

# Experiment 1

Subject: ADBMS

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Subject Code:23CSP-333

UID : 23BCC70022

Date: 27<sup>th</sup> July 2025

Section: 23BCC-1

## ➤ Aim:

Author-Book Relationship Using Joins and Basic SQL Operations

1. **Create Author and Book Tables using DDL Commands**
2. **Insert Sample Records into Author and Book Tables**
3. **Retrieve Book Titles Along with Author Information Using INNER JOIN**

## ➤ Theory:

SQL JOIN clauses combine rows from multiple tables based on a related column, typically a primary key linked to a foreign key. After data is separated into different tables through normalization to reduce redundancy, joins are essential for retrieving a complete data set. The ON keyword specifies how the tables are linked.

- **INNER JOIN:** Returns only the records that have matching values in **both** tables.
- **LEFT JOIN:** Returns **all** records from the left table and the matched records from the right table. If there's no match, the right side is NULL.
- **RIGHT JOIN:** Returns **all** records from the right table and the matched records from the left table.
- **FULL JOIN:** It includes all rows from both tables, matching them up where possible. If there is no match for a given row, the columns from the other table will be filled with NULL

## ➤ SQL Queries:

1. To create two tables- authors and books and show their description:

```
create table authors_jayanaath(author_id int primary key, name varchar(50), country varchar(50));
```

```
create table books_jayanaath(book_id int primary key, title varchar(100), author_id int, foreign key(author_id) references authors_jayanaath(author_id));
```

```
desc authors_jayanaath;
```

```
desc books_jayanaath;
```

2. To insert values into authors and books and display the table:

```
insert into authors values(1,'Ashish','India'),(2,'Smaran',  
'USA'),(3,'Vaibhav','UK');
```

```
insert into books values(101,'Data Science Basics',1),(10  
2,'AI in Education',2),(103,'SQL Simplified',1);
```

```
select * from authors;
```

```
select * from books;
```

3. To retrieve the titles of all books along with their author's name and country:

```
select title,name,country from authors a inner join books  
b on a.author_id=b.author_id;
```

## ➤ Result:

The screenshot shows a web-based SQL practice environment. On the left, a sidebar contains a list of steps: 1. Create Author and Book Tables using DDL Commands (selected), 2. Problem Statement, and 3. Input Format. The main area displays the problem statement and input format details. The problem statement asks to create two tables, Authors and Books, with specific constraints. The input format defines the columns and data types for both tables. On the right, a code editor shows the SQL commands used to create the tables and describe them. Below the code editor, a 'Test & Results' section shows a table with test cases, their status, and a link to view details.

**Create Author and Book Tables using DDL Commands**  
Score: 5 | Difficulty: easy

**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:

- book\_id (INT, Primary Key)
- title (VARCHAR(100))
- author\_id (INT, Foreign Key referencing

SQL (MySQL)

```
1 -- Write your Query here
2 create table authors_jayanaath(author_id int primary key, name varchar(50), country varchar(50));
3 create table books_jayanaath(book_id int primary key,title varchar(100),author_id int, foreign key(au
4 desc authors_jayanaath;
5 desc books_jayanaath;
```

Test & Results

Test Case	Status	Test Case Info
Test Case 1	Passed	<a href="#">View Details</a>

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	MUL	NULL	

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### Insert Sample Records into Author and Book Tables

Score: 5 | Difficulty: easy

#### 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.

#### 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
3	Vaibhav	UK

SQL (MySQL)

```
1 -- Write your Query here
2 insert into authors values(1,'Ashish','India'),(2,'Smaran','USA'),(3,'Vaibhav','UK');
3 insert into books values(101,'Data Science Basics',1),(102,'AI in Education',2),(103,'SQL Simplified'
4 select * from authors;
5 select * from books;
6
```

Test & Results

Submit

Custom Input

Test Cases

Test Case	Status	Test Case Info
Test Case 1	Passed	

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

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Retrieve Book Titles Along with Author Information Using INNER JOIN

Score: 5 | Difficulty: easy

1

2

3

Problem Statement

Given two tables, Authors and Books, retrieve the titles of all books along with their **author's name and country**. This involves creating tables, inserting data, and using an INNER JOIN to combine records based on author\_id.

Input Format:

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

Table Authors with columns:

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

Table Books with columns:

- book\_id (INT, Primary Key)
- title (VARCHAR(100))

SQL (MySQL)

```
1 -- Write your Query here
2 select title,name,country from authors a inner join books b on a.author_id=b.author_id;
```

Test & Results

Submit

Output:

```
+-----+-----+-----+
| title          | name   | country |
+-----+-----+-----+
| Data Science Basics | Ashish | India   |
| AI in Education    | Smaran | USA     |
| SQL Simplified     | Ashish | India   |
+-----+-----+-----+
```

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