

## MongoDB Design: Library Management System

```
// Create Database
use LibraryDB;

// Create Books Collection (Insert Sample Data)
db.books.insertMany([
  {
    title: "Introduction to Databases",
    author: "John Smith",
    year_published: 2015,
    available_copies: 3
  },
  {
    title: "Learning MySQL",
    author: "Anna Brown",
    year_published: 2018,
    available_copies: 2
  },
  {
    title: "Advanced PHP Programming",
    author: "David White",
    year_published: 2020,
    available_copies: 4
  }
]);

// Create Members Collection (Insert Sample Data)
db.members.insertMany([
  {
    name: "Alice Johnson",
    email: "alice@example.com",
    phone: "233501234567"
  },
  {
    name: "Bob Anderson",
    email: "bob@example.com",
    phone: "233509876543"
  },
  {
    name: "Cynthia Lee",
    email: "cynthia@example.com",
    phone: "233502345678"
  }
]);

// Create BorrowRecords Collection (Insert Sample Data)
```

```
db.borrowRecords.insertMany([
  {
    book_id: ObjectId("ID_OF_INTRODUCTION_TO_DATABASES"), // replace
    member_id: ObjectId("ID_OF_ALICE"), // replace with actual ObjectId from
    borrow_date: new Date("2025-08-01"),
    return_date: new Date("2025-08-15")
  },
  {
    book_id: ObjectId("ID_OF_LEARNING_MYSQL"),
    member_id: ObjectId("ID_OF_BOB"),
    borrow_date: new Date("2025-08-05"),
    return_date: null // not yet returned
  },
  {
    book_id: ObjectId("ID_OF_ADVANCED_PHP_PROGRAMMING"),
    member_id: ObjectId("ID_OF_CYNTHIA"),
    borrow_date: new Date("2025-08-10"),
    return_date: new Date("2025-08-20")
  }
]);
```