

Books Assignment (CRUD Operations)

-- 1. Create the database--

```
CREATE DATABASE LibraryDB;
```

```
USE LibraryDB;
```

-- 2. Create the Book table--

```
CREATE TABLE Book (  
    BookID INT PRIMARY KEY,  
    Title VARCHAR(255),  
    Author VARCHAR(255),  
    Genre VARCHAR(100),  
    Price INT,  
    PublishedYear INT,  
    Stock INT);
```

-- 3. Insert initial book records--

```
INSERT INTO Book (BookID, Title, Author, Genre, Price, PublishedYear, Stock) VALUES  
(1, 'The Alchemist', 'Paulo Coelho', 'Fiction', 300, 1988, 50),  
(2, 'Sapiens', 'Yuval Noah Harari', 'Non-Fiction', 500, 2011, 30),  
(3, 'Atomic Habits', 'James Clear', 'Self-Help', 400, 2018, 25),  
(4, 'Rich Dad Poor Dad', 'Robert Kiyosaki', 'Personal Finance', 350, 1997, 20),  
(5, 'The Lean Startup', 'Eric Ries', 'Business', 450, 2011, 15);
```

-- 1. CRUD Operations--

-- 1.1 Add new book--

```
INSERT INTO Book (BookID, Title, Author, Genre, Price, PublishedYear, Stock)  
VALUES (6, 'Deep Work', 'Cal Newport', 'Self-Help', 420, 2016, 35);
```

-- 1.2 Update Self-Help book prices (+50)--

```
UPDATE Book  
SET Price = Price + 50  
WHERE Genre = 'Self-Help';
```

-- 1.3 Delete book with BookID = 4--

```
DELETE FROM Book  
WHERE BookID = 4;
```

-- 1.4 Read all books sorted by Title--

```
SELECT * FROM Book  
ORDER BY Title ASC;
```

-- 2. Sorting and Filtering--

-- 2.1 Sort by price descending--

```
SELECT * FROM Book  
ORDER BY Price DESC;
```

-- 2.2 Filter by genre = Fiction--

```
SELECT * FROM Book  
WHERE Genre = 'Fiction';
```

-- 2.3 Self-Help books priced above 400--

```
SELECT * FROM Book  
WHERE Genre = 'Self-Help' AND Price > 400;
```

-- 2.4 Fiction OR published after 2000--

```
SELECT * FROM Book  
WHERE Genre = 'Fiction' OR PublishedYear > 2000;
```

-- 3. Aggregation and Grouping--

-- 3.1 Total stock value (Price × Stock)--

```
SELECT SUM(Price * Stock) AS TotalStockValue FROM Book;
```

-- 3.2 Average price by genre--

```
SELECT Genre, AVG(Price) AS AvgPrice  
FROM Book
```

GROUP BY Genre;

-- 3.3 Total books by Paulo Coelho--

```
SELECT COUNT(*) AS BookCount
FROM Book
WHERE Author = 'Paulo Coelho';
```

--4. Conditional and Pattern Matching--

-- 4.1 Titles containing "The"--

```
SELECT * FROM Book
WHERE Title LIKE '%The%';
```

-- 4.2 Books by Yuval Noah Harari priced below 600--

```
SELECT * FROM Book
WHERE Author = 'Yuval Noah Harari' AND Price < 600;
```

-- 4.3 Books priced between 300 and 500--

```
SELECT * FROM Book
WHERE Price BETWEEN 300 AND 500;
```

--5. Advanced Queries--

-- 5.1 Top 3 most expensive books--

```
SELECT * FROM Book
ORDER BY Price DESC
LIMIT 3;
```

-- 5.2 Books published before 2000--

```
SELECT * FROM Book
WHERE PublishedYear < 2000;
```

-- 5.3 Total number of books in each genre--

```
SELECT Genre, COUNT(*) AS BookCount
```

FROM Book

GROUP BY Genre;

-- 5.4 Duplicate titles--

SELECT Title, COUNT(*) AS Count

FROM Book

GROUP BY Title

HAVING COUNT(*) > 1;

--6. Join and Subqueries--

-- 6.1 Author with the most books--

SELECT Author, COUNT(*) AS BookCount

FROM Book

GROUP BY Author

ORDER BY BookCount DESC

LIMIT 1;

-- 6.2 Oldest book by genre--

SELECT Genre, Title, Author, PublishedYear

FROM Book b

WHERE PublishedYear = (

 SELECT MIN(PublishedYear)

 FROM Book b2

 WHERE b2.Genre = b.Genre

)

GROUP BY Genre;