#### **Attributes** Book BorrowedBook User **Attributes** Attributes - id: int [auto generated] - userId: int - id: int - bookId: int - name: string borrowDate: string - returnDate: string **Operations** + getId(): int **Operations** + getName(): string + setName(name: string): void + getUserId(): int + getName(): string + toString(): string + getBookId(): int + isEqual(user: User): bool + getQuantity(): int + getBorrowDate(): string + getBorrowed(): int + serialize(): vector<string> <<override>> + getReturnDate(): string + getAvalible(): int + deserialize(tokens: vector<string>): void <<override>> + setUserId(userId: int): void + setName(name: string): void - getSeq(): int <<static>> + setBookId(bookId: int): void + setQuantity(quantity: int): void + setBorrowDate(borrowDate: string): void + setBorrowed(borrowed: int): void + setReturnDate(returnDate: string): void + toString(): string + toString(): string + isEqual(book: Book): bool + isEqual(borrowedBook: BorrowedBook): bool + serialize(): vector<string> <<override>> + serialize(): vector<string> <<override>> + deserialize(tokens: vector<string>): void <<override>> + deserialize(tokens: vector<string>): void <<override>> - getSeq(): int <<static>> BorrowedBookRepository BookRepository UserRepository **Attributes** Attributes - borrowedBooks: vector<BorrowedBook> - books: vector<Book> - users: vector<User> fileHeaderTokens: vector<string> fileHeaderTokens: vector<string> fileHeaderTokens: vector<string> **Operations Operations** + addUser(user: User): void + borrowBook(borrowedBook: BorrowedBook): void + addBook(book: Book): void + getUserById(userId: int): User + borrowBook(bookId: int): void + returnBook(userId: int, bookId: int): void + getBorrowedBooks(): vector<BorrowedBook> + returnBook(bookId: int): void + getUsers(): vector<User> - findUserIndexById(userId: int): int + getBooks(): vector<Book> + getBorrowedBooksByBookId(bookId: int): vector<BorrowedBook> + getBooksByNamePrefix(namePrefix: string): vector<Book> - loadUsers(): void - loadBorrowedBooks(): void - saveUsers(): void - findBookIndexById(bookId: int): int - saveBorrowedBooks(): void - loadBooks(): void - saveBooks(): void SystemActionHandler Attributes bookRepo: BookRepository SystemMenu userRepository: UserRepository borrowedBookRepository: BorrowedBookRepository LibrarySystem **Operations** Attributes + handleAction(actionCode: int): void + mainMenu(): int <<static>> - systemActionHandler: SystemActionHandler

- searchBooksByPrefixName(): void

- printBooksSortedById(): void

- addUser(): void

- borrowBook(): void

- returnBook(): void

- printUsers(): void

- exit(): void

- printBooksSortedByName(): void

- printWhoBorrowedBookByName(): void

**Operations** 

+ run(): void

**Attributes** 

- name: int

**Operations** 

+ getId(): int

Attributes

**Operations** 

Attributes

**Operations** 

+ addBookMenu(): tuple<string,int, int> <<static>>

+ searchBooksByPrefixNameMenu(): string <<static>>

+ borrowBookMenu(): tuple<int, int, string, string>

+ printWhoBorrowedBookByNameMenu(): string

+ addUserMenu(): tuple<string>

+ returnBookMenu(): tuple<int, int>

- quantity: int

- borrowed: int

# StringUtility

### Attributes

#### **Operations**

#### + split(buffer: string, delimiter: string): vector<string> <<static>>

+ join(tokens: vector<string>, delimiter: string): std::string <<static>>

#### FileHandler

#### Attributes

## **Operations**

+ readFromFile(filepath: string, hasHeader: bool): vector<vector<string>> <<static>>

- writeToFile(filepath: string, vector<string> fileheader, vector<vector<string>> lines): void <<static>>