

Relational Databases & Management

1. Assignment – SQL Queries and Operations

Task: Advanced Library Management System (LMS)

Description: Design and manage a Library Management System using MySQL. The LMS will track books, members, and borrow transactions.

Task 1: Create four tables in MySQL:

- **Books** (BookID, Title, Author, Category, PublicationYear, CopiesAvailable)
- **Members** (MemberID, FirstName, LastName, Email, JoinDate)
- **BorrowTransactions** (TransactionID, BookID, MemberID, BorrowDate, ReturnDate)
- **Fines** (FineID, TransactionID, FineAmount, PaidStatus)

Task 2: Inserting Data

- Insert at least 15 books, 10 members, and 20 borrow transactions into the tables.
- Insert at least 5 fines, some marked as "paid" and some as "unpaid."

Task 3: Write a query to list all the books borrowed in the last 30 days, along with the members who borrowed them.

Task 4: Write a query that shows the total number of books borrowed by each member, grouped by member name.

Task 5: Write a query that retrieves the details of the customers who placed the highest number of orders.

Task 6: Use a subquery to find products whose price is higher than the average price of all products.

Allocated Days: 3

Task 1, Task 2 – 1 Marks Each

Task 3 to Task 6: 2 Marks each