

## **SECTION A**

### **Three pieces of data to store for each book:**

- Book I.D (Unique identifiers)
- Book Title and Author
- Book Availability

### **How to prevent the same book from being borrowed twice:**

- Use of database Transactions to lock the row until operation finishes
- When a user tries to borrow a book check availability in the database before updating

### **Scaling to 10,000 books and 1,000 users — what needs to change:**

- Caching for popular queries
- Search filter for large lists
- Database indexing on frequently queried fields

### **Store book info and borrowing record together or separately — why?**

-Separate tables

Reason:

This relational model prevents data redundancy and improves performance.