Enumerations and Data Types

<<enumeration>> BookFormat
- Hardcover
- Paperback
- Audiobook
- Ebook
- Newspaper
- Magazine
- Journal

<<enumeration>> BookStatus
- Available
- Reserved
- Loaned
- Lost

<<enumeration>> ReservationStatus
- Waiting
- Pending
- Completed
- Canceled
- None

<<enumeration>> AccountStatus
- Active
- Closed
- Canceled
- Blacklisted
- None

<<dataType>> Address
- streetAddress: string
- city: string
- state: string
- zipcode: string
- country: string

<<dataType>> Person
- name: string
- address: Address
- email: string
- phone: string

Author
- name: string
- description: string
- getaName(): string

Library
- name: string
- address: Address
- getAddress(): Address

Librarian
- addBookItem(): bool
- blockMember(): bool
- unblockMember(): bool

Member
- dateOfMembership: date
- totalBooksCheckedout: int
- getTotalCheckedoutBooks(): int

Book
- ISBN: string
- title: string
- subject: string
- publisher: string
- language: string
- numberOfPages: int
- getTitle(): string

BookItem
- barcode: string
- isReferenceOnly: bool
- borrowed: date
- dueDate: date
- price: double
- format: BookFormat
- status: BookStatus
- dateOfPurchase: date
- publicationDate: date
- checkout(): bool

Account
- id: string
- password: string
- status: AccountStatus
- person: Person
- resetPassword(): bool

LibraryCard
- cardNumber: string
- barcode: string
- issuedAt: date
- active: bool
- isActive(): bool

Rack
- number: int
- locationIdentifier: string

Catalog
- creationDate: date
- totalBooks: int
- bookTitles: Map<string, list>
- bookAuthors: Map<string, list>
- bookSubjects: Map<string, list>
- bookPublicationDates: Map<date, list>
- updateCatalog(): bool

<<interface>> Search
- searchByTitle(string)
- searchByAuthor(string)
- searchBySubject(string)
- searchByPubDate(datetime)

BookReservation
- creationDate: date
- status: ReservationStatus
- getStatus(): ReservationStatus
- fetchReservationDetails(): BookReservation

BookLending
- creationDate: date
- dueDate: date
- returnDate: date
- getReturnDate(): date

BarcodeReader
- id: string
- registeredAt: date
- active: bool
- isActive(): bool

Notification
- notificationId: int
- createdOn: date
- content: string
- sendNotification(): bool

PostalNotification
- address: Address

EmailNotification
- email: string

Fine
- amount: double
- getAmount(): double

FineTransaction
- creationDate: date
- amount: double
- initiateTransaction(): bool

CreditCardTransaction
- nameOnCard: string

CheckTransaction
- bankName: string
- checkNumber: string

CashTransaction
- cashTendered: double

Relationships:
- Author * — * Book
- Library 1 (diamond) BookItem *
- Librarian — add / update → BookItem
- Librarian Extends → Account
- Member Extends → Account
- Book ← Extends — BookItem
- Account borrows → BookItem 0..5
- Account reserves → BookItem 0..5
- Account 1 (diamond) — 1 LibraryCard
- Account makes 1 → 0..5 BookReservation
- BookItem placed at ◄ Rack 1 — *
- Rack records ▲ Book
- Catalog ·····▷ Search
- Account ·····▷ <<uses>> Search
- BookReservation against 1 → BookItem 1
- BookReservation * — 1 BookLending *
- BookLending 1 — 0..1 Fine
- LibraryCard scans ▲ BarcodeReader
- Notification * — 1 BookLending
- Notification ▷ PostalNotification (Extends)
- Notification ▷ EmailNotification (Extends)
- Fine 1 (diamond) — 1 FineTransaction
- FineTransaction ◁ CreditCardTransaction (Extends)
- FineTransaction ◁ CheckTransaction (Extends)
- FineTransaction ◁ CashTransaction (Extends)