

# Experiment 1

Subject: ADBMS

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## ➤ 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:

38m

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:

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

SQL

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

Submit

Custom Input

Test Cases

Test Case	Status	Test Case Info
Test Case 1	Passed	

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	

39m

1

2

3

### Insert Sample Records into Author and Book Tables

Score: 51 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

Answer submitted!

```
1
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',3);
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

39m

### 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))

Answer submitted!

SQL

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

Test & Results

Submit

Custom Input

Test Cases

Test Case	Status	Test Case Info
Test Case 1	Passed	

Output:

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