

## MODULE 5 – I/O STREAMS

### SPOT

#### 4. Library Management System

**Scenario:**

A library needs a digital record system where book details (**Book ID, Title, Author, and Availability**) are stored in a file. The system should allow:

- Adding new books.
- Viewing the list of all books.
- Searching for a book by title.
- Checking if a book is available.

**Task:**

- Use **BufferedWriter** and **BufferedReader** to efficiently handle large files.
- Implement error handling for missing or corrupted files.

**Challenge Extension:**

- Convert the system to use **RandomAccessFile** for fast book lookup and updates.

#### 5. Chat Logger for a Messaging Application

**Scenario:**

A messaging app wants to log chat conversations between users. The system must:

- Record each message with a timestamp in a file.
- Display the chat history when requested.
- Support multiple users in the chat.

**Task:**

- Use **PrintWriter** for logging text messages.
- Use **FileReader** and **BufferedReader** to retrieve chat history.

**Challenge Extension:**

- Implement a binary log using **DataOutputStream** and **DataInputStream** to make chat storage more efficient.