UML Class Diagram: Library System

User — accesses ► — **LibrarySystem** — manages ►

User (1) (0..*) (1) (1)
- -username: String
- -password: String
- -borrowedBooks: List<PhysicalCopy>

- +getUsername(): String
- +getPassword(): String
- +searchBook(searchTerm: String): Book
- +borrowBook(physicalCopy: PhysicalCopy): void
- +returnBook(physicalCopy: PhysicalCopy): void
- +downloadPDF(onlinePDF: OnlinePDF): void

LibrarySystem
- +Books:<List>Book
- -Users:<List>User

- +addBook(book: Book): void
- +removeBook(book: Book): void
- +addUser(user: User): void
- +removeUser(user: User): void

◄ loaned to (1) (0..1)

◄ logs (0..*) (1) 1..*

PhysicalCopy
- +librarySignature: String
- +Available: Boolean
- +returnDate: Date

- +getLibrarySignature(): String
- +setLibrarySignature(libSig: String): void
- +isAvailable(): Boolean
- +setAvailable(available: Boolean): void
- +getReturnDate(): Date
- +setReturnDate(returnDate :Date): void
- +librarySignatureToLocation(): String

Book
- +title: String
- +author: String
- +isbn: String
- +edition: String
- +volume: String
- +publisher: String
- +yearOfPublication: int
- +physicalCopies: List<PhysicalCopy>
- +onlinePDF: String

- +getTitle(): String
- +setTitle(title: String): void
- +getAuthor(): String
- +setAuthor(author: String): void
- +getISBN(): String
- +setISBN(isbn: String): void
- +getEdition(): String
- +setEdition(edition: String): void
- +getVolume(): String
- +setVolume(volume: String): void
- +getYearOfPublication(): int
- +setYearOfPublication(yop: int): void
- +getPhysicalCopies(): List<PhysicalCopy>
- +getOnlinePDF: OnlinePDF

◄ downloaded by (0..1) (0..1)

OnlinePDF
- +librarySignature: String
- +hyperlink: String

- +getLibrarySignature(): String
- +setLibrarySignature(libSig: String): void
- +getHyperlink(): String
- +setHyperlink(hyperlink: String): void