Library Management System — Homework Assignment - 2

EASY LEVEL (20 Questions)

1. List all book titles and their corresponding categories.
2. Display all authors who have written more than one book.
3. Show all publishers located in “Chennai”.
4. List all students who have borrowed any book.
5. Display all books published after the year 2020.
6. List all unique book categories available in the library.
7. Show all books that have more than 300 pages.
8. Display all faculty members who have borrowed books.
9. List all books whose titles start with “Data”.
10. Show all authors from “India”.
11. List all publishers and the number of books they have published.
12. Display all students who have not borrowed any books yet.
13. Show all books available under the “Computer Science” category.
14. List the first 5 books added to the library (based on book_id).
15. Show all authors and the books they have written.
16. Display all students along with their corresponding addresses.
17. List all categories in alphabetical order.
18. Show all books arranged by published year (newest first).
19. Display books whose title contains the word “Python”.
20. Show all students with admission years after 2021.

MEDIUM LEVEL (20 Questions)

1. Find the total number of books in each category.
2. Display the number of books published by each publisher.
3. Show all students and the total number of books they have borrowed.
4. List all authors and the total number of categories they have written for.
5. Find publishers who have published more than 3 books.
6. Display category names with an average number of pages for each.
7. Show all students who have borrowed books in the current month.
8. List the top 3 most borrowed books.
9. Find all books that have never been borrowed.
10. Display the number of books borrowed by faculty and students separately.
11. Show the most recently borrowed book details.
12. Display students who have borrowed books written by “James Gosling”.
13. Show all books borrowed between two specific dates.
14. Find the author who has the maximum number of books published.
15. List each category and the number of distinct authors under it.
16. Find publishers that published books before 2015.
17. Display each book and the name of the student who last borrowed it.
18. Show total fines collected per month (if fine table exists).
19. List each author along with their oldest published book.
20. Find students whose borrow count is above the average borrow count of all students.

HARD LEVEL (15 Challenges)

1. Find the students who have borrowed **all books** written by a particular author.
2. Display the top 2 most active borrowers (students/faculty) per category.
3. Find the category with the **maximum total borrowed count**.
4. List authors who have books in **all categories**.
5. Find the **publisher** whose books have been borrowed the most.
6. Display each student's **most recently borrowed book**.
7. List the **most popular author** in each category (based on borrow frequency).
8. Show the **running total of borrow count** by year.
9. Rank each book based on total borrow frequency.
10. Find books that were **never borrowed in the last 12 months**.
11. List students who borrowed books published before their year of admission.
12. Display **average borrow duration** per category using nested subqueries.
13. Show **rank of publishers** based on total number of books published.
14. Display each author with the **difference** between their total books and the library average.
15. Find students who have borrowed more books than their department's average.

DATE FUNCTION EXTENSION (Bonus 5 Questions)

1. Display students who borrowed books in the current week.
2. Show all books borrowed in the same month as their published month.
3. List authors who have published books in the last 5 years.
4. Display each faculty's total borrow duration in days.
5. Find all students who borrowed books on their birthday.

WINDOW FUNCTION EXTENSION (Bonus 5 Questions)

1. Rank books in each category based on the total times borrowed.
2. Show each student's borrow count and rank within their department.
3. Display moving average of book borrow count per category (last 3 months).
4. Rank authors globally by total borrow frequency.
5. Show percentile grouping (NTILE 4) of students based on total borrowed books.

Submission Timeline

Deadline: 23 October 2025

Mode: https://drive.google.com/drive/folders/1o_y_RAoiDlcS-uroG3c1HkFRsEO-Z12Y?usp=sharing