Constraint(a)

User
-name: string - password: String -email: String
+ login(): void + logout(): voidrams) - operation3()

context NormalUser::login() pre: self.valid = True

NormalUser
- user_id: Int - phone: Int address: String valid: Boolean
+ register(): void + searchBooks(): Book] + sendRequestToBorrowBook(book: Book): void + showBorrowedBooks(): Book[]

Constraint(b)

context NormalUser::sendRequestToBorrowBook(book: Book) pre: book.avl_copies > 0

NormalUser
- user_id: Int - phone: Int address: String valid: Boolean
+ register(): void + searchBooks(): Book] + sendRequestToBorrowBook(book: Book): void + showBorrowedBooks(): Book[]

BorrowedBook
- borrow_id: Int - isbn: Int user_id: Int status: Int
+ showBorrowed Books(): Book]

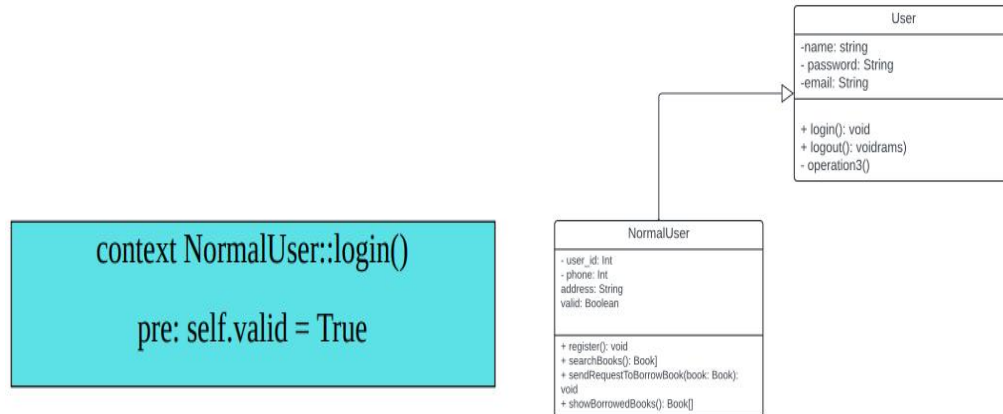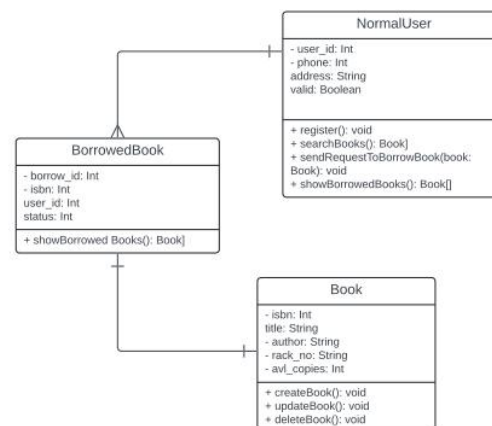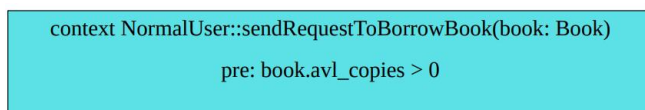| Book |
| --- |
| - isbn: Int
title: String
- author: String
- rack_no: String
- avl_copies: Int |
| + createBook(): void
+ updateBook(): void
+ deleteBook(): void |

Constraint(c)

context BorrowedBook

inv: status >= 0 and status <= 2

BorrowedBook

- borrow_id: Int
- isbn: Int
user_id: Int
status: Int

+ showBorrowed Books(): Book]

Constraint(d)
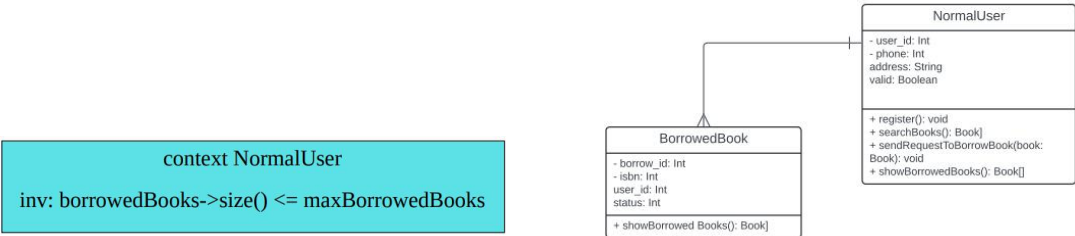
context Book

inv: avl_copies <= total_copies

Book

- isbn: Int
title: String
- author: String
- rack_no: String
- avl_copies: Int

+ createBook(): void
+ updateBook(): void
+ deleteBook(): void

Constraint(e)

context BorrowedBooks::showBorrowedBooks()

pre: self.status = 1

BorrowedBook

- borrow_id: Int
- isbn: Int
user_id: Int
status: Int

+ showBorrowed Books(): Book]

Constraint(f)

NormalUser

- user_id: Int
- phone: Int
address: String
valid: Boolean

+ register(): void
+ searchBooks(): Book]
+ sendRequestToBorrowBook(book: Book): void
+ showBorrowedBooks(): Book[]

BorrowedBook

- borrow_id: Int
- isbn: Int
user_id: Int
status: Int

+ showBorrowed Books(): Book]

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context NormalUser

inv: borrowedBooks->size() <= maxBorrowedBooks

Constraint(g)

context NormalUser::sendRequestToBorrow(book: Book)

pre: self.valid = True

NormalUser

- user_id: Int
- phone: Int
address: String
valid: Boolean

+ register(): void
+ searchBooks(): Book]
+ sendRequestToBorrowBook(book: Book): void
+ showBorrowedBooks(): Book[]