8) DDL and DML Commands a) Use DDL commands to create a Library database and define a Books table with fields: BookID, Title, Author, Genre, and Price. b) Insert at least five sample records into the Books table using INSERT (DML) and verify them using a SELECT query. c) A new column PublicationYear needs to be added. Use ALTER TABLE to modify the existing table structure. d) Update the price of all books published before 2020 by increasing 10% using the UPDATE statement. e) Use DELETE to remove all books where the genre is ‘Outdated Technology’ and validate the change with a SELECT query.

Which recent tool or technology have you studied for database management, and can you briefly explain its key features and why it is used in the industry?

CREATE DATABASE Library;

USE Library;

CREATE TABLE Books (

BookID INT PRIMARY KEY,

Title VARCHAR(255),

Author VARCHAR(255),

Genre VARCHAR(100),

Price DECIMAL(10, 2)

);

INSERT INTO Books (BookID, Title, Author, Genre, Price) VALUES

(1, 'The AI Revolution', 'John Smith', 'Technology', 500.00),

(2, 'Modern Web Development', 'Alice Johnson', 'Programming', 750.00),

(3, 'Ancient Computing', 'Bob Martin', 'Outdated Technology', 300.00),

(4, 'Data Science 101', 'Clara Brown', 'Education', 900.00),

(5, 'Future of Robotics', 'David Lee', 'Technology', 650.00);

SELECT \* FROM Books;

ALTER TABLE Books

ADD PublicationYear INT;

UPDATE Books SET PublicationYear = 2018 WHERE BookID = 1;

UPDATE Books SET PublicationYear = 2021 WHERE BookID = 2;

UPDATE Books SET PublicationYear = 2015 WHERE BookID = 3;

UPDATE Books SET PublicationYear = 2019 WHERE BookID = 4;

UPDATE Books SET PublicationYear = 2022 WHERE BookID = 5;

UPDATE Books

SET Price = Price \* 1.10

WHERE PublicationYear < 2020;

SELECT \* FROM Books;

DELETE FROM Books

WHERE Genre = 'Outdated Technology';

SELECT \* FROM Books;

**📚 Recently Studied Database Management Tool: Amazon RDS (Relational Database Service)**

✅ **Key Features:**

* **Fully Managed Database Service:** Automates backups, patching, monitoring, and scaling.
* **Supports Multiple Engines:** MySQL, PostgreSQL, SQL Server, Oracle, MariaDB, and Amazon Aurora.
* **High Availability:** Multi-AZ deployments for disaster recovery and automatic failover.
* **Security:** Encryption at rest and in transit, IAM integration, and VPC for network isolation.
* **Automatic Backups and Snapshots:** Very useful for easy restoration and migration.
* **Monitoring and Performance Insights:** Built-in dashboard to monitor database performance in real-time.

✅ **Why it’s used in Industry:**

* It **saves tons of setup and maintenance time** compared to managing databases manually.
* Enterprises trust it for **scalability**, **security**, and **high availability**.
* Works great with other AWS services for **analytics, big data**, and **application hosting**.