1.

mysql> SELECT book\_name FROM BOOK

-> WHERE author\_id = (SELECT author\_id FROM author WHERE author\_name = "Loni")

-> AND price < 600;

+--------------+

| book\_name |

+--------------+

| Intro to SQL |

+--------------+

2.

mysql> SELECT \* FROM lib\_issue

-> WHERE return\_date IS NULL;

+--------------+-----------+---------+------------+-------------+

| Lib\_Issue\_ID | Member\_ID | Book\_No | Issue\_Date | Return\_Date |

+--------------+-----------+---------+------------+-------------+

| 7001 | 101 | 101 | 2024-11-01 | NULL |

| 7003 | 102 | 103 | 2024-12-05 | NULL |

| 7005 | 104 | 105 | 2024-12-15 | NULL |

| 7007 | 102 | 107 | 2024-12-20 | NULL |

+--------------+-----------+---------+------------+-------------+

3.

mysql> UPDATE lib\_issue SET return\_date = "2006-12-31"

-> WHERE return\_date IS NULL

-> AND lib\_issue\_id NOT IN (7005, 7006);

4.

mysql> SELECT \* FROM lib\_issue

-> WHERE (return\_date - issue\_date) > 30;

+--------------+-----------+---------+------------+-------------+

| Lib\_Issue\_ID | Member\_ID | Book\_No | Issue\_Date | Return\_Date |

+--------------+-----------+---------+------------+-------------+

| 7002 | 101 | 102 | 2024-10-01 | 2024-11-05 |

| 7004 | 103 | 104 | 2024-07-10 | 2024-08-05 |

| 7008 | 103 | 108 | 2024-11-10 | 2024-12-01 |

+--------------+-----------+---------+------------+-------------+

5.

mysql> SELECT \* FROM book

-> WHERE price BETWEEN 500 AND 750

-> AND category = "database";

+---------+-------------------+-----------+----------+--------+

| Book\_No | Book\_Name | Author\_ID | Category | Price |

+---------+-------------------+-----------+----------+--------+

| 101 | Intro to SQL | 1 | Database | 550.00 |

| 102 | Advanced Database | 1 | Database | 700.00 |

| 107 | SQL Mastery | 2 | Database | 620.00 |

+---------+-------------------+-----------+----------+--------+

6.

mysql> SELECT \* FROM book

-> WHERE category IN ("Science", "Database", "Fiction", "Management");

+---------+--------------------+-----------+------------+--------+

| Book\_No | Book\_Name | Author\_ID | Category | Price |

+---------+--------------------+-----------+------------+--------+

| 101 | Intro to SQL | 1 | Database | 550.00 |

| 102 | Advanced Database | 1 | Database | 700.00 |

| 103 | RDBMS Concepts | 2 | Database | 800.00 |

| 104 | Science Explained | 3 | Science | 650.00 |

| 105 | Fiction World | 4 | Fiction | 400.00 |

| 106 | Management 101 | 2 | Management | 750.00 |

| 107 | SQL Mastery | 2 | Database | 620.00 |

| 108 | History of Science | 3 | Science | 300.00 |

+---------+--------------------+-----------+------------+--------+

7.

mysql> SELECT \* FROM member

-> ORDER BY penalty\_amount DESC;

+-----------+--------------+-------------+-------------------+----------------+---------------+----------------+

| Member\_ID | Member\_Name | Member\_Type | Max\_Books\_Allowed | Membership\_Fee | Acc\_Open\_Date | Penalty\_Amount |

+-----------+--------------+-------------+-------------------+----------------+---------------+----------------+

| 104 | Sneha Roy | Monthly | 2 | 200.00 | 2007-03-15 | 70.00 |

| 101 | Garima | Lifetime | 5 | 1000.00 | 2006-01-05 | 50.00 |

| 102 | Richa Sharma | Annual | 3 | 500.00 | 2006-12-10 | 20.00 |

| 103 | Rahul Jain | Lifetime | 4 | 900.00 | 2006-05-20 | 0.00 |

| 105 | Aman Verma | Lifetime | 1 | 1100.00 | 2006-02-18 | 0.00 |

+-----------+--------------+-------------+-------------------+----------------+---------------+----------------+

8.

mysql> UPDATE book

-> SET price = 300

-> WHERE book\_no = 103;

mysql> UPDATE book

-> SET category = "RDBMS"

-> WHERE book\_no = 103;

9.

mysql> SELECT \* FROM book

-> ORDER BY category ASC, price DESC;

+---------+--------------------+-----------+------------+--------+

| Book\_No | Book\_Name | Author\_ID | Category | Price |

+---------+--------------------+-----------+------------+--------+

| 102 | Advanced Database | 1 | Database | 700.00 |

| 107 | SQL Mastery | 2 | Database | 620.00 |

| 101 | Intro to SQL | 1 | Database | 550.00 |

| 105 | Fiction World | 4 | Fiction | 400.00 |

| 106 | Management 101 | 2 | Management | 750.00 |

| 103 | RDBMS Concepts | 2 | RDBMS | 300.00 |

| 104 | Science Explained | 3 | Science | 650.00 |

| 108 | History of Science | 3 | Science | 300.00 |

+---------+--------------------+-----------+------------+--------+

10.

mysql> SELECT \* FROM book

-> WHERE book\_name LIKE "%SQL%";

+---------+--------------+-----------+----------+--------+

| Book\_No | Book\_Name | Author\_ID | Category | Price |

+---------+--------------+-----------+----------+--------+

| 101 | Intro to SQL | 1 | Database | 550.00 |

| 107 | SQL Mastery | 2 | Database | 620.00 |

+---------+--------------+-----------+----------+--------+

11.

mysql> SELECT lib\_issue\_id, issue\_date, return\_date, DATEDIFF(return\_date, issue\_date) AS "no of days issued" FROM lib\_issue;

+--------------+------------+-------------+-------------------+

| lib\_issue\_id | issue\_date | return\_date | no of days issued |

+--------------+------------+-------------+-------------------+

| 7001 | 2024-11-01 | 2006-12-31 | -6515 |

| 7002 | 2024-10-01 | 2024-11-05 | 35 |

| 7003 | 2024-12-05 | 2006-12-31 | -6549 |

| 7004 | 2024-07-10 | 2024-08-05 | 26 |

| 7005 | 2024-12-15 | NULL | NULL |

| 7006 | 2024-12-01 | 2024-12-31 | 30 |

| 7007 | 2024-12-20 | 2006-12-31 | -6564 |

| 7008 | 2024-11-10 | 2024-12-01 | 21 |

+--------------+------------+-------------+-------------------+

12.

mysql> SELECT \* FROM member

-> ORDER BY acc\_open\_date;

+-----------+--------------+-------------+-------------------+----------------+---------------+----------------+

| Member\_ID | Member\_Name | Member\_Type | Max\_Books\_Allowed | Membership\_Fee | Acc\_Open\_Date | Penalty\_Amount |

+-----------+--------------+-------------+-------------------+----------------+---------------+----------------+

| 101 | Garima | Lifetime | 5 | 1000.00 | 2006-01-05 | 50.00 |

| 105 | Aman Verma | Lifetime | 1 | 1100.00 | 2006-02-18 | 0.00 |

| 103 | Rahul Jain | Lifetime | 4 | 900.00 | 2006-05-20 | 0.00 |

| 102 | Richa Sharma | Annual | 3 | 500.00 | 2006-12-10 | 20.00 |

| 104 | Sneha Roy | Monthly | 2 | 200.00 | 2007-03-15 | 70.00 |

+-----------+--------------+-------------+-------------------+----------------+---------------+----------------+

13.

mysql> SELECT COUNT(book\_no) FROM lib\_issue

-> WHERE member\_id = 101;

+----------------+

| COUNT(book\_no) |

+----------------+

| 2 |

+----------------+

14.

SELECT SUM(penalty\_amount) AS total\_penalty\_due FROM member;

+-------------------+

| total\_penalty\_due |

+-------------------+

| 140.00 |

+-------------------+

15.

mysql> SELECT COUNT(member\_id) AS total\_no\_of\_members FROM member;

+---------------------+

| total\_no\_of\_members |

+---------------------+

| 5 |

+---------------------+

16.

mysql> SELECT COUNT(book\_no) AS total\_no\_of\_books FROM book;

+-------------------+

| total\_no\_of\_books |

+-------------------+

| 8 |

+-------------------+

17.

mysql> SELECT AVG(membership\_fee) AS avg\_membership\_fee FROM member;

+--------------------+

| avg\_membership\_fee |

+--------------------+

| 740.000000 |

+--------------------+

18.

mysql> SELECT category, COUNT(book\_no) AS book\_count\_by\_category FROM book GROUP BY category;

+------------+------------------------+

| category | book\_count\_by\_category |

+------------+------------------------+

| Database | 3 |

| RDBMS | 1 |

| Science | 2 |

| Fiction | 1 |

| Management | 1 |

+------------+------------------------+

19.

mysql> SELECT Book\_No, COUNT(book\_no) AS issue\_count FROM lib\_issue

-> GROUP BY book\_no

-> ORDER BY issue\_count DESC;

+---------+-------------+

| Book\_No | issue\_count |

+---------+-------------+

| 101 | 1 |

| 102 | 1 |

| 103 | 1 |

| 104 | 1 |

| 105 | 1 |

| 106 | 1 |

| 107 | 1 |

| 108 | 1 |

+---------+-------------+

20.

mysql> SELECT MAX(penalty\_amount), MIN(penalty\_amount), AVG(penalty\_amount), COUNT(penalty\_amount) FROM member;

+---------------------+---------------------+---------------------+-----------------------+

| MAX(penalty\_amount) | MIN(penalty\_amount) | AVG(penalty\_amount) | COUNT(penalty\_amount) |

+---------------------+---------------------+---------------------+-----------------------+

| 70.00 | 0.00 | 28.000000 | 5 |

+---------------------+---------------------+---------------------+-----------------------+

21.

mysql> SELECT member\_id, COUNT(book\_no) AS books\_issued FROM lib\_issue

-> GROUP BY member\_id

-> HAVING COUNT(book\_no) >= 2

-> ORDER BY books\_issued DESC;

+-----------+--------------+

| member\_id | books\_issued |

+-----------+--------------+

| 101 | 2 |

| 102 | 2 |

| 103 | 2 |

+-----------+--------------+

22.

mysql> SELECT member\_id, book\_no, COUNT(book\_no) AS book\_issued FROM lib\_issue

-> GROUP BY member\_id, book\_no

-> ORDER BY book\_issued DESC;

+-----------+---------+-------------+

| member\_id | book\_no | book\_issued |

+-----------+---------+-------------+

| 101 | 101 | 1 |

| 101 | 102 | 1 |

| 102 | 103 | 1 |

| 103 | 104 | 1 |

| 104 | 105 | 1 |

| 105 | 106 | 1 |

| 102 | 107 | 1 |

| 103 | 108 | 1 |

+-----------+---------+-------------+

23.

mysql> SELECT member\_id, MONTHNAME(issue\_date) AS month\_issued, COUNT(book\_no) AS book\_issued

-> FROM lib\_issue

-> GROUP BY member\_id, month\_issued

-> ORDER BY book\_issued;

+-----------+--------------+-------------+

| member\_id | month\_issued | book\_issued |

+-----------+--------------+-------------+

| 101 | November | 1 |

| 101 | October | 1 |

| 103 | July | 1 |

| 104 | December | 1 |

| 105 | December | 1 |

| 103 | November | 1 |

| 102 | December | 2 |

+-----------+--------------+-------------+

24.

mysql> SELECT book\_no FROM lib\_issue

-> WHERE issue\_date IS NULL;

Empty set (0.00 sec)

25.

mysql> SELECT member\_id FROM member WHERE member\_id IN (SELECT member\_id FROM lib\_issue);

+-----------+

| member\_id |

+-----------+

| 101 |

| 102 |

| 103 |

| 104 |

| 105 |

+-----------+

26.

mysql> SELECT Member\_ID, COUNT(\*) AS Issue\_Count

-> FROM lib\_issue

-> GROUP BY Member\_ID

-> ORDER BY Issue\_Count DESC

-> LIMIT 1;

+-----------+-------------+

| Member\_ID | Issue\_Count |

+-----------+-------------+

| 102 | 3 |

+-----------+-------------+

mysql> SELECT Member\_ID, COUNT(\*) AS Issue\_Count

-> FROM lib\_issue

-> GROUP BY Member\_ID

-> ORDER BY Issue\_Count ASC

-> LIMIT 1;

+-----------+-------------+

| Member\_ID | Issue\_Count |

+-----------+-------------+

| 104 | 1 |

+-----------+-------------+

27.

mysql> SELECT \* FROM lib\_issue

-> WHERE MONTHNAME(Issue\_Date) IN ('December', 'July');

+--------------+-----------+---------+------------+-------------+

| Lib\_Issue\_ID | Member\_ID | Book\_No | Issue\_Date | Return\_Date |

+--------------+-----------+---------+------------+-------------+

| 7003 | 102 | 103 | 2024-12-05 | 2006-12-31 |

| 7004 | 103 | 104 | 2024-07-10 | 2024-08-05 |

| 7005 | 104 | 105 | 2024-12-15 | NULL |

| 7006 | 105 | 106 | 2024-12-01 | 2024-12-31 |

| 7007 | 102 | 107 | 2024-12-20 | 2006-12-31 |

+--------------+-----------+---------+------------+-------------+

28.

mysql> SELECT Book\_No, (SELECT Book\_Name FROM book WHERE book.Book\_No = lib\_issue.Book\_No) AS Book\_Name, Issue\_Date FROM lib\_issue

-> WHERE MONTHNAME(Issue\_Date) = 'December'

-> AND Book\_No IN (SELECT Book\_No FROM book WHERE Category = 'Database');

+---------+-------------+------------+

| Book\_No | Book\_Name | Issue\_Date |

+---------+-------------+------------+

| 107 | SQL Mastery | 2024-12-20 |

+---------+-------------+------------+

29.

mysql> SELECT Member\_ID, Member\_Name, Max\_Books\_Allowed

-> FROM member

-> ORDER BY Max\_Books\_Allowed DESC;

+-----------+--------------+-------------------+

| Member\_ID | Member\_Name | Max\_Books\_Allowed |

+-----------+--------------+-------------------+

| 101 | Garima | 5 |

| 103 | Rahul Jain | 4 |

| 102 | Richa Sharma | 3 |

| 104 | Sneha Roy | 2 |

| 105 | Aman Verma | 1 |

+-----------+--------------+-------------------+

30.

mysql> SELECT Book\_No, (SELECT Book\_Name FROM book WHERE book.Book\_No = lib\_issue.Book\_No) AS Book\_Name, Issue\_Date, Return\_Date

-> FROM lib\_issue

-> WHERE Member\_ID = (SELECT Member\_ID FROM member WHERE Member\_Name = 'Richa Sharma');

+---------+----------------+------------+-------------+

| Book\_No | Book\_Name | Issue\_Date | Return\_Date |

+---------+----------------+------------+-------------+

| 103 | RDBMS Concepts | 2024-12-05 | 2006-12-31 |

| 107 | SQL Mastery | 2024-12-20 | 2006-12-31 |

| 107 | SQL Mastery | 2024-11-01 | NULL |

+---------+----------------+------------+-------------+

31.

mysql> SELECT \* FROM member

-> WHERE Member\_ID IN (SELECT Member\_ID FROM lib\_issue

-> WHERE Book\_No IN (SELECT Book\_No FROM book WHERE Category = 'Database'));

+-----------+--------------+-------------+-------------------+----------------+---------------+----------------+

| Member\_ID | Member\_Name | Member\_Type | Max\_Books\_Allowed | Membership\_Fee | Acc\_Open\_Date | Penalty\_Amount |

+-----------+--------------+-------------+-------------------+----------------+---------------+----------------+

| 101 | Garima | Lifetime | 5 | 1000.00 | 2006-01-05 | 50.00 |

| 102 | Richa Sharma | Annual | 3 | 500.00 | 2006-12-10 | 20.00 |

+-----------+--------------+-------------+-------------------+----------------+---------------+----------------+

32.

mysql> SELECT \* FROM book

-> WHERE Price IN (SELECT MAX(Price) FROM book GROUP BY Category);

+---------+--------------------+-----------+------------+--------+

| Book\_No | Book\_Name | Author\_ID | Category | Price |

+---------+--------------------+-----------+------------+--------+

| 102 | Advanced Database | 1 | Database | 700.00 |

| 103 | RDBMS Concepts | 2 | RDBMS | 300.00 |

| 104 | Science Explained | 3 | Science | 650.00 |

| 105 | Fiction World | 4 | Fiction | 400.00 |

| 106 | Management 101 | 2 | Management | 750.00 |

| 108 | History of Science | 3 | Science | 300.00 |

+---------+--------------------+-----------+------------+--------+

33.

mysql> SELECT \* FROM lib\_issue

-> WHERE Member\_ID IN (SELECT Member\_ID FROM member)

-> AND (Issue\_Date < (SELECT Acc\_Open\_Date FROM member WHERE member.Member\_ID = lib\_issue.Member\_ID) OR (Return\_Date IS NOT NULL AND > (

-> SELECT Return\_Date FROM lib\_issue li2 WHERE li2.Lib\_Issue\_ID = lib\_issue.Lib\_Issue\_ID)));

+--------------+-----------+---------+------------+-------------+

| Lib\_Issue\_ID | Member\_ID | Book\_No | Issue\_Date | Return\_Date |

+--------------+-----------+---------+------------+-------------+

| 7001 | 101 | 101 | 2024-11-01 | 2006-12-31 |

| 7003 | 102 | 103 | 2024-12-05 | 2006-12-31 |

| 7007 | 102 | 107 | 2024-12-20 | 2006-12-31 |

+--------------+-----------+---------+------------+-------------+

34.

SELECT Member\_ID, Member\_Name FROM member

WHERE Member\_ID NOT IN (

SELECT Member\_ID

FROM lib\_issue

WHERE Member\_ID IS NOT NULL

);

35.

SELECT Member\_ID, Member\_Name FROM member

WHERE Member\_ID IN (

SELECT Member\_ID

FROM lib\_issue

WHERE Book\_No IN (

SELECT Book\_No

FROM lib\_issue

WHERE Member\_ID = (

SELECT Member\_ID

FROM member

WHERE Member\_Name = 'Garima'

)

)

)

AND Member\_ID != (

SELECT Member\_ID

FROM member

WHERE Member\_Name = 'Garima'

);

36.

SELECT Book\_Name, Price FROM book

WHERE Book\_No IN (

SELECT Book\_No

FROM lib\_issue

WHERE Return\_Date IS NULL

OR DATEDIFF(Return\_Date, Issue\_Date) > 30

);

37.

SELECT Author\_ID, Book\_Name FROM book

WHERE Author\_ID IN (

SELECT Author\_ID

FROM book

GROUP BY Author\_ID

HAVING COUNT(\*) > 1

);

38.

SELECT Member\_ID, Member\_Name FROM member

WHERE Member\_ID IN (

SELECT Member\_ID

FROM lib\_issue

GROUP BY Member\_ID

HAVING COUNT(\*) = (

SELECT MAX(book\_count)

FROM (

SELECT COUNT(\*) AS book\_count

FROM lib\_issue

GROUP BY Member\_ID

) AS counts

)

);

SELECT Member\_ID, Member\_Name FROM member

WHERE Member\_ID IN (

SELECT Member\_ID

FROM lib\_issue

GROUP BY Member\_ID

HAVING COUNT(\*) = (

SELECT MIN(book\_count)

FROM (

SELECT COUNT(\*) AS book\_count

FROM lib\_issue

GROUP BY Member\_ID

) AS counts

)

);

39.

SELECT \* FROM book

ORDER BY Price DESC

LIMIT 3;

40.

SELECT SUM(Price) AS Total\_Cost FROM book

WHERE Book\_No IN (

SELECT Book\_No

FROM lib\_issue

WHERE Return\_Date IS NULL

);

41.

SELECT \* FROM book

WHERE Book\_No = (

SELECT Book\_No

FROM lib\_issue

GROUP BY Book\_No

ORDER BY COUNT(\*) DESC

LIMIT 1);

42.

SELECT COUNT(\*) AS Total\_Issued

FROM lib\_issue

WHERE Member\_ID IN (

SELECT Member\_ID

FROM member

WHERE Member\_Type = 'Lifetime');

43.

SELECT Member\_Type, COUNT(\*) AS Total\_Members FROM member

GROUP BY Member\_Type;

44.

SELECT \* FROM member

ORDER BY Acc\_Open\_Date

LIMIT 5;

45.

SELECT Member\_ID, Member\_Name, Member\_Type FROM member

WHERE Member\_ID IN (

SELECT Member\_ID

FROM lib\_issue

WHERE Issue\_Date BETWEEN '2024-12-01' AND '2024-12-31'

);

46.

SELECT Member\_ID, Member\_Name FROM member

WHERE Member\_ID IN (

SELECT Member\_ID

FROM lib\_issue

WHERE Return\_Date IS NULL

);

47.

SELECT Member\_ID, Member\_Name FROM member

WHERE Acc\_Open\_Date = (

SELECT Acc\_Open\_Date

FROM member

WHERE Member\_Name = 'Garima'

);

48.

SELECT Member\_ID, Member\_Name FROM member

WHERE Member\_ID IN (

SELECT Member\_ID

FROM lib\_issue

WHERE MONTH(Issue\_Date) = 12

AND Book\_No IN (

SELECT Book\_No

FROM book

WHERE Author\_ID = (

SELECT Author\_ID

FROM author

WHERE Author\_Name = 'Loni'

)

)

);

49.

SELECT Author\_Name FROM author

WHERE Author\_ID IN (

SELECT Author\_ID

FROM book

WHERE Book\_No IN (

SELECT Book\_No

FROM lib\_issue

WHERE Member\_ID IN (

SELECT Member\_ID

FROM member

WHERE Member\_Type = 'Lifetime'

)

GROUP BY Book\_No

ORDER BY COUNT(\*) ASC

LIMIT 1

)

);

50.

SELECT Member\_Name FROM member

WHERE Member\_ID IN (

SELECT Member\_ID

FROM lib\_issue

WHERE Book\_No IN (

SELECT Book\_No

FROM book

WHERE Price > 300

AND Author\_ID = (

SELECT Author\_ID

FROM author

WHERE Author\_Name = 'Scott Urman'

)

)

);

51.

SELECT Member\_ID, Member\_Name FROM member

WHERE Member\_Type = 'Lifetime'

AND Acc\_Open\_Date BETWEEN '2006-01-01' AND '2006-12-31'

AND Member\_ID IN (

SELECT Member\_ID

FROM lib\_issue

GROUP BY Member\_ID

HAVING COUNT(\*) = 1);

52.

UPDATE member

SET Penalty\_Amount = 100

WHERE Member\_Name = 'Garima';