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

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

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

Positive test case: Book with all required information is added to catalog

Negative test case: Book that is missing author name is not 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

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

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

Positive test case: User chooses category and the books in that category are displayed

Negative test case: User chooses category and books not in that category are not displaye

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

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

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

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

Negative test case: User tries to add an out of stock book to the order and the book is not added to the order

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

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

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)

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

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

Positive test case: user increases the number of ordered copies of a book from 1 to 2

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.

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

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

Positive test case: user orders and checks out a book

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

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

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.

Positive test case:

Negative test case:

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

Positive test case:

Negative test case: user tries to remove book that isn’t in catalog

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

Positive test case: admin user logs in with proper credentials

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

Use Case: Administrator Sign in

Title: Administrator Sign in

Primary Actor: Administrator

Goal: An administrator wants to identify himself/herself to the system in order to use it's functions

Precondition: The e-BookStore is ON, Administrator is not logged-in

Postcondition: The Administrator is logged in, the Administrator can perform operations on the store’s catalogue

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

Use Case: Administrator Sign out

Title: Administrator log out

Primary Actor: Administrator

Goal: An administrator wants to sign out of the system

Precondition: Administrator is logged-in

Postcondition: The Administrator is not logged in

Main Scenario

1. Administrator selects to Sign out

2. e-BookStore acknowledges that Administrator has Signed out