in all fields, "aaaaa" as ID and 1 as cost & clicks Add | System gives "id already exists" error | | **3** | Admin enters "ccccccc" as ID & clicks add | System adds the book to the catalogue. |   **Success Criteria**: Book added to catalogue. |

**Use Case 4**: Browse Catalogue

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| **Main Scenario**  1. User specifies a category upon which a catalogue search is to be performed  2. e-BookStore shows a list of books satisfying the selected category  **Alternatives**  1. a. No category was specified  1. a. 1. e-BookStore shows a list of all the books in the catalogue  1. b. No book satisfying the searched category is found  1. b. 1. e-BookStore displays a no matching book found message |  |

**Scenario Set:**

|  |  |  |
| --- | --- | --- |
| **ID** | **Event Sequence** | **Scenario Description** |
| 1 | 1-2 | Normal course of events. Category displayed. |
| 2 | 1-1a.1 | Full catalogue displayed. |
| 3 | 1-1b.1 | No books displayed. |

**Abstract Test Case Set:**

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| --- | --- | --- | --- | --- | --- | --- |
| **Test Case**: BrowseTC1 **Goal**: Test the normal course of events for searching **Scenario** #: 1 **Setup**: AddBookTC2 **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | User searches for category "a" | System displays the book added in AddBookTC2. |   **Success Criteria**: Books displayed |
| **Test Case**: BrowseTC2 **Goal**: Test the normal course of events for displaying the full catalogue **Scenario** #: 2 **Setup**: None **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | User clicks search. | System displays all books in the catalogue. |   **Success Criteria**: All books displayed |
| **Test Case**: BrowseTC3 **Goal**: Test for searching an empty/non-existent category **Scenario** #: 3 **Setup**: None **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | User searches for category "foobar" | A "no item matching category" error message is displayed. |   **Success Criteria**: No books displayed |

**Use Case 5:** Remove Book

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| **Main Scenario**  1. Administrator selects to remove a book  2. e-BookStore shows the list of books without the removed book |  |

**Scenario Set:**

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| --- | --- | --- |
| **ID** | **Event Sequence** | **Scenario Description** |
| 1 | 1-2 | Normal course of events. Book removed. |

**Abstract Test Case Set:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case**: RemoveBookTC1 **Goal**: Test the normal course of events for removing books **Scenario** #: 1 **Setup**: Logged in as admin; non-empty category searched for **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | Admin clicks Delete button | System removes book from list & catalogue. |   **Success Criteria**: Given book removed from catalogue |

**Use Case 6**: Order Book

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| **Main Scenario**  1. Customer selects a book to add to his/her books order  2. e-BookStore add the book to the books order  **Alternatives**  1. a. The selected book is already in the customer’s books order  1. a. 1. e-BookStore increments the number of copies of the book in the books order |  |

**Scenario Set:**

|  |  |  |
| --- | --- | --- |
| **ID** | **Event Sequence** | **Scenario Description** |
| 1 | 1-2 | Normal course of events. Book added to order. |
| 2 | 1-1a.1 | Number of copies in order for selected book incremented. |

**Abstract Test Case Set:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case**: OrderBookTC1 **Goal**: Test the normal course of events for adding books to an order **Scenario** #: 1 **Setup**: Not logged in as admin, book list displayed, AddBookTC2 **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | User clicks "add to cart" for book titled "a" | System adds book "a" with ID "aaaaa" to order. |   **Success Criteria**: Book added to order |
| **Test Case**: OrderBookTC2 **Goal**: Test adding multiple books to an order from the search result list **Scenario** #: 2 **Setup**: Not logged in as admin, book list displayed, AddBookTC2, OrderBookTC1 **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | User clicks "add to cart" for book titled "a" | System adds book "a" with ID "aaaaa" to order a second time. |   **Success Criteria**: Book added to order twice |

**Use Case 7**: View Books Order

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| **Main Scenario**  1. Customer selects to view his/her books order  2. e-BookStore shows the books order information |  |

**Scenario Set:**

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| --- | --- | --- |
| **ID** | **Event Sequence** | **Scenario Description** |
| 1 | 1-2 | Normal course of events. Book order displayed. |

**Abstract Test Case Set:**

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| --- | --- | --- | --- | --- | --- | --- |
| **Test Case**: ViewOrderTC1 **Goal**: Test the normal course of events for viewing a book order **Scenario** #: 1 **Setup**: OrderBookTC1 **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | User clicks the cart icon | System redirects user to the order page. |   **Success Criteria**: Book order displayed |

**Use Case 8**: Update Books Order

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| **Main Scenario**  1. Customer specifies a number of copies for an ordered book  2. e-BookStore updates the total cost for the book  **Alternatives**  1. a. New number of copies is less or equal to 0  1. a. 1. e-BookStore updates the total cost for the book to 0  1. a. 2. e-BookStore removes the book from the books order |  |

**Scenario Set:**

|  |  |  |
| --- | --- | --- |
| **ID** | **Event Sequence** | **Scenario Description** |
| 1 | 1-2 | Normal course of events. Number of copies updated for selected book. |
| 2 | 1-1a.1-1a.2 | Total cost for book set to 0, book removed from the order table. |

**Abstract Test Case Set:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case**: UpdateOrderTC1 **Goal**: Test the normal course of events for updating the number of copies in an order (n > 0) **Scenario** #: 1 **Setup**: OrderBookTC1; ViewOrderTC1  **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | User writes "3" in number field & clicks Update | System updates total cost and shows "$3.00". |   **Success Criteria**: Order is updated |
| **Test Case**: UpdateOrderTC2 **Goal**: Test deleting a book from an order by updating its copy number to 0 **Scenario** #: 2 **Setup**: OrderBookTC1; ViewOrderTC1  **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | User writes "0" in number field & clicks Update | System updates total cost to 0 and removes book from list. |   **Success Criteria**: Order list is emptied |

**Use Case 9**: Check Out

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| **Main Scenario**  1. Customer select to checkout  2. e-BookStore processes the books order and display the information |  |

**Scenario Set:**

|  |  |  |
| --- | --- | --- |
| **ID** | **Event Sequence** | **Scenario Description** |
| 1 | 1-2 | Normal course of events. Checkout page displayed. |

**Abstract Test Case Set:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case**: CheckOutTC1 **Goal**: Test the normal course of action for checking out. **Scenario** #: 1 **Setup**: OrderBookTC1; ViewOrderTC1; UpdateOrderTC1 **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | User clicks "Proceed to Checkout" | System displays checkout page. |   **Success Criteria**: Checkout page displayed; total check shown is $13.54 |

**Use Case 10**: Select Language

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| **Main Scenario**  1. Customer select a language  2. e-BookStore displays information in the selected language |  |

**Scenario Set:**

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| --- | --- | --- |
| **ID** | **Event Sequence** | **Scenario Description** |
| 1 | 1-2 | Normal course of events. Language changed. |

**Abstract Test Case Set:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case**: SelectLanguageTC1 **Goal**: Test the normal course of events for changing languages. **Scenario** #: 1 **Setup**: Page loaded in English **Course of test case**   |  |  |  | | --- | --- | --- | |  | **External Event** | **Reaction** | | **1** | User clicks language selector and selects "French" | System reloads active page with all text content translated to French. |   **Success Criteria**: Language changed to French |

**Question 3**

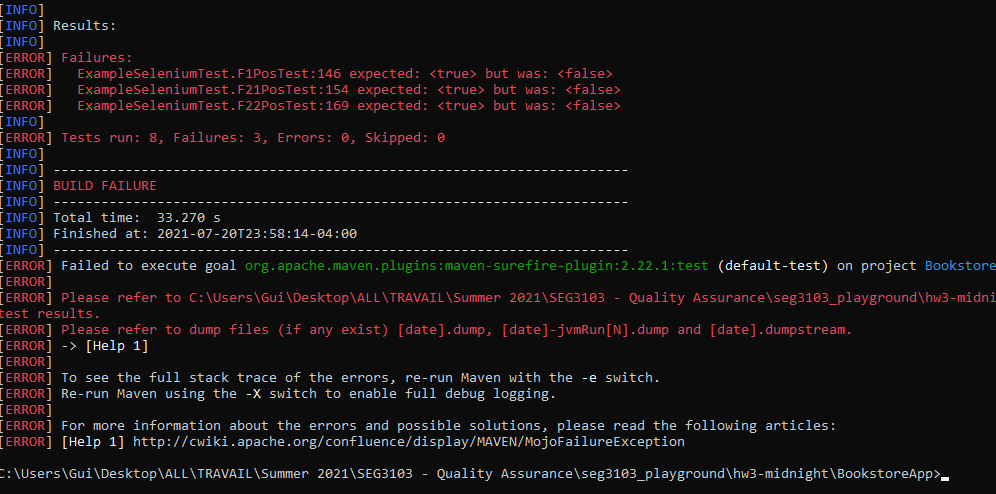
Please find all my tests in BookStoreApp/src/test/java/selenium/SeleniumTest.java.

All test-case tests use the same name they were given in Q2; functional positive and negative tests are also named appropriately (i.e., "F4PosTest" for the positive test situation for F4).

**Implementation Issues:**

* None so far

**Running the Tests:**



I was not able to finish this question in time.