SEG3103 homework 3
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# Q1.

F1:

-- f1PTest() --
Positive: A new book with category, id between 5 and 8 characters long, title, author name(s), and cost that is a decimal number greater or equal to 0.0 is allowed is allowed to be added into the store's books catalogue.

-- f1NTest() --
Negative: A new book without category, id between 5 and 8 characters long, title, author name(s), or cost that is a decimal number greater or equal to 0.0 is not allowed to be added into the store's books catalogue.

F2:

-- f2PTest() --
Positive: A customer browses a book through the store's books catalogue by searching it by category.

Negative: The book the customer wants cannot be found in the store's books catalogue by searching it by category.

F2.2:
-- f22PTest() --
Positive: The whole catalogue is returned for a search by a customer with an empty value for category.

F3:

-- f3PTest() --
Positive: A customer adds a book to a books order.

-- Cannot be implemented, because there is no attribute called "storage" for a book, which means the books in the system can never be out of storage. --
Negative: The book the customer wants to add to the books order is out of stock in the bookstore.

F4:

-- f4PTest() --
Positive: A customer views the id, description, unit cost, number of ordered copies, and total cost of the ordered copies (before taxes, shipping and handling) of the books in his/her books order.

-- f4NTest() --
Negative: A customer's books order is empty, nothing can be viewed by the customer.

F5:

-- f5PTest() --
Positive: A customer updates the number of ordered copies of a book in his/her books order.

-- Cannot be implemented, because when the Cart/books order is empty. There is nothing the customer can update, then there is nothing can be tested. --
Negative: A customer's books order is empty, nothing can be updated.

F5.1:
-- f51PTest() --
Positive: A customer updates the number of ordered copies of a book in his/her books order to 0, and the book is removed from the books order.

F6:

-- f6PTest() --
Positive: The date, total amount, amount of taxes, and amount of handling and shipping fee of a customer's books order is computed by the e-BookStore.

-- f6NTest() --
Negative: A customer's books order is empty, the 0 will be shown for the total price and any other fee.

F7:

-- f7PTest() --
Positive: A book is removed from the store's books catalogue.

-- Cannot be implemented, because when the catalogue is empty. There is nothing the administrator can remove, then there is nothing can be tested. --
Negative: The store's books catalogue is empty, no books can be removed.
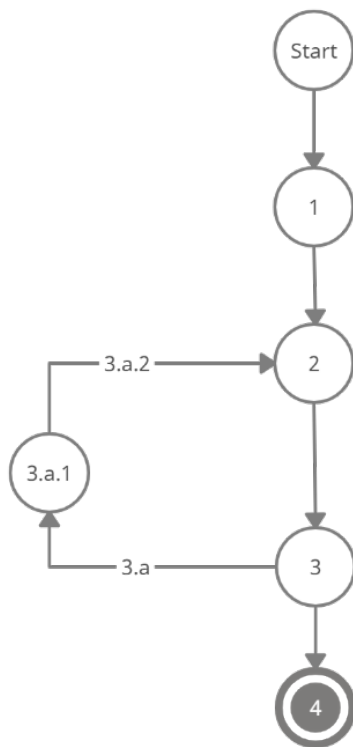
F8:

-- f8PTest() --
Positive: An administrator is authenticated before adding/removing books.

Negative: I really can't figure out what negative is like.

# Q2.

## Use Case 1:

Scenario graph:



Set of scenarios:

| ID | Events | Description |
|---|---|---|
| 1 | 1-2-3-4 | Administrator login one time and successful. |
| 2 | 1-2-3-3.a.1-3.a.2-2-3-4 | Administrator login failed the first time and successfully the second time. |
| 3 | 1-2-3-3.a.1-3.a.2-2-3-3.a.1-3.a.2-2-3-3.a.1-3.a.2-2-3-3.a.1-3.a.2-2-3-… | Administrator keeps login failed. |

Abstract Test Cases:

TC1:
Goal: Test the administrator login function of the system.
Scenario Reference: 1
Setup: Create a valid administrator login credentials #1111 in the system, administrator is not logged-in, system is ON.
Course of test case:

|   | External Event | Reaction |
|---|---|---|
| 1 | Administrator navigates to administrators' operation page | e-BookStore asks for login credentials |
| 2 | Administrator enters login credentials #1111 | e-BookStore presents administrators operations page |

Success criteria: Administrator is logged in at the first time.

TC2:
Goal: Test the administrator login function of the system.
Scenario Reference: 1
Setup: Create a valid administrator login credentials #1111 in the system, administrator is not logged-in, system is ON.
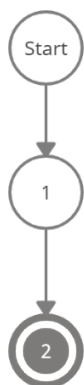Course of test case:

|   | External Event | Reaction |
|---|---|---|
| 1 | Administrator navigates to administrators' operation page | e-BookStore asks for login credentials |
| 2 | Administrator enters login credentials #2222 | e-BookStore displays invalid credentials error message e-BookStore asks for login credentials |

Success criteria: Administrator logged in failed and error message is shown.

# Use Case 2:

Scenario graph:

Set of scenarios:

| ID | Events | Description |
|---|---|---|
| 1 | 1-2 | Administrator sign out successfully |

Abstract Test Cases:

TC1:
Goal: Test the administrator sign out function of the system.
Scenario Reference: 2
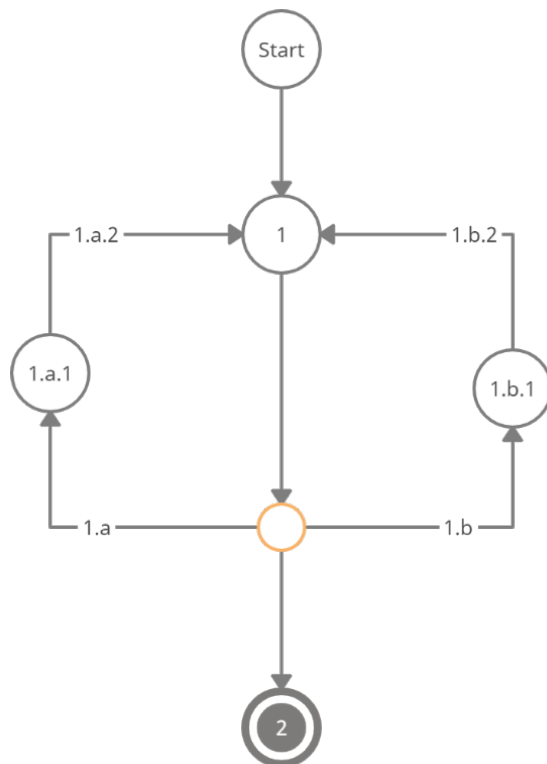Setup: Create an administrator account in the system, administrator is logged-in, system is ON.
Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Administrator selects to Sign out | e-BookStore acknowledges that Administrator has signed out |

Success criteria: Administrator is signed out.

# Use Case 3:

Scenario graph:

Set of scenarios:

| ID | Events | Description |
|---|---|---|
| 1 | 1-2 | Administrator adds one book to the store's catalogue one time and successfully |
| 2 | 1-1.a.1-1.a.2-1-2 | Administrator adds one book to the store's catalogue failed the first time due to wrong or missing information and successfully the second time |
| 3 | 1-1.b.1-1.b.2-1-2 | Administrator adds one book to the store's catalogue failed the first time due to duplicated book id and successfully the second time |
| 4 | 1-1.a.1-1.a.2-1-1.a.1-1.a.2-1-1.a.1-1.a.2-1-1.a.1-1.a.2-1-1.a.1-1.a.2-… | Administrator keeps failing to add a book to the store's catalogue due to wrong or missing information |
| 5 | 1-1.b.1-1.b.2-1-1.b.1-1.b.2-1-1.b.1-1.b.2-1-1.b.1-1.b.2-1-1.b.1-1.b.2-… | Administrator keeps failing to add a book to the store's catalogue due to duplicated book id |

Abstract Test Cases:

TC1:
Goal: Test the administrator adding book function of the system.
Scenario Reference: 3
Setup: Create an administrator account in the system, administrator is logged-in, system is ON.
Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Administrator navigates to the adding book page | e-BookStore asks for book information |
| 2 | Administrator enters the right and complete book information | e-BookStore acknowledge the book addition to the catalogue |

Success criteria: The book is added to the catalogue.

TC2:
Goal: Test the administrator adding book function of the system.
Scenario Reference: 3
Setup: Create an administrator account in the system, administrator is logged-in, system is ON.
Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Administrator navigates to the adding book page | e-BookStore asks for book information |
| 2 | Administrator enters the wrong book information | e-BookStore displays the pertinent error messages |

Success criteria: The book is not added to the catalogue and error message is shown.

TC3:
Goal: Test the administrator adding book function of the system.
Scenario Reference: 3
Setup: Create an administrator account in the system, administrator is logged-in, system is ON.
Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Administrator navigates to the adding book page | e-BookStore asks for book information |
| 2 | Administrator enters the missing book information | e-BookStore displays the pertinent error messages |

Success criteria: The book is not added to the catalogue and error message is shown.

TC4:
Goal: Test the administrator adding book function of the system.
Scenario Reference: 3
Setup: Create an administrator account in the system, administrator is logged-in, system is ON.
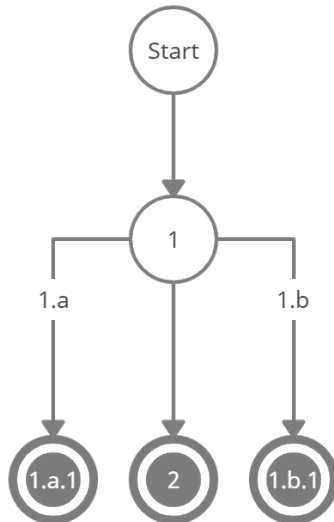Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Administrator navigates to the adding book page | e-BookStore asks for book information |
| 2 | Administrator enters the book information with duplicated book id | e-BookStore displays a duplicated book id error message |

Success criteria: The book is not added to the catalogue and error message is shown.

# Use Case 4:

Scenario graph:



Set of scenarios:

| ID | Events | Description |
|---|---|---|
| 1 | 1-2 | User searches a book by category, and e-BookStore shows a list of books satisfying the selected category |
| 2 | 1-1.a.1 | User specifies no category, and e-BookStore shows a list of all the books in the catalogue |
| 3 | 1-1.b.1 | No book satisfying the searched category is found, and e-BookStore displays a no matching book found message |

Abstract Test Cases:

TC1:
Goal: Test the user browse store's catalogue function of the system.
Scenario Reference: 4
Setup: Create an administrator account in the system, two books with category #1111 and #2222 in the system, administrator is logged-in, system is ON.
Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Administrator navigates to the searching page | e-BookStore asks for searching information |
| 2 | Administrator specifies a category #1111 upon which a catalogue search is to be performed | e-BookStore shows a list of books of category #1111 |

Success criteria: A list of books of category #1111 is shown.

TC2:

Goal: Test the browse store's catalogue function of the system.

Scenario Reference: 4

Setup: Create an administrator account in the system, two books with category #1111 and #2222 in the system, administrator is logged-in, system is ON.

Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Administrator navigates to the searching page | e-BookStore asks for searching information |
| 2 | Administrator specifies no category upon which a catalogue search is to be performed | e-BookStore shows a list of all the books in the catalogue (both #1111 and #2222) |

Success criteria: A list of all the books in the catalogue (both #1111 and #2222) is shown.

TC3:

Goal: Test the browse store's catalogue function of the system.

Scenario Reference: 4

Setup: Create an administrator account in the system, create a book with category #1111 in the system, administrator is logged-in, system is ON.

Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Administrator navigates to the searching page | e-BookStore asks for searching information |
| 2 | Administrator specifies a category #3333 upon which a catalogue search is to be performed | e-BookStore displays a no matching book found message |

Success criteria: A no matching book found message is shown.

TC4:

Goal: Test the user browse store's catalogue function of the system.

Scenario Reference: 4

Setup: Create a customer account in the system, two books with category #1111 and #2222 in the system, customer is logged-in, system is ON.

Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Customer navigates to the searching page | e-BookStore asks for searching information |
| 2 | Customer specifies a category #2222 upon which a catalogue search is to be performed | e-BookStore shows a list of books of category #2222 |

Success criteria: A list of books of category #2222 is shown.

TC5:
Goal: Test the browse store's catalogue function of the system.
Scenario Reference: 4
Setup: Create a customer account in the system, two books with category #1111 and #2222 in the system, customer is logged-in, system is ON.
Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Customer navigates to the searching page | e-BookStore asks for searching information |
| 2 | Customer specifies no category upon which a catalogue search is to be performed | e-BookStore shows a list of all the books in the catalogue (both #1111 and #2222) |

Success criteria: A list of all the books in the catalogue (both #1111 and #2222) is shown.

TC6:
Goal: Test the browse store's catalogue function of the system.
Scenario Reference: 4
Setup: Create a customer account in the system, create a book of category #1111 in the system, customer is logged-in, system is ON.
Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Customer navigates to the searching page | e-BookStore asks for searching information |
| 2 | Customer specifies a category #3333 upon which a catalogue search is to be performed | e-BookStore displays a no matching book found message |

Success criteria: A no matching book found message is shown.

# Use Case 5:

Scenario graph:

Set of scenarios:

| ID | Events | Description |
|----|--------|-------------|
| 1 | 1-2 | Administrator removes a book from the store's catalogue |

Abstract Test Cases:

TC1:
Goal: Test the administrator Remove Book function of the system.
Scenario Reference: 5
Setup: Create an administrator account in the system, create a book #1111 in the system, administrator is logged-in, system is ON.
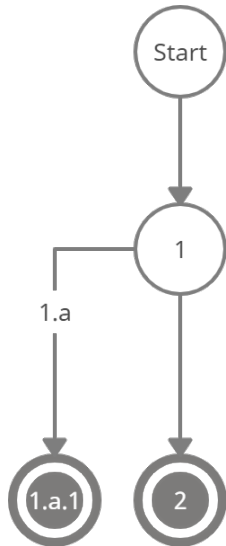Course of test case:

| | External Event | Reaction |
|---|----------------|----------|
| 1 | Administrator navigates to the removing book page | e-BookStore shows all books in the catalogue |
| 1 | Administrator selects to remove the book #1111 | e-BookStore shows the list of books without #1111 |

Success criteria: Book #1111 is not shown.

# Use Case 6:

Scenario graph:



Set of scenarios:

| ID | Events | Description |
|----|--------|-------------|
| 1 | 1-2 | Customer selects a book to add to his/her books order |
| 2 | 1-1.a.1 | Customer selects a book already in his/her books order to add to his/her books order |

Abstract Test Cases:

TC1:
Goal: Test the customer Order Books function of the system.
Scenario Reference: 6
Setup: Create a customer account in the system, create a book #1111 in the system, customer is logged-in, system is ON.
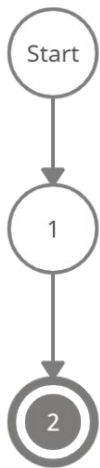Course of test case:

| | External Event | Reaction |
|---|----------------|----------|
| 1 | Customer navigates to the ordering book page | e-BookStore shows all books in the catalogue |
| 2 | Customer selects a book #1111 to add to his/her books order | e-BookStore acknowledge the book #1111 addition to the books order |

Success criteria: Book #1111 is in customer's books order, amount is 1.

TC2:

Goal: Test the customer Order Books function of the system.

Scenario Reference: 6

Setup: Create a customer account in the system, create a book #1111 in the system, customer is logged-in, system is ON.

Course of test case:

|   | External Event | Reaction |
|---|----------------|----------|
| 1 | Customer navigates to the ordering book page | e-BookStore shows all books in the catalogue |
| 2 | Customer selects a book #1111 to add to his/her books order | e-BookStore acknowledge the book #1111 addition to the books order |
| 3 | Customer selects a book #1111 to add to his/her books order | e-BookStore increments the number of copies of the book #1111 in the books order |

Success criteria: Only book #1111 is in customer's books order, with amount of 2.

# Use Case 7:

Scenario graph:



Set of scenarios:

| ID | Events | Description |
|----|--------|-------------|
| 1  | 1-2    | Customer selects to view his/her books order |

Abstract Test Cases:

TC1:
Goal: Test the customer View Books Order function of the system.
Scenario Reference: 7
Setup: Create a customer account in the system, create a book #1111 in the system, customer is logged-in, system is ON.
Course of test case:

|   | External Event | Reaction |
|---|---|---|
| 1 | Customer navigates to the ordering book page | e-BookStore shows all books in the catalogue |
| 2 | Customer adds book #1111 to the books order | e-BookStore acknowledge the book #1111 addition to the books order |
| 3 | Customer selects to view his/her books order | e-BookStore shows the books order information |

Success criteria: Information of the book #1111 is shown in customer's books order.

TC2:
Goal: Test the customer View Books Order function of the system.
Scenario Reference: 7
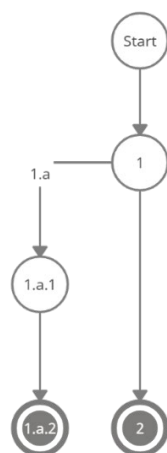Setup: Create a customer account in the system, customer is logged-in, system is ON.
Course of test case:

|   | External Event | Reaction |
|---|---|---|
| 1 | Customer navigates to the ordering book page | e-BookStore shows all books in the catalogue |
| 2 | Customer selects to view his/her books order | e-BookStore shows the books order information |

Success criteria: Nothing is shown in customer's books order.

# Use Case 8:

Scenario graph:

Set of scenarios:

| ID | Events | Description |
|---|---|---|
| 1 | 1-2 | Customer specifies a number of copies for an ordered book |
| 2 | 1-1.a.1-1.a.2 | Customer specifies a number of less or equal to 0 to copies for an ordered book |

Abstract Test Cases:

TC1:
Goal: Test the customer Update Books Order function of the system.
Scenario Reference: 8
Setup: Create a customer account in the system, create one book #1111 in the system, customer is logged-in, system is ON.
Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Customer navigates to the ordering book page | e-BookStore shows all books in the catalogue |
| 2 | Customer adds book #1111 to the books order | e-BookStore acknowledge the book #1111 addition to the books order |
| 3 | Customer set the number of copies for the book #1111 to 5 | e-BookStore updates the number of book #1111 in customer's books order to 5 |

Success criteria: One book #1111 of amount of 5 is shown in customer's books order.

TC2:
Goal: Test the customer Update Books Order function of the system.
Scenario Reference: 8
Setup: Create a customer account in the system, create one book #1111 in the system, customer is logged-in, system is ON.
Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Customer navigates to the ordering book page | e-BookStore shows all books in the catalogue |
| 2 | Customer adds book #1111 to the books order | e-BookStore acknowledge the book #1111 addition to the books order |
| 3 | Customer set the number of copies for the book #1111 to 0 | e-BookStore updates the number of book #1111 in customer's books order to 0 e-BookStore removes the book #1111 from customer's books order |

Success criteria: Nothing is shown in customer's books order.

TC3:

Goal: Test the customer Update Books Order function of the system.

Scenario Reference: 8

Setup: Create a customer account in the system, create one book #1111 in the system, customer is logged-in, system is ON.

Course of test case:

|   | External Event | Reaction |
|---|---|---|
| 1 | Customer navigates to the ordering book page | e-BookStore shows all books in the catalogue |
| 2 | Customer adds book #1111 to the books order | e-BookStore acknowledge the book #1111 addition to the books order |
| 2 | Customer set the number of copies for the book #1111 to -5 | e-BookStore updates the number of book #1111 in customer's books order to 0 <br> e-BookStore removes the book #1111 from customer's books order |

Success criteria: Nothing is shown in customer's books order.

# Use Case 9:

Scenario graph:



Set of scenarios:

| ID | Events | Description |
|---|---|---|
| 1 | 1-2 | Customer select to checkout |

Abstract Test Cases:

TC1:
Goal: Test the customer Check Out function of the system.
Scenario Reference: 9
Setup: Create a customer account in the system, create one book #1111 in the system, set the price to $100, customer is logged-in, system is ON.
Course of test case:

|   | External Event | Reaction |
|---|---|---|
| 1 | Customer navigates to the ordering book page | e-BookStore shows all books in the catalogue |
| 2 | Customer adds book #1111 to the books order | e-BookStore acknowledge the book #1111 addition to the books order |
| 3 | Customer select to checkout | e-BookStore processes the books order and display the price for book #1111 |

Success criteria: The price of $128=$100+$13+$15 of book #1111 is shown.

TC2:
Goal: Test the customer Check Out function of the system.
Scenario Reference: 9
Setup: Create a customer account in the system, customer is logged-in, system is ON.
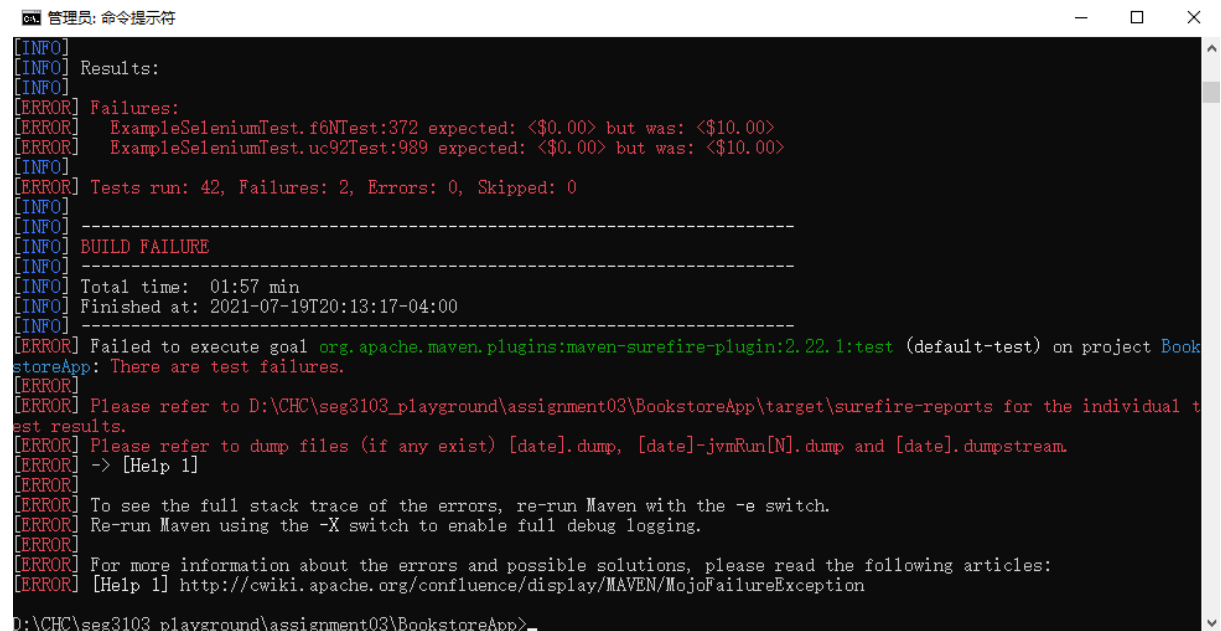Course of test case:

|   | External Event | Reaction |
|---|---|---|
| 1 | Customer navigates to the ordering book page | e-BookStore shows all books in the catalogue |
| 2 | Customer select to checkout | e-BookStore processes the books order and display the price for empty cart |

Success criteria: The price of $0=$0+$0+$0 of empty cart is shown.

# Use Case 10:

Scenario graph:

Set of scenarios:

| ID | Events | Description |
|---|---|---|
| 1 | 1-2 | Customer select a language |

Abstract Test Cases:

TC1:

Goal: Test the User Change Language function of the system.

Scenario Reference: 10

Setup: Create an administrator account in the system, administrator is logged-in, system is ON.

Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Administrator navigates to the language setting page | e-BookStore shows all language supported |
| 2 | Administrator select a language of English | e-BookStore displays information in English |

Success criteria: The information of e-BookStore is in English.

TC2:

Goal: Test the User Change Language function of the system.

Scenario Reference: 10

Setup: Create a customer account in the system, customer is logged-in, system is ON.

Course of test case:

| | External Event | Reaction |
|---|---|---|
| 1 | Customer navigates to the language setting page | e-BookStore shows all language supported |
| 2 | Customer select a language of French | e-BookStore displays information in French |

Success criteria: The information of e-BookStore is in French.

# Q3.

Please check the code and the Demo video in the GitHub. All test cases can be run individually, or run together one by one automatically. It is normal to have several freezes during the test running, because I used "try catch" to check if the cart is empty. Here is the test result I got:



Hope you have a nice day. Thank you for being together with us this semester.

—— Haochu Chen