SQL Project - Aggregate Functions using Library Database

Objective:

Use aggregate functions and grouping to summarize data using a Library Database.

Tools & Deliverables:

Tools: DB Browser for SQLite / MySQL Workbench

Deliverables: SQL queries using SUM, COUNT, AVG, GROUP BY

Hints / Mini Guide:

1. Apply aggregate functions on numeric columns.

2. Use GROUP BY to categorize results.

3. Filter groups using HAVING clause.

SQL Example Queries (Library Database):

```
-- Total number of books borrowed by each member
SELECT member_id, COUNT(borrow_id) AS total_borrowed
FROM Borrow
GROUP BY member_id;

-- Average number of books borrowed per member
SELECT member_id, AVG(book_id) AS avg_books
FROM Borrow
GROUP BY member_id;

-- Total books borrowed per category
SELECT B.category_id, COUNT(*) AS total_borrowed
FROM Borrow BR
JOIN Books B ON BR.book_id = B.book_id
GROUP BY B.category_id;

-- Members who borrowed more than 3 books
SELECT member_id, COUNT(borrow_id) AS total_borrowed
FROM Borrow
GROUP BY member_id
HAVING COUNT(borrow_id) > 3;
```

Outcome:

Successfully applied aggregate functions like COUNT and AVG, along with GROUP BY and HAVING, to analyze data in a Library Database.