

## Plant UML image was not generated due to server error - use planttext.com

```
@startuml
title Book checkout sequence diagram

actor Member
participant Librarian
participant BookItem
participant BookReservation
participant BookLending

Member -> Librarian: Request to checkout book
activate Librarian
Librarian -> BookItem: Check if book is available
activate BookItem
BookItem -> Librarian: Return availability status
deactivate BookItem
alt Book is available
    Librarian -> Member: Book is available, proceed to checkout
    activate Member
    Member -> BookReservation: Check if there are pending reservations
    activate BookReservation
    BookReservation -> Member: Return reservation status
    deactivate BookReservation
    if No pending reservations
        Librarian -> BookLending: Lend book to member
        activate BookLending
        BookLending -> BookItem: Update book status to loaned
        activate BookItem
        BookItem -> BookLending: Update lending details
        Member -> Librarian: Confirm checkout
        deactivate BookLending
        deactivate BookItem
        Librarian -> Member: Checkout successful
        deactivate Member
    else
        Librarian -> Member: Book is reserved by another member, cannot checkout
        deactivate Member
    end
end
else
    Librarian -> Member: Book is not available
    deactivate Member
end
@enduml
```

## Logs:

```
2025-01-25 16:27:59,457 - root - INFO - class: Member, module: __init__, file:
member.py, log: Member object created., line: 19
2025-01-25 16:27:59,458 - root - INFO - class: Librarian, module:
code.library_administration.librarian, file: librarian.py, log: Book item added
successfully., line: 21
2025-01-25 16:27:59,459 - root - INFO - class: Librarian, module:
code.library_administration.librarian, file: librarian.py, log: Book item added
successfully., line: 21
2025-01-25 16:27:59,459 - root - INFO - class: Member, module:
get_total_books_checkedout, file: member.py, log: Fetching total books checked out.,
line: 22
2025-01-25 16:27:59,459 - root - INFO - class: BookReservation, module:
fetch_reservation_details, file: book_reservation.py, log: Fetching reservation
details., line: 14
2025-01-25 16:27:59,459 - root - INFO - class: BookReservation, module:
fetch_reservation_details, file: book_reservation.py, log: No reservation details
found., line: 24
2025-01-25 16:27:59,459 - root - INFO - class: Member, module: checkout_book_item,
file: member.py, log: Failed to checkout book item., line: 71
2025-01-25 16:27:59,459 - root - INFO - class: Member, module:
get_total_books_checkedout, file: member.py, log: Fetching total books checked out,
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get_total_books_checkedout, file: member.py, log: Fetching total books checked out.,
line: 22
2025-01-25 16:27:59,459 - root - INFO - class: BookReservation, module:
fetch_reservation_details, file: book_reservation.py, log: Fetching reservation
details., line: 14
2025-01-25 16:27:59,459 - root - INFO - class: BookReservation, module:
fetch_reservation_details, file: book_reservation.py, log: No reservation details
found., line: 24
2025-01-25 16:27:59,459 - root - INFO - class: BookLending, module:
code.book_management.book_lending, file: book_lending.py, log: Lending a book, line:
17
2025-01-25 16:27:59,459 - root - INFO - class: BookLending, module:
code.book_management.book_lending, file: book_lending.py, log: Checking if the book is
already lent out, line: 21
2025-01-25 16:27:59,460 - root - INFO - class: BookLending, module:
code.book_management.book_lending, file: book_lending.py, log: Adding a new lending
record, line: 28
2025-01-25 16:27:59,460 - root - INFO - class: BookLending, module:
code.book_management.book_lending, file: book_lending.py, log: Book lent successfully,
line: 37
2025-01-25 16:27:59,460 - root - INFO - class: Member, module:
increment_total_books_checkedout, file: member.py, log: Incremented total books
checked out., line: 38
2025-01-25 16:27:59,460 - root - INFO - class: Member, module: checkout_book_item,
file: member.py, log: Book item checked out successfully., line: 75
2025-01-25 16:27:59,460 - root - INFO - class: Member, module: reserve_book_item,
file: member.py, log: Book item reserved successfully., line: 34
2025-01-25 16:27:59,460 - root - INFO - class: Member, module: __init__, file:
member.py, log: Member object created., line: 19
2025-01-25 16:27:59,461 - root - INFO - class: Member, module: reserve_book_item,
file: member.py, log: Book item reserved successfully., line: 34
2025-01-25 16:27:59,461 - root - INFO - class: Member, module:
get_total_books_checkedout, file: member.py, log: Fetching total books checked out.,
line: 22
2025-01-25 16:27:59,461 - root - INFO - class: BookReservation, module:
fetch_reservation_details, file: book_reservation.py, log: Fetching reservation
details., line: 14
2025-01-25 16:27:59,461 - root - INFO - class: BookReservation, module:
fetch_reservation_details, file: book_reservation.py, log: No reservation details
found., line: 24
2025-01-25 16:27:59,461 - root - INFO - class: BookLending, module:
code.book_management.book_lending, file: book_lending.py, log: Lending a book, line:
17
2025-01-25 16:27:59,461 - root - INFO - class: BookLending, module:
code.book_management.book_lending, file: book_lending.py, log: Checking if the book is
already lent out, line: 21
2025-01-25 16:27:59,461 - root - INFO - class: BookLending, module:
code.book_management.book_lending, file: book_lending.py, log: Adding a new lending
record, line: 28
2025-01-25 16:27:59,461 - root - INFO - class: BookLending, module:
code.book_management.book_lending, file: book_lending.py, log: Book lent successfully,
line: 37
2025-01-25 16:27:59,461 - root - INFO - class: Member, module:
increment_total_books_checkedout, file: member.py, log: Incremented total books
checked out., line: 38
2025-01-25 16:27:59,461 - root - INFO - class: Member, module: checkout_book_item,
file: member.py, log: Book item checked out successfully., line: 75
2025-01-25 16:27:59,461 - root - INFO - class: Member, module:
increment_total_books_checkedout, file: member.py, log: Incremented total books
checked out., line: 38
2025-01-25 16:27:59,461 - root - INFO - class: Member, module:
increment_total_books_checkedout, file: member.py, log: Incremented total books
checked out., line: 38
2025-01-25 16:27:59,461 - root - INFO - class: Member, module:
increment_total_books_checkedout, file: member.py, log: Incremented total books
checked out., line: 38
2025-01-25 16:27:59,461 - root - INFO - class: Member, module:
increment_total_books_checkedout, file: member.py, log: Incremented total books
checked out., line: 38
2025-01-25 16:27:59,461 - root - INFO - class: Member, module:
increment_total_books_checkedout, file: member.py, log: Incremented total books
checked out., line: 38
2025-01-25 16:27:59,462 - root - INFO - class: Member, module:
increment_total_books_checkedout, file: member.py, log: Incremented total books
checked out., line: 38
2025-01-25 16:27:59,462 - root - INFO - class: Member, module:
increment_total_books_checkedout, file: member.py, log: Incremented total books
checked out., line: 38
2025-01-25 16:27:59,462 - root - INFO - class: Member, module:
increment_total_books_checkedout, file: member.py, log: Incremented total books
checked out., line: 38
2025-01-25 16:27:59,462 - root - INFO - class: Member, module:
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get_total_books_checkedout, file: member.py, log: Fetching total books checked out.,
line: 22
2025-01-25 16:27:59,462 - root - INFO - class: Member, module: checkout_book_item,
file: member.py, log: User has already checked out the maximum number of books., line:
60
2025-01-25 16:27:59,462 - root - INFO - class: Member, module: reserve_book_item,
file: member.py, log: Book item reserved successfully., line: 34
2025-01-25 16:27:59,462 - root - INFO - class: BookLending, module:
code.book_management.book_lending, file: book_lending.py, log: Fetching lending
details, line: 42
2025-01-25 16:27:59,462 - root - INFO - class: BookLending, module:
code.book_management.book_lending, file: book_lending.py, log: Returning fetched
lending details, line: 49
2025-01-25 16:27:59,462 - root - INFO - class: Member, module: renew_book_item, file:
member.py, log: Due date is 2025-02-04, line: 81
2025-01-25 16:27:59,465 - root - INFO - class: BookReservation, module:
fetch_reservation_details, file: book_reservation.py, log: Fetching reservation
details., line: 14
2025-01-25 16:27:59,466 - root - INFO - class: BookReservation, module:
fetch_reservation_details, file: book_reservation.py, log: No reservation details
found., line: 24
2025-01-25 16:27:59,466 - root - INFO - class: Member, module: return_book_item, file:
member.py, log: Book item returned successfully., line: 103
2025-01-25 16:27:59,466 - root - INFO - class: BookLending, module:
code.book_management.book_lending, file: book_lending.py, log: Fetching lending
details, line: 42
2025-01-25 16:27:59,466 - root - INFO - class: BookLending, module:
code.book_management.book_lending, file: book_lending.py, log: Returning fetched
lending details, line: 49
2025-01-25 16:27:59,466 - root - INFO - class: Fine, module:
code.library_administration.fine, file: fine.py, log: Initializing Fine instance,
line: 5
2025-01-25 16:27:59,466 - root - INFO - class: Fine, module:
code.library_administration.fine, file: fine.py, log: Collecting fine, line: 11
2025-01-25 16:27:59,466 - root - INFO - class: Fine, module:
code.library_administration.fine, file: fine.py, log: Fine collected: $0 for 0 overdue
days, line: 14
2025-01-25 16:27:59,466 - root - INFO - class: Catalog, module:
code.book_management.catalog, file: catalog.py, log: Initializing Catalog instance,
line: 7
```

**This is an LLM generated report - please be aware of hallucinations  
(Esp if you provide an incorrect prompt/insufficient data)**