Experiment 1

Subject: ADBMS | Name: Jayanaath S

Subject Code:23CSP-333 | UID : 23BCC70022

Date: 27th 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 k
ey, name varchar(50), country varchar(50));

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

desc authors_jayanaath;
```

```
desc books_jayanaath;
```

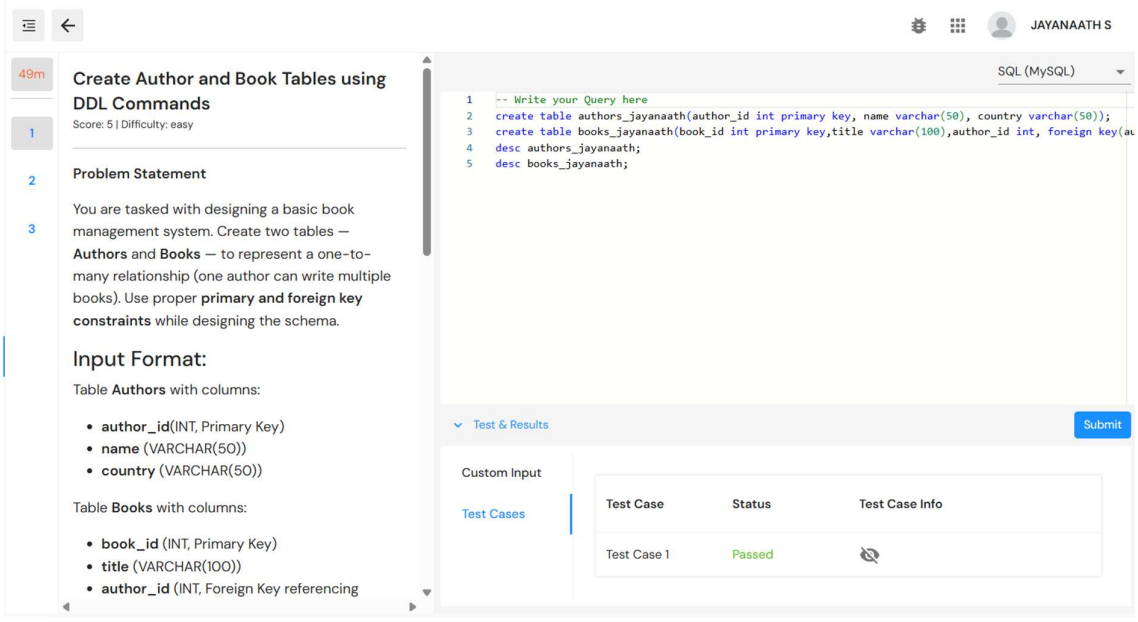
2. To insert values into authors and books and display the table:

```
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:

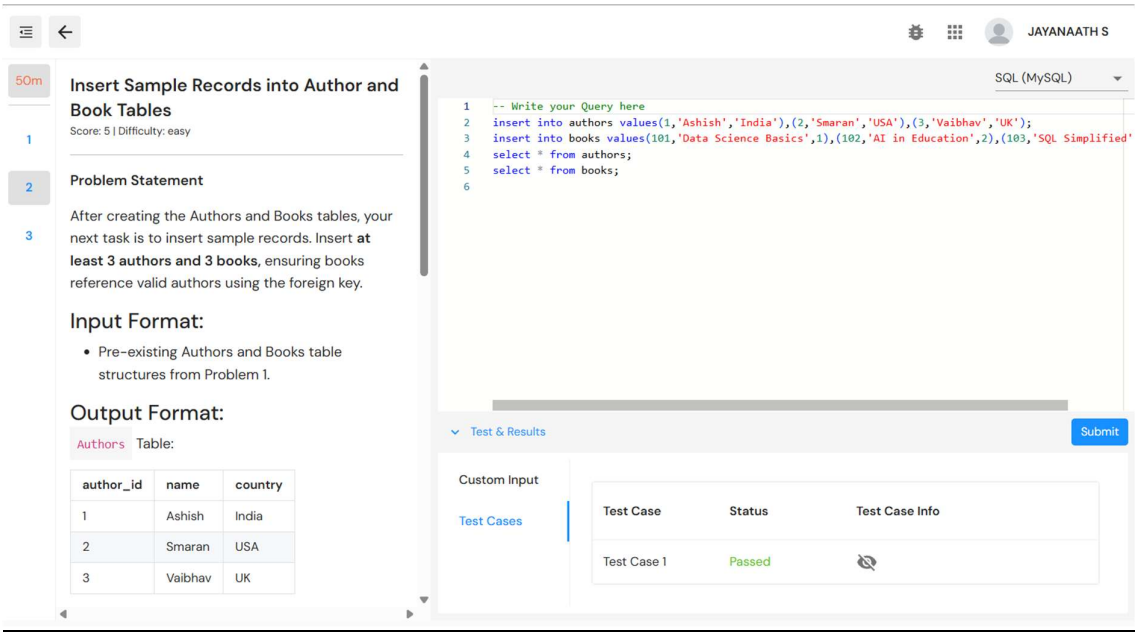
```
select title,name,country from authors a inner join books
 b on a.author_id=b.author_id;
```

➢ Result:



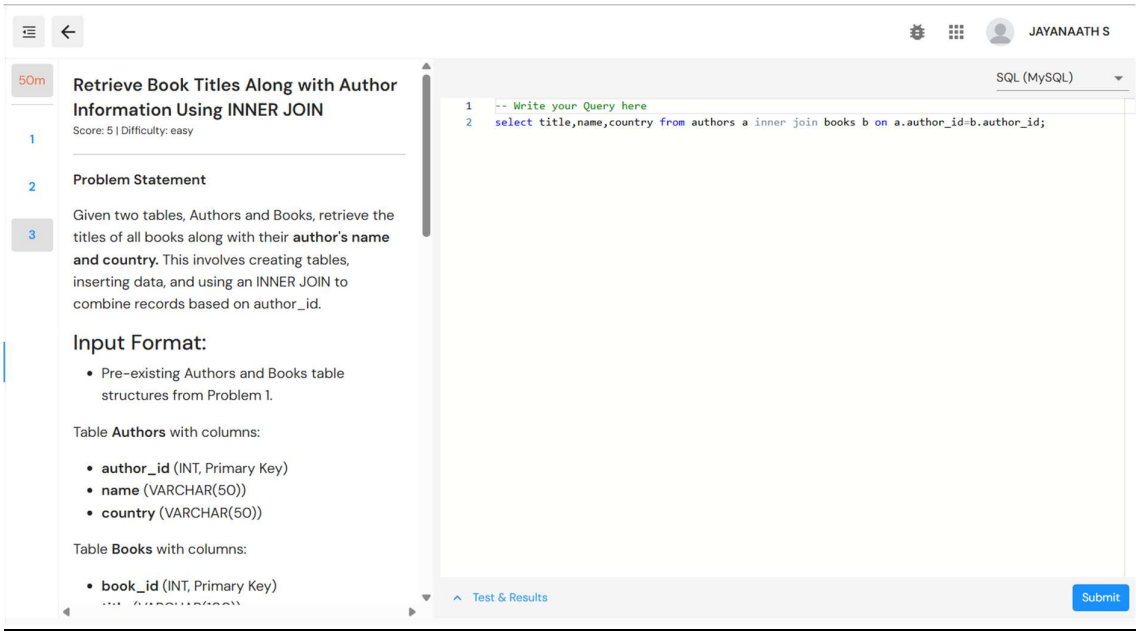
Output:

```
+-----------+--------------+------+-----+---------+-------+
| 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    |       |
+-----------+--------------+------+-----+---------+-------+
```



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 |
+---------+-----------------------+-----------+
```



Output:

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