**CLASS DIAGRAM**

**LIBRARY**

* **Attributes**:
  + book: List<Book>
  + author: List<Author>
  + patrons: List<Patron>
* **Methods**:
  + +searchBooksByTitle(title: String): List<Book>
  + +searchBooksByAuthor(authorName: String): List<Book>
  + +searchBookByISBN(ISBN: String): Book
  + +borrowBook(book: Book, patron: Patron)
  + +returnBook(book: Book, patron: Patron)
  + +addBook(book: Book)
  + +removeBook(book: Book)
  + +addAuthor(author: Author)
  + +removeAuthor(author: Author)
  + +addPatron(patron: Patron)
  + +removePatron(patron: Patron)
  + +searchPatronByName(name: String): Patron

**BOOK**

* **Attributes**:
  + title: String
  + author: Author
  + ISBN: String
  + publisher: String
  + numCopies: Int
  + status: Status
* **Methods**:
  + +getTitle(): String
  + +getAuthor(): Author
  + +getISBN(): String
  + +getPublisher(): String
  + +getNumCopies(): Int
  + +getStatus(): Status
  + +setStatus(status: Status)
  + +decrementCopies()
  + +incrementCopies()

**AUTHOR**

* **Attributes**:
  + name: String
  + birthdate: String
* **Methods**:
  + +getAuthorName(): String
  + +getBirthdate(): String

**PATRON**

* **Attributes**:
  + name: String
  + address: String
  + phoneNumber: String
  + borrowedBooks: List<Book>
  + fines: double
* **Methods**:
  + +getName(): String
  + +getAddress(): String
  + +getPhoneNumber(): String
  + +getBorrowedBooks(): List<Book>
  + +calculateFines(): double
  + +addBorrowedBook(book: Book)
  + +removeBorrowedBook(book: Book)
  + +addFines(amount: double)

**STATUS**

* **Enum Values**:
  + AVAILABLE
  + CHECKED\_OUT
  + OVERDUE