Q.1

 Create a database called library_db and a table books with columns: book_id, title, author, publisher, year_of_publication, and price. Insert five records into the table.

CREATE DATABASE library_db;

CREATE TABLE books(

book_id int ,

title text ,

author text,

publisher text,

year_of_publication int,

price int

);

INSERT INTO books VALUES(1,'the jungle book ','denny','richarad',2010,400),(2,'the king of kgf ','rana','raja moli',2019,500),(3,'The animal park','petter','ronny',2013,700),(4,'hassina parker ','denny','rajendra',2015,400),(5,'rooh','kethi','jonshon',1967,800);

Ans.

book_id	title	author	publisher	year_of_publication	price
1	the jungle book	denny	richarad	2010	400
2	the king of kgf	rana	raja moli	2019	500
3	The animal park	petter	ronny	2013	700
4	hassina parker	denny	rajendra	2015	400
5	rooh	kethi	jonshon	1967	800

Q.2

Lab 3: Retrieve all members who joined the library before 2022. Use appropriate SQL syntax with WHERE and ORDER BY.

`SELECT *FROM books WHERE year_of_publication <='2022' ORDER by year_of_publication;`

Ans.

book_id	title	author	publisher	year_of_publication ▲ 1	price
5	rooh	kethi	jonshon	1967	800
1	the jungle book	denny	richarad	2010	400
3	The animal park	petter	ronny	2013	700
4	hassina parker	denny	rajendra	2015	400
2	the king of kgf	rana	raja moli	2019	500

Lab 4: Write SQL queries to display the titles of books published by a specific author. Sort the results by year_of_publication in descending order.

`SELECT title,author,publisher FROM books WHERE year_of_publication ORDER by year_of_publication DESC;`

Ans.

| title	author	publisher
the king of kgf	rana	raja moli
hassina parker	denny	rajendra
The animal park	petter	ronny
the jungle book	denny	richarad
rooh	kethi	jonshon

Q.3

Lab 3: Add a CHECK constraint to ensure that the price of books in the books table is greater than 0.

CREATE TABLE books1(b_id int , b_name text, b_price int CHECK(b_price>0));

Ans.

Error

SQL query: Copy

 INSERT into books1 VALUES(1,'petter jocson',0);
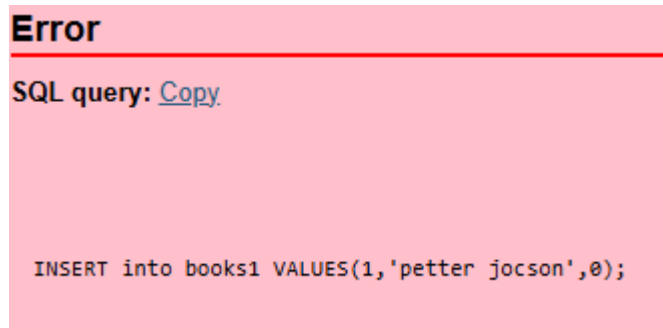
Lab 4: Modify the members table to add a UNIQUE constraint on the email column, ensuring that each member has a unique email address.

ALTER TABLE member MODIFY COLUMN email text UNIQUE;

Ans.

id	name	email
1	Alice John	alice.johnson@gmail.com
2	Bob Smith	bob.smith@gmail.com
3	Charlie Br	charlie.brown@gmail.com
4	David Lee	david.lee@gmail.com
5	Eva White	eva.white@gmail.com

Q.4

Lab 3: Create a table authors with the following columns: author_id, first_name, last_name, and country. Set author_id as the primary key.

CREATE TABLE author(author_id int PRIMARY KEY , first_name text , last_name text, country text);

Ans.

author_id	first_name	last_name	country

Lab 4: Create a table publishers with columns: publisher_id, publisher_name, contact_number, and address. Set publisher_id as the primary key and contact_number as unique.

CREATE TABLE publisher(
    publisher_id int PRIMARY key,

```
   publisher_name text,
   contact_number int UNIQUE,
   address text
   );
```
Ans.

author_id	first_name	last_name	country

Q.5
Lab 3: Add a new column genre to the books table. Update the genre for all existing records.
```
ALTER TABLE books add COLUMN gener text;
```
Ans.

book_id	title	author	publisher	year_of_publication	price	gener
1	the jungle book	denny	richarad	2010	400	about the jungle
2	the king of kgf	rana	raja moli	2019	500	gold maning
3	The animal park	petter	ronny	2013	700	no divce
4	hassina parker	denny	rajendra	2015	400	petter
5	rooh	kethi	jonshon	1967	800	hassina parker

Lab 4: Modify the members table to increase the length of the email column to 100 characters.

ALTER TABLE member MODIFY COLUMN email varchar(101);
Q.6
Lab 3: Drop the publishers table from the database after verifying its structure
DROP TABLE publisher;

Lab 4: Create a backup of the members table and then drop the original members table.
CREATE TABLE member_backup as SELECT* FROM member ;
DROP TABLE member;
Q.7
Lab 4: Insert three new authors into the authors table, then update the last name of one of the authors.
INSERT INTO author VALUES(1,'kishan','mir','india'),(2,'rohan','savani','india'),(3,'meru','kasotiya','india');
Ans.

author_id	first_name	last_name	country
1	kishan	mir	india
2	rohan	savani	india
3	meru	kasotiya	india

UPDATE author set last_name='bharvad' WHERE author_id=3;

author_id	first_name	last_name	country
1	kishan	mir	india
2	rohan	savani	india
3	meru	bharvad	india

Lab 5: Delete a book from the books table where the price is higher than 500 ruppee.
DELETE FROM books WHERE price>=500;
Ans.

book_id	title	author	publisher	year_of_publication	price	gener
1	the jungle book	denny	richarad	2010	400	about the jungle
4	hassina parker	denny	rajendra	2015	400	petter

Q.8
Lab 3: Update the year_of_publication of a book with a specific book_id
UPDATE books set year_of_publication=2024 WHERE book_id=1;
UPDATE books set year_of_publication=2019 WHERE book_id=4;
Ans.

book_id	title	author	publisher	year_of_publication	price	gener
1	the jungle book	denny	richarad	2024	400	about the jungle
4	hassina parker	denny	rajendra	2019	400	petter

Lab 4: Increase the price of all books published before 2015 by 10%
UPDATE books set price=5500 WHERE book_id=2;
Ans.

book_id	title	author	publisher	year_of_publication	price	gener
1	the jungle book	denny	richarad	2024	400	about the jungle
4	hassina parker	denny	rajendra	2019	400	petter
2	The mafiya	rohan	kishan	2014	5500	crime

Q.9
Lab 3: Remove all members who joined before 2020 from the members table.
DELETE FROM member_backup WHERE join_year<=2020;
Ans.

id	name	email	join_year
1	Alice John	alice.johnson@gmail.com	2021
3	Charlie Br	charlie.brown@gmail.com	2023
4	David Lee	david.lee@gmail.com	2023
5	Eva White	eva.white@gmail.com	2022

Lab 4: Delete all books that have a NULL value in the author column.
DELETE FROM books WHERE author is null;
Ans.

book_id	title	author	publisher	year_of_publication	price	gener
1	the jungle book	denny	richarad	2024	400	about the jungle
4	hassina parker	denny	rajendra	2019	400	petter
2	The mafiya	rohan	kishan	2014	5500	crime

Q.10

● **Lab 4: Write a query to retrieve all books with price between 800 and 5000.**

*SELECT * FROM books1 WHERE b_price BETWEEN 800 and 5000;*

Ans.

b_id	b_name	b_price
2	romeo juliyet	5000
4	it is not forever	4000
7	ratrani	900
8	rajaji	800

Lab 5: Retrieve the list of books sorted by author in ascending order and limit the results to the top 3 entries.

*SELECT * FROM books ORDER by author LIMIT 3 ;*

Ans.

book_id	title	author ▲ 1	publisher	year_of_publication	price	gener
1	the jungle book	denny	richarad	2024	400	about the jungle
4	hassina parker	denny	rajendra	2019	400	petter
2	The mafiya	rohan	kishan	2014	5500	crime

Q.14

Lab 3: Perform an INNER JOIN between books and authors tables to display the title of books and their respective authors' names.

select book.b_name,author.author_name from book INNER JOIN author on book.b_id=author.b_id;

ans.

b_name	author_name
the god of small things	kishan Bharwad
the white tiger	mayurbhai
a suitable boy	vishal mer
midnight s childern	meru Bharwad
a fine balance	rohan savani

Q.15

Lab 3: Group books by genre and display the total number of books in each genre.

```
SELECT gener,COUNT(B_name) from book GROUP by gener;
Ans.
```

gener	COUNT(B_name)
Fantasy	2
Non-fiction	2
Science Fiction	3

Lab 4: Group members by the year they joined and find the number of members who joined each year.
SELECT join_year,COUNT(name) from member_backup GROUP by join_year;
Ans.

join_year	COUNT(name)
2021	1
2022	1
2023	2

Q.16
● Lab 3: Write a stored procedure to retrieve all books by a particular author.
DELIMITER $$

CREATE PROCEDURE GetBooksByAuthor(a text)
BEGIN
   SELECT book_id, title, author, price
   FROM books
   WHERE author = a;
END
CALL GetBooksByAuthor('denny');
Ans.

book_id	title	author	price
1	the jungle book	denny	400
4	hassina parker	denny	400

● Lab 4: Write a stored procedure that takes book_id as an argument and returns the price of the book.
DELIMITER $$

CREATE PROCEDURE GetBookPrice(i INT)
BEGIN
   SELECT price
   FROM books
   WHERE book_id =i;
END
CALL GetBookPrice(2);
Ans.

price

5500

Q.17
Lab 3: Create a view to show only the title, author, and price of books from the books table.
CREATE VIEW v1 as SELECT title,author,price FROM books ;
*SELECT*FROM v1;*
Ans.

title	author	price
the jungle book	denny	400
hassina parker	denny	400
The mafiya	rohan	5500

Lab 4: Create a view to display members who joined before 2020.
CREATE VIEW v2 AS SELECT id, name, join_year FROM member_backup WHERE join_year < 2022;
*SELECT * FROM v2;*
Ans.

id	name	join_year
1	Alice John	2021

Q.18
Lab 3: Create a trigger to automatically update the last_modified timestamp of the books table whenever a record is updated.
DELIMITER $$

CREATE TRIGGER update_1 AFTER UPDATE ON book FOR EACH ROW

BEGIN

INSERT INTO book1(id,cname,action_performed) VALUES(new.id,new.name,"Record Updated!");

END
UPDATE employee set name='kishan' WHERE id=3;
Ans.

3	kishan	2025-01-20 13:38:37	Record Updated!

 Lab 4: Create a trigger that inserts a log entry into a log_changes table whenever a DELETE operation is performed on the books table.

DELIMITER $$

CREATE TRIGGER delete_trigger AFTER DELETE ON book
FOR EACH ROW

BEGIN

INSERT INTO book1(id,name,action_performed) VALUES(old.id,old.name,"Record Deleted!");

END
DELETE FROM book WHERE id=1;
Ans.

| 2 | ramayana | 2025-01-20 13:54:12 | Record Deleted! |