Scenario 2.0: Borrow Item Limit bug 2

Scenario Description

This scenario tests that the item limit of 2 items is correctly enforced when a user with 0 current loans attempts to borrow more than 2 items in a single session.

Tests that if a patron already has 2 items borrowed, they cannot return and add more in a later session.

Version Control

Version #	Date	Author	Description
0.1	15/10/2022	Ty Saunders	Initial Draft
1.0	15/10/2022	Ty Saunders	Initial Version

Test Scripts

The following scripts will cover this scenario:

2.1 [Attempt to borrow items above the limit – Replicate bug](#)

2.2 Attempt to borrow items above the limit in a later visit

Use Case

- Customer with 0 current loans tries to borrow more than 2 items.

- Customer who has exceeded loan limit returns at a later time to borrow more items.

Test Components / Requirements

Need a customer with 0 loans for script 1.

Need a customer who has borrowed multiple items in 1 session until the loan limit is enforced for script 2.

Bug reproduced if:

Customer is able to exceed the borrowing limit of 2 items.

Script 2.1: Attempt to borrow items above the limit

Script Description

- Customer with 0 current loans tries to borrow more than 2 items.

Testing Objective

This test script covers the following specific testing requirements:

When customer who has reached the limit of 2 items they are stopped from borrowing more.

Setup

A patron with 0 outstanding loans.

Test Data

Patron	PatronId: 1; First Name: John; Last Name: Smith; Email: dotcom; Phone: 1234
Item Id	Type: Book; Title: Yes; Author: No; CallNo: 1
Item Id	Type: Book; Title: Why; Author: Because; CallNo: 2
Item Id	Type: Book; Title: Above; Author: Below; CallNo: 3

Teardown

- Return all items borrowed.

Script Steps

Step #	Test Action	Expected Results	Pass/ Fail	
1	Type B press enter	Borrow Item UI opens ``` Choice : b Borrow Item Use Case UI Swipe patron card (press <enter> to cancel): ```	P	P
2	Type Patron number 1 press enter:	Scan item menu opens ``` Swipe patron card (press <enter> to cancel): 1 Scan Item (<enter> completes): ```	P	P

3	Type item number 1 press enter	Item is added to borrow list
		
		``
		Scan Item (<enter> completes): 1
		Item: 1
		   Type: Book
		   Title: Yes
		   Author: No
		   CallNo: 1
		   State: AVAILABLE
		Scan Item (<enter> completes):
		``
			P	P

4	Type item number 2 press enter	Loan limit reaches should be displayed after 2 items. If it is not displayed, the code is buggy.
		
		``
		Item: 2
		   Type: Book
		   Title: Why
		   Author: Because
		   CallNo: 2
		   State: AVAILABLE
		Loan limit reached
		``
			F	

Script 2.2: Attempt to return later to borrow an item after exceeding limit

Script Description

- Customer who who saw 'loan limit reached' in the GUI returns at a later time to borrow more items.

Testing Requirements

This test script covers the following specific testing requirements:

When customer who saw 'loan limit reached' tries to borrow more items later they are denied.

Setup

A patron starting with zero loans, borrows multiple items in a single borrowing session until they see 'loan limit reached'.

Start with a patron with 0 loans

Borrow items until loan limit is reached is displayed on the GUI, then commit the loans.

Test Data

Patron	PatronId: 1;
	First Name: John;
	Last Name: Smith;
	Email: dotcom;
	Phone: 1234
Book	Type: Book;
	Title: Outside;
	Author: Inside;
	CallNo: 4

Teardown

- Return all items borrowed.

Script Steps

Step #	Test Action	Expected Results	Pass/ Fail	
1	Type B press enter	Borrow Item UI opens ``` Choice : b Borrow Item Use Case UI Swipe patron card (press <enter> to cancel): ```	P	P
2	Type Patron number 1 press enter:	Patron is denied from borrowing. If patron is not denied then bug is reproduced: ``` b Borrow Item Use Case UI Swipe patron card (press <enter> to cancel): 1 Patron cannot borrow at this time Press <any key> to cancel ```	P	P

Run results:

Script 1: Run 1 results
FAILED.

Step 1:

Borrow item1

Step 2:

Borrow item 2, if code is working correctly, item limit reached will be displayed.

Actual result:

```
Item: 2
  Type:   Book
  Title:  Why
  Author: Because
  CallNo: 2
  State:  AVAILABLE
```

Step 3:

Keep borrowing until item limit reached:

Result – 3 items borrowed:

```
Patron:  1
  Name:  John Smith
  Email: dotcom
  Phone: 1234
  Fines Owed :  $0.00
Loan:  1
  Borrower 1 : John Smith
  Item 1 : Book
Yes
  DueDate: 18/10/2022
  State: CURRENT
  Fines: $0.00
Loan:  2
  Borrower 1 : John Smith
  Item 2 : Book
Why
  DueDate: 18/10/2022
  State: CURRENT
  Fines: $0.00
Loan:  3
  Borrower 1 : John Smith
  Item 3 : Book
Above
  DueDate: 18/10/2022
  State: CURRENT
  Fines: $0.00
```

Script 2 - Run 1 results:

FAILED.

Step 1:

Starting with a patron who has exceeded borrow item limit, attempt to borrow an item in a new visit.

Result – An extra item was borrowed bringing the total to 4 items

```
Type:   Book
Title:  Outside
Author: Inside
CallNo: 4
State:  AVAILABLE
Loan limit reached

Final Borrowing List
Item: 4
Type:   Book
Title:  Outside
Author: Inside
CallNo: 4
State:  AVAILABLE

Commit loans? (Y/N): Completed Loan Slip
Loan:   4
Borrower 1 : John Smith
Item 4 : Book
Outside
DueDate: 18/10/2022
State: CURRENT
Fines: $0.00
```

Screenshot of automated tests failing after run 1:

```
-------------------------------------------------------
 T E S T S
-------------------------------------------------------
Running library.Bug2Test
Script 2.1 - Loans expected: 2 Loans actual: 3
Script 2.2 - Loans expected: 2 Loans actual: 4
Tests run: 2, Failures: 2, Errors: 0, Skipped: 0, Time elapsed:
testBug21  Time elapsed: 0.981 s  <<< FAILURE!
org.opentest4j.AssertionFailedError: expected: <2> but was: <3>
        at library.Bug2Test.testBug21(Bug2Test.java:105)

testBug22  Time elapsed: 0.008 s  <<< FAILURE!
org.opentest4j.AssertionFailedError: expected: <2> but was: <4>
        at library.Bug2Test.testBug22(Bug2Test.java:144)
```

Run 2 results –

Script 2.1 – Run 2 result:

PASSED.

Step 1

Borrow Item 1 – Pass

Step 2

Borrow item 2 – Pass – loan limit is reached.

```
Item: 2
   Type:   Book
   Title:  Why
   Author: Because
   CallNo: 2
   State:  AVAILABLE
Loan limit reached
```

Script 2.2 - Run 2 result:

PASSED.

Step 1:

Starting with a patron who has exceeded borrow item limit, attempt to borrow an item in a new visit.

Result – Pass, patron not able to borrow:

```
Patron cannot borrow at this time
```

Both scripts - Automated test results after fix:

```
--------------------------------------------------------
 T E S T S
--------------------------------------------------------
Running library.Bug2Test
Script 2.1 - Third item refused - Borrow limit
Script 2.1 - Loans, expected: 2 Loans actual: 2
Script 2.2 - Third item refused - Borrow limit
Script 2.2 - Borrow extra item rejected
Script 2.2 - Loans, expected: 2 Loans actual: 2
Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed:

Results:

Tests run: 2, Failures: 0, Errors: 0, Skipped: 0


----------------------------------------------------------------
BUILD SUCCESS
----------------------------------------------------------------
Total time:  3.267 s
Finished at: 2022-10-16T21:38:58+11:00
----------------------------------------------------------------
'cmd' is not recognized as an internal or external command,
operable program or batch file.
```

Test Execution

Date/Time	Tester	Test ID	Test Phase	Status
15/10/2022	Ty Saunders	Ty	System Cycle 1	Failed
16/10/2022	Ty Saunders	Ty	Post bug fix	Passed