

## **EXPERIMENT - 1, SQL OVERVIEW**

**AIM :** To create and manage a basic book management system using SQL.

1. Create tables Authors and Books using DDL commands.
2. Insert sample records into the tables.
3. Retrieve book titles along with their respective author information using INNER JOIN.

### **OBJECTIVE**

To understand table creation, insertion of records, and retrieval of related data from multiple tables using SQL commands in a relational database management system. Also to implement primary and foreign key constraints to maintain referential integrity.

### **PROCEDURE / ALGORITHM**

1. Start SQL environment (e.g., MySQL, PostgreSQL, etc.).
2. Create Authors and Books tables using CREATE TABLE with proper constraints.
3. Use INSERT INTO to populate both tables with valid records.
4. Write an INNER JOIN query to fetch combined results from both tables.
5. Verify table structure and query results.
6. Capture screenshots of query execution and output.

### **Q1: Create Author and Book Tables using DDL Commands**

#### **Problem Statement :**

You are tasked with designing a basic book management system. Create two tables – Authors and Books – to represent a one-to-many relationship (one author can write multiple books). Use proper primary and foreign key constraints while designing the schema.

### **Query**

```
CREATE TABLE Authors (
```

```
    author_id INT PRIMARY KEY,
```

```
    name VARCHAR(50),
```

```
    country VARCHAR(50)
```

);

CREATE TABLE Books (

book\_id INT PRIMARY KEY,

title VARCHAR(100),

author\_id INT,

FOREIGN KEY (author\_id) REFERENCES Authors(author\_id)

);

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Create Author and Book Tables using DDL Commands

Score: 5 | Difficulty: easy

1

2

3

Problem Statement

You are tasked with designing a basic book management system. Create two tables — **Authors** and **Books** — to represent a one-to-many relationship (one author can write multiple books). Use proper **primary and foreign key constraints** while designing the schema.

Input Format:

Table **Authors** with columns:

- author\_id(INT, Primary Key)
- name (VARCHAR(50))
- country (VARCHAR(50))

Table **Books** with columns:

SQL

Submit

Test & Results

Custom Input

Test Cases

Custom Input

Run Code

Output:

Field	Type	Null	Key	Default	Extra
author_id	int	NO	PRI	NULL	
name	varchar(50)	YES		NULL	
country	varchar(50)	YES		NULL	

Field	Type	Null	Key	Default	Extra
book_id	int	NO	PRI	NULL	
title	varchar(100)	YES		NULL	
author_id	int	YES	MII	NULL	

## **Q2: Insert Sample Records into Author and Book Tables**

### **Problem Statement**

After creating the Authors and Books tables, insert at least 3 authors and 3 books. Ensure the books reference valid authors using the foreign key.

### **Query**

```
INSERT INTO Authors VALUES
```

```
(1, 'Ashish', 'India'),
```

```
(2, 'Smaran', 'USA'),
```

```
(3, 'Vaibhav', 'UK');
```

```
INSERT INTO Books VALUES
```

```
(101, 'Data Science Basics', 1),
```

```
(102, 'AI in Education', 2),
```

```
(103, 'SQL Simplified', 1);
```

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## Insert Sample Records into Author and Book Tables

Score: 5 | Difficulty: easy

1

2

### Problem Statement

After creating the Authors and Books tables, your next task is to insert sample records. Insert **at least 3 authors and 3 books**, ensuring books reference valid authors using the foreign key.

3

### Input Format:

- Pre-existing Authors and Books table structures from Problem 1.

### Output Format:

**Authors** Table:

author_id	name	country
1	Ashish	India
2	Smaran	USA

SQL

Submit

Test &amp; Results

Custom Input

Custom Input

Test Cases

Run Code

Output:

```
+-----+-----+-----+
| author_id | name   | country |
+-----+-----+-----+
|          1 | Ashish | India   |
|          2 | Smaran | USA     |
|          3 | Vaibhav | UK      |
+-----+-----+-----+
+-----+-----+-----+
| book_id | title                | author_id |
+-----+-----+-----+
|      101 | Data Science Basics |          1 |
|      102 | AI in Education      |          2 |
|      103 | SQL Simplified       |          1 |
```

# Q3: Retrieve Book Titles Along with Author Information Using INNER JOIN

## Problem Statement

Retrieve the titles of all books along with their author's name and country using INNER JOIN on the Authors and Books tables.

## Query

```
SELECT b.title, a.name, a.country
FROM Books b
INNER JOIN Authors a ON b.author_id = a.author_id;
```

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1

2

3

102

AI in Education

2

103

SQL Simplified

1

Sample Output

title	name	country
Data Science Basics	Ashish	India
AI in Education	Smaran	USA
SQL Simplified	Ashish	India

Explanation:

- The INNER JOIN links each book's author\_id to the Authors table.
- The result shows the book title along with the author's name and country.
- For example, "SQL Simplified" is written by Ashish from India.

Sample Test Cases

SQL

1 SELECT  
2 Books.title

Test & Results

Submit

Custom Input

Test Cases

Run Code

Output:  

title	name	country
Data Science Basics	Ashish	India
AI in Education	Smaran	USA
SQL Simplified	Ashish	India

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