1) Create the table Member, Books and Issue without any constraints as

mentioned in the schema description above.

mysql> create table member

-> (member\_id int unique,

-> member\_name varchar(20),

-> member\_address varchar(20),

-> acc\_open\_date date ,

-> membership\_type varchar(20),

-> fees\_paid int,

-> max\_book\_allowed int,

-> penalty\_amount decimal(7,2));

Query OK, 0 rows affected (0.09 sec)

mysql> create table book

-> (book\_no int,

-> book\_name varchar(20),

-> author\_name varchar(20),

-> cost decimal(7,2),

-> category char(10));

Query OK, 0 rows affected (0.07 sec)

mysql> create table issue

-> (lib\_issue\_id int,

-> book\_no int,

-> member\_id int,

-> issue\_date date,

-> return\_date date);

Query OK, 0 rows affected (0.03 sec)

2) View the structure of the tables.

desc issue;

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

| Field | Type | Null | Key | Default | Extra |

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

| lib\_issue\_id | int | YES | | NULL | |

| book\_no | int | YES | | NULL | |

| member\_id | int | YES | | NULL | |

| issue\_date | date | YES | | NULL | |

| return\_date | date | YES | | NULL | |

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

5 rows in set (0.00 sec)

mysql> desc member ;

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

| Field | Type | Null | Key | Default | Extra |

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

| member\_id | int | YES | UNI | NULL | |

| member\_name | varchar(20) | YES | | NULL | |

| member\_address | varchar(20) | YES | | NULL | |

| acc\_open\_date | date | YES | | NULL | |

| membership\_type | varchar(20) | YES | | NULL | |

| fees\_paid | int | YES | | NULL | |

| max\_book\_allowed | int | YES | | NULL | |

| penalty\_amount | decimal(7,2) | YES | | NULL | |

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

8 rows in set (0.00 sec)

mysql> desc book;

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

| Field | Type | Null | Key | Default | Extra |

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

| book\_no | int | YES | | NULL | |

| book\_name | varchar(20) | YES | | NULL | |

| author\_name | varchar(20) | YES | | NULL | |

| cost | decimal(7,2) | YES | | NULL | |

| category | char(10) | YES | | NULL | |

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

5 rows in set (0.00 sec)

mysql> desc issue;

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

| Field | Type | Null | Key | Default | Extra |

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

| lib\_issue\_id | int | YES | | NULL | |

| book\_no | int | YES | | NULL | |

| member\_id | int | YES | | NULL | |

| issue\_date | date | YES | | NULL | |

| return\_date | date | YES | | NULL | |

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

3) Drop the Member table

mysql> drop table member;

Query OK, 0 rows affected (0.03 sec)

mysql> desc member;

ERROR 1146 (42S02): Table 'assignment2.member' doesn't exist

5) Modify the table Member increase the width of the member name to 30

characters.

mysql> ALTER table member

-> MODIFY column member\_name varchar(30);

Query OK, 0 rows affected (0.06 sec)

Records: 0 Duplicates: 0 Warnings: 0

6) Add a column named as Reference of Char(30) to Issue table.

mysql> ALTER table issue

-> add column reference char(30);

Query OK, 0 rows affected (0.08 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc issue;

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

| Field | Type | Null | Key | Default | Extra |

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

| lib\_issue\_id | int | YES | | NULL | |

| book\_no | int | YES | | NULL | |

| member\_id | int | YES | | NULL | |

| issue\_date | date | YES | | NULL | |

| return\_date | date | YES | | NULL | |

| reference | char(30) | YES | | NULL | |

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

6 rows in set (0.00 sec)

7) Delete/Drop the column Reference from Issue.

mysql> ALTER table issue

-> DROP column reference ;

Query OK, 0 rows affected (0.06 sec)

Records: 0 Duplicates: 0 Warnings: 0

8) Rename the table Issue to Lib\_Issue.

mysql> ALTER table issue

-> RENAME Lib\_issue;

Query OK, 0 rows affected (0.02 sec)

9) Insert following data in table Member

mysql> INSERT into member values(1,"Richa Sharma","Pune","10-12-05","Lifetime",25000,5,50);

Query OK, 1 row affected (0.03 sec)

mysql> INSERT into member values(2,"Garima sen","Pune",curdate(),"Annual",1000,3,NULL);

Query OK, 1 row affected (0.03 sec)

mysql> table member;

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

| member\_id | member\_name | member\_address | acc\_open\_date | membership\_type | fees\_paid | max\_book\_allowed | penalty\_amount |

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

| 1 | Richa Sharma | Pune | 2010-12-05 | Lifetime | 25000 | 5 | 50.00 |

| 2 | Garima sen | Pune | 2025-08-18 | Annual | 1000 | 3 | NULL |

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

2 rows in set (0.01 sec)

10) Insert at least 5 records with suitable data.

mysql> INSERT into member values(3,"Sushmita sen","Banglore","2024-12-05","Annual",10000,3,20);

Query OK, 1 row affected (0.02 sec)

mysql> INSERT into member values(4,"hena malini","Mumbai","2023-12-05","Half Yearly",50000,2,100);

Query OK, 1 row affected (0.02 sec)

mysql> INSERT into member values(5,"anushka sharma","Hyderabad","2021-10-05","Yearly",54000,5,NULL);

Query OK, 1 row affected (0.01 sec)

mysql> INSERT into member values(6,"Madhuri dikshit","Chennai","2020-10-05","Annual",44000,6,50);

Query OK, 1 row affected (0.01 sec)

mysql> table member;

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

| member\_id | member\_name | member\_address | acc\_open\_date | membership\_type | fees\_paid | max\_book\_allowed | penalty\_amount |

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

| 1 | Richa Sharma | Pune | 2010-12-05 | Lifetime | 25000 | 5 | 50.00 |

| 2 | Garima sen | Pune | 2025-08-18 | Annual | 1000 | 3 | NULL |

| 3 | Sushmita sen | Banglore | 2024-12-05 | Annual | 10000 | 3 | 20.00 |

| 4 | hena malini | Mumbai | 2023-12-05 | Half Yearly | 50000 | 2 | 100.00 |

| 5 | anushka sharma | Hyderabad | 2021-10-05 | Yearly | 54000 | 5 | NULL |

| 6 | Madhuri dikshit | Chennai | 2020-10-05 | Annual | 44000 | 6 | 50.00 |

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

6 rows in set (0.00 sec)

11) Modify the column Member\_name. Decrease the width of the member

name to 20 characters. (If it does not allow state the reason for that)

mysql> ALTER table member

-> MODIFY member\_name varchar(20);

Query OK, 6 rows affected (0.10 sec)

Records: 6 Duplicates: 0 Warnings: 0

12) Try to insert a record with Max\_Books\_Allowed = 110, Observe the

error that comes.

mysql> INSERT into member values(7,"shrilila","hyderabad","2022-09-09","Yearly",40000,110,NULL);

Query OK, 1 row affected (0.02 sec)

mysql> table member;

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

| member\_id | member\_name | member\_address | acc\_open\_date | membership\_type | fees\_paid | max\_book\_allowed | penalty\_amount |

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

| 1 | Richa Sharma | Pune | 2010-12-05 | Lifetime | 25000 | 5 | 50.00 |

| 2 | Garima sen | Pune | 2025-08-18 | Annual | 1000 | 3 | NULL |

| 3 | Sushmita sen | Banglore | 2024-12-05 | Annual | 10000 | 3 | 20.00 |

| 4 | hena malini | Mumbai | 2023-12-05 | Half Yearly | 50000 | 2 | 100.00 |

| 5 | anushka sharma | Hyderabad | 2021-10-05 | Yearly | 54000 | 5 | NULL |

| 6 | Madhuri dikshit | Chennai | 2020-10-05 | Annual | 44000 | 6 | 50.00 |

| 7 | shrilila | hyderabad | 2022-09-09 | Yearly | 40000 | 110 | NULL |

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

7 rows in set (0.00 sec)

14) Add the constraints on columns max\_books\_allowed and penalty\_amt

as follows

a. max\_books\_allowed < 100

b. penalty\_amt maximum 1000

Also give names to the constraints.

mysql> ALTER table member

-> add constraint chk1 check(max\_book\_allowed<100);

Query OK, 6 rows affected (0.12 sec)

Records: 6 Duplicates: 0 Warnings: 0

mysql> ALTER table member

-> add constraint chk2 check(penalty\_amount <=1000);

Query OK, 6 rows affected (0.10 sec)

Records: 6 Duplicates: 0 Warnings: 0

15) Drop the table books.

mysql> DROP table book;

Query OK, 0 rows affected (0.03 sec)

16) Create table Books again as per the schema description with the

following constraints.

a. Book\_No – Primary Key

b. Book\_Name – Not Null

c. Category – System, Fiction, Database, RDBMS, Others.

mysql> CREATE table book

-> (book\_no int primary key,

-> book\_name varchar(20) NOT NULL,

-> author\_name varchar(20) ,

-> cost decimal(7,2),

-> category char(10));

Query OK, 0 rows affected (0.04 sec)

ALTER table book

-> ADD CONSTRAINT chk3 CHECK (category IN('System','Fiction','Database','RDBMS','Others'));

Query OK, 0 rows affected (0.10 sec)

Records: 0 Duplicates: 0 Warnings: 0

CREATE table book

-> (book\_no int PRIMARY KEY,

-> book\_name VARCHAR(20) NOT NULL,

-> author VARCHAR(20),

-> cost DECIMAL(7,2),

-> category VARCHAR(30) CHECK (category IN('System','Fiction','Database','RDBMS','Others')));

Query OK, 0 rows affected (0.03 sec)

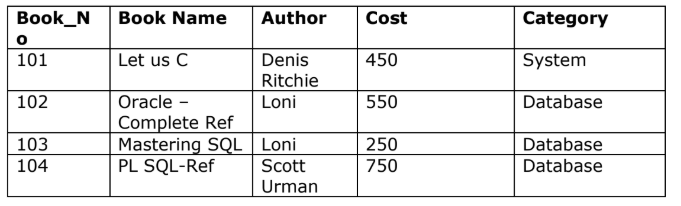
mysql> ALTER table book

-> ADD CONSTRAINT chk3 CHECK (category IN('System','Fiction','Database','RDBMS','Others'));

Query OK, 0 rows affected (0.10 sec)

Records: 0 Duplicates: 0 Warnings: 0

17) Insert data in Book table as follows:



mysql> INSERT into book VALUES(102,'Oracle-Complete Ref','Loni',550,'Database');

Query OK, 1 row affected (0.01 sec)

mysql> INSERT into book VALUES(103,'Mastering SQL','Loni',250,'Database');

Query OK, 1 row affected (0.02 sec)

mysql> INSERT into book VALUES(104,'PL SQL-Ref','Scott Urman',750,'Database');

Query OK, 1 row affected (0.02 sec)

18) Insert more records in Book table.

mysql> INSERT into book VALUES(105,'xyz','xyz1',650,'Fiction');

Query OK, 1 row affected (0.02 sec)

mysql> INSERT into book VALUES(106,'lmn','lmn1',450,'RDBMS');

Query OK, 1 row affected (0.02 sec)

mysql> INSERT into book VALUES(107,'rtu','rtu1',250,'Others');

Query OK, 1 row affected (0.00 sec)

mysql> INSERT into book VALUES(108,'abc','abc1',850,'Fiction');

Query OK, 1 row affected (0.02 sec)

mysql> INSERT into book VALUES(109,'put','put1',780,'Database');

Query OK, 1 row affected (0.02 sec)

mysql> INSERT into book VALUES(110,'ghj','ghj1',880,'System');

Query OK, 1 row affected (0.02 sec)

19) View the data in the tables using simple SQL query.

mysql> table book;

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

| book\_no | book\_name | author | cost | category |

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

| 101 | Let us C | Denis Ritcie | 450.00 | System |

| 102 | Oracle-Complete Ref | Loni | 550.00 | Database |

| 103 | Mastering SQL | Loni | 250.00 | Database |

| 104 | PL SQL-Ref | Scott Urman | 750.00 | Database |

| 105 | xyz | xyz1 | 650.00 | Fiction |

| 106 | lmn | lmn1 | 450.00 | RDBMS |

| 107 | rtu | rtu1 | 250.00 | Others |

| 108 | abc | abc1 | 850.00 | Fiction |

| 109 | put | put1 | 780.00 | Database |

| 110 | ghj | ghj1 | 880.00 | System |

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

20) Insert into Book following data.

105, National Geographic, Adis Scott, 1000, Science

INSERT into book VALUES (105,'National Geographic','Adic Scott',1000,'Science');

21) Rename the table Lib\_Issue to Issue.

ALTER table Lib\_issue

-> RENAME Issue ;

Query OK, 0 rows affected (0.07 sec)

22) Drop table Issue.

DROP table Issue;

Query OK, 0 rows affected (0.04 sec)

23) As per the given structure Create table Issue again with following

constraints.

 Lib\_Issue\_Id-Primary key

 Book\_No- foreign key

 Member\_id - foreign key

 Issue\_date

 Return\_date

CREATE table Issue

-> (Lib\_Issue\_Id int primary key,

-> Book\_no int,

-> member\_id int,

-> Issue\_date date,

-> return\_date date,

-> ;

24) Insert following data into Issue table.



25) Remove the constraints on Issue table

mysql> INSERT into Issue VALUES(7001,101,1,"10-12-06",NULL);

Query OK, 1 row affected (0.02 sec)

mysql> INSERT into Issue VALUES(7002,102,2,"25-12-06",NULL);

Query OK, 1 row affected (0.02 sec)

mysql> INSERT into Issue VALUES(7003,104,1,"15-1-06",NULL);

Query OK, 1 row affected (0.00 sec)

mysql> INSERT into Issue VALUES(7004,101,1,"04-07-06",NULL);

Query OK, 1 row affected (0.02 sec)

mysql> INSERT into Issue VALUES(7005,104,2,"15-11-06",NULL);

Query OK, 1 row affected (0.00 sec)

mysql> INSERT into Issue VALUES(7006,101,3,"18-02-06",NULL);

Query OK, 1 row affected (0.01 sec)

26) Insert a record in Issue table. The member\_id should not exist in

member table.

INSERT into Issue VALUES(8001,101,999,"18-02-06",NULL);

27) Now enable the constraints of Issue table. Observe the error

mysql> ALTER table Issue

-> ADD CONSTRAINT chk2 FOREIGN KEY (member\_id) REFERENCES member(member\_id);

ERROR 1452 (23000): Cannot add or update a child row: a foreign key constraint fails (`assignment2`.`#sql-1b30\_8`, CONSTRAINT `chk2` FOREIGN KEY (`member\_id`) REFERENCES `member` (`member\_id`))

28) Delete the record inserted at Q-27) and enable the constraints.

delete from Issue

-> where Lib\_Issue\_Id = 8001;

Query OK, 1 row affected (0.02 sec)

29) Try to delete the record of member id 1 from member table and

observe the error .

delete from Issue

-> where member\_id = 1;

Query OK, 3 rows affected (0.02 sec)

30) View the data and structure of all the three tables Member,

Issue, Book.

mysql> table Issue;

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

| Lib\_Issue\_Id | book\_no | member\_id | issue\_date | return\_date |

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

| 7002 | 102 | 2 | 2025-12-06 | NULL |

| 7005 | 104 | 2 | 2015-11-06 | NULL |

| 7006 | 101 | 3 | 2018-02-06 | NULL |

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

3 rows in set (0.00 sec)

mysql> table member;

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

| member\_id | member\_name | member\_address | acc\_open\_date | membership\_type | fees\_paid | max\_book\_allowed | penalty\_amount |

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

| 1 | Richa Sharma | Pune | 2010-12-05 | Lifetime | 25000 | 5 | 50.00 |

| 2 | Garima sen | Pune | 2025-08-18 | Annual | 1000 | 3 | NULL |

| 3 | Sushmita sen | Banglore | 2024-12-05 | Annual | 10000 | 3 | 20.00 |

| 4 | hena malini | Mumbai | 2023-12-05 | Half Yearly | 50000 | 2 | 100.00 |

| 5 | anushka sharma | Hyderabad | 2021-10-05 | Yearly | 54000 | 5 | NULL |

| 6 | Madhuri dikshit | Chennai | 2020-10-05 | Annual | 44000 | 6 | 50.00 |

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

6 rows in set (0.00 sec)

mysql> table book;

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

| book\_no | book\_name | author | cost | category |

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

| 101 | Let us C | Denis Ritcie | 450.00 | System |

| 102 | Oracle-Complete Ref | Loni | 550.00 | Database |

| 103 | Mastering SQL | Loni | 250.00 | Database |

| 104 | PL SQL-Ref | Scott Urman | 750.00 | Database |

| 106 | lmn | lmn1 | 450.00 | RDBMS |

| 107 | rtu | rtu1 | 250.00 | Others |

| 108 | abc | abc1 | 850.00 | Fiction |

| 109 | put | put1 | 780.00 | Database |

| 110 | ghj | ghj1 | 880.00 | System |

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

9 rows in set (0.00 sec)

mysql> table Issue;

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

| Lib\_Issue\_Id | book\_no | member\_id | issue\_date | return\_date |

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

| 7002 | 102 | 2 | 2025-12-06 | NULL |

| 7005 | 104 | 2 | 2015-11-06 | NULL |

| 7006 | 101 | 3 | 2018-02-06 | NULL |

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

3 rows in set (0.00 sec)

mysql> desc member;

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

| Field | Type | Null | Key | Default | Extra |

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

| member\_id | int | YES | UNI | NULL | |

| member\_name | varchar(20) | YES | | NULL | |

| member\_address | varchar(20) | YES | | NULL | |

| acc\_open\_date | date | YES | | NULL | |

| membership\_type | varchar(20) | YES | | NULL | |

| fees\_paid | int | YES | | NULL | |

| max\_book\_allowed | int | YES | | NULL | |

| penalty\_amount | decimal(7,2) | YES | | NULL | |

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

8 rows in set (0.00 sec)

mysql> desc book

-> ;

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

| Field | Type | Null | Key | Default | Extra |

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

| book\_no | int | NO | PRI | NULL | |

| book\_name | varchar(20) | NO | | NULL | |

| author | varchar(20) | YES | | NULL | |

| cost | decimal(7,2) | YES | | NULL | |

| category | varchar(30) | YES | | NULL | |

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

5 rows in set (0.00 sec)

mysql> desc Issue;

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

| Field | Type | Null | Key | Default | Extra |

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

| Lib\_Issue\_Id | int | NO | PRI | NULL | |

| book\_no | int | YES | MUL | NULL | |

| member\_id | int | YES | MUL | NULL | |

| issue\_date | date | YES | | NULL | |

| return\_date | date | YES | | NULL | |

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

5 rows in set (0.00 sec)

31) Modify the Return\_Date of 7004,7005 to 15 days after the

Issue\_date.

UPDATE Issue

-> SET return\_date = DATE\_ADD(issue\_date, INTERVAL 15 day);

Query OK, 3 rows affected (0.02 sec)

Rows matched: 3 Changed: 3 Warnings: 0

32) Remove all the records from Issue table where member\_ID is 1

and Issue date in before 10-Dec-06.

delete from Issue

-> where member\_id =1 AND issue\_date<'10-12-06';

Query OK, 0 rows affected (0.02 sec)

33) Remove all the records from Book table with category other

than RDBMS and Database.

delete from book

-> where category NOT IN('RDBMS','Database');

34) Remove the table Member.

DROP table member;

35) Remove the table Book.

DROP table book;