

Assignment 2

Task 6

Author Details

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Bug Report 1

Description: Infinite Loop in `_return_item` Function

The first bug happens in the `_return_item` function in `bat_ui.py`, where no condition is handled for the scenario when a patron has no active loans, thus having the system prompts the user repeatedly for an item ID that wishes to return.

Steps to reproduce:

1. Launch the BAT system.
2. Choose the option to return an item (Option 2).
3. Enter a valid name and age that returns a patron with no active loans.
4. Attempt to input an item ID.

Expected behaviour:

Ideally, the system should notify the user that the patron has no active loans and return to the main menu, or at least provide another option for proceeding and not staying in the infinite loop.

Actual behaviour:

In the actual fact, the system ends up in a repetitive loop that keep on asking for an item ID despite the patron does not have any loans in hand, creating an endless cycle that traps the user in the return process unnecessarily.

Bug Report 2

Description: Inconsistency in Loan Period Validation

This second bug pertains to an inconsistency in the `can_borrow_book` function in `business_logic.py`, specifically regarding the loan period validation on line 71 of the code. While the documentation for the function mentions a maximum loan period of 56 days, the code on line 56 rejects this value, leading to confusion and contradiction.

Steps to reproduce:

1. Launch the BAT system.
2. Choose the option to loan an item (Option 1).
3. Enter a valid item ID for a "Book" item.
4. Enter a valid patron name and age that can borrow the "Book" item
5. Enter 56 days when prompted for the loan duration.

Expected behaviour:

Ideally, the function should allow the patron to borrow the book for a loan period of 56 days, as stated in the documentation.

Actual behaviour:

In the actual fact, the system denies loan with a 56-day long period, contrary to the function's documentation.

Bug Report 3

Description: Incorrect Attribute Update in process_return Function

The third bug happens in the process_return function in business_logic.py, where the item's on_loan attribute is not properly decremented when an item is returned. This is due to the issue in line 202 of the code, where an incorrect operation of "-" was used instead of the decrement assignment of "-=", thus resulting the loan is removed from the patron and the item's loan count not updated in the system.

Steps to reproduce:

1. Launch the BAT system.
2. Choose the option to return an item (Option 2).
3. Enter a valid patron details for someone with an active loan.
4. Enter a valid item ID for an item currently on loan for that patron.

Expected behaviour:

Ideally, the system should remove the loan from the patron when it's returned and decrement the item's on_loan value by 1.

Actual behaviour:

In the actual fact, despite the loan is removed from the patron, the item's on_loan value remains unchanged, incorrectly suggesting that it still has the same number of active loans.