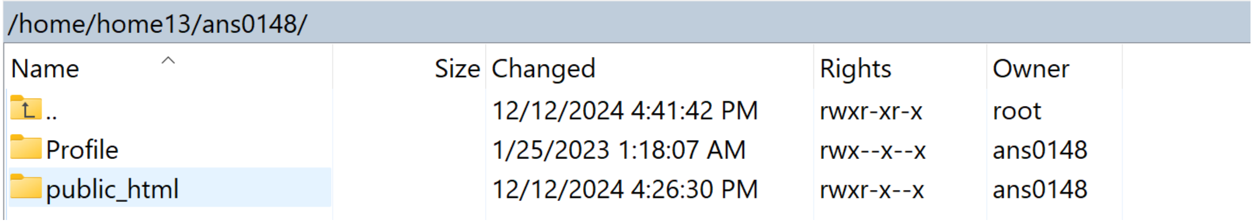
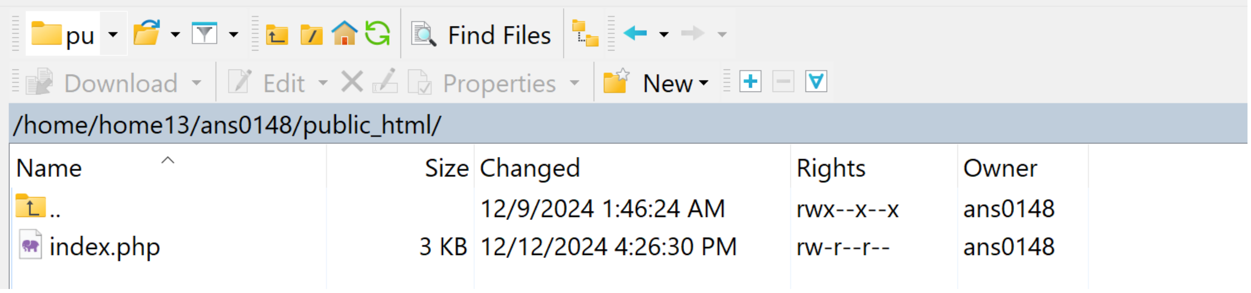
Directory Structure:



/home/home13/ans0148/

Name	Size	Changed	Rights	Owner
..		12/12/2024 4:41:42 PM	rwxr-xr-x	root
Profile		1/25/2023 1:18:07 AM	rwx--x--x	ans0148
public_html		12/12/2024 4:26:30 PM	rwxr-x--x	ans0148

Above screenshot, we can see a file structure, and This is the folder where we are required to upload our PHP and HTML files (as stated in the term project. (Used the WinSCP tool to upload it)

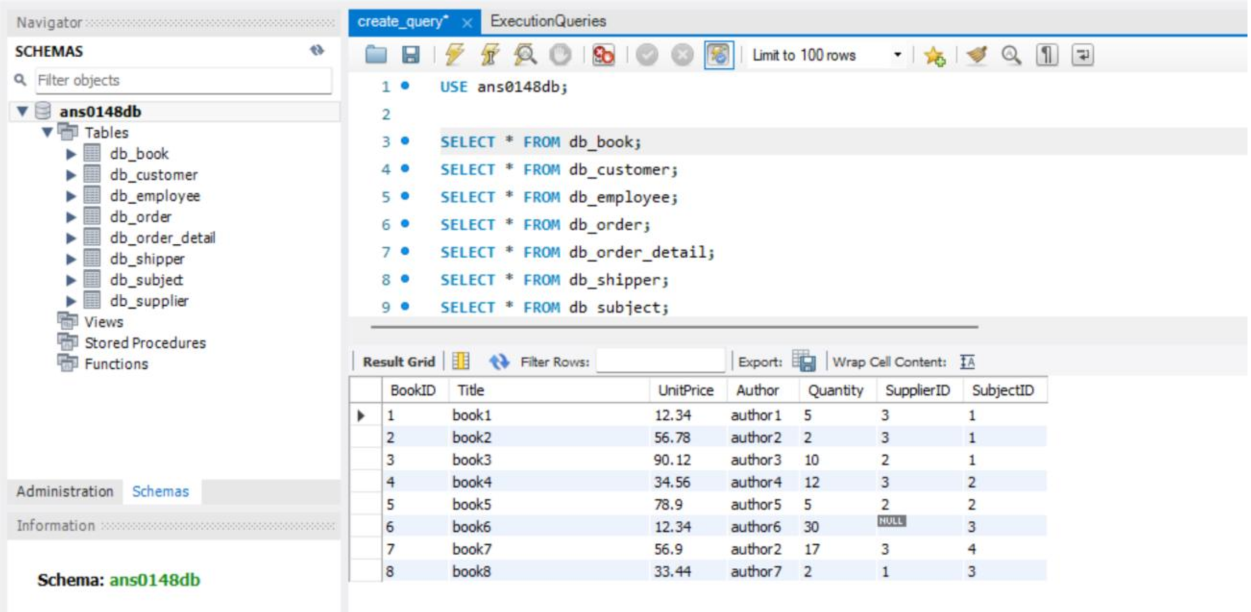


/home/home13/ans0148/public_html/

Name	Size	Changed	Rights	Owner
..		12/9/2024 1:46:24 AM	rwx--x--x	ans0148
index.php	3 KB	12/12/2024 4:26:30 PM	rw-r--r--	ans0148

As I have one PHP file and in the screenshot we can that index.php file is placed under the public_html. (used the WinSCP tool)

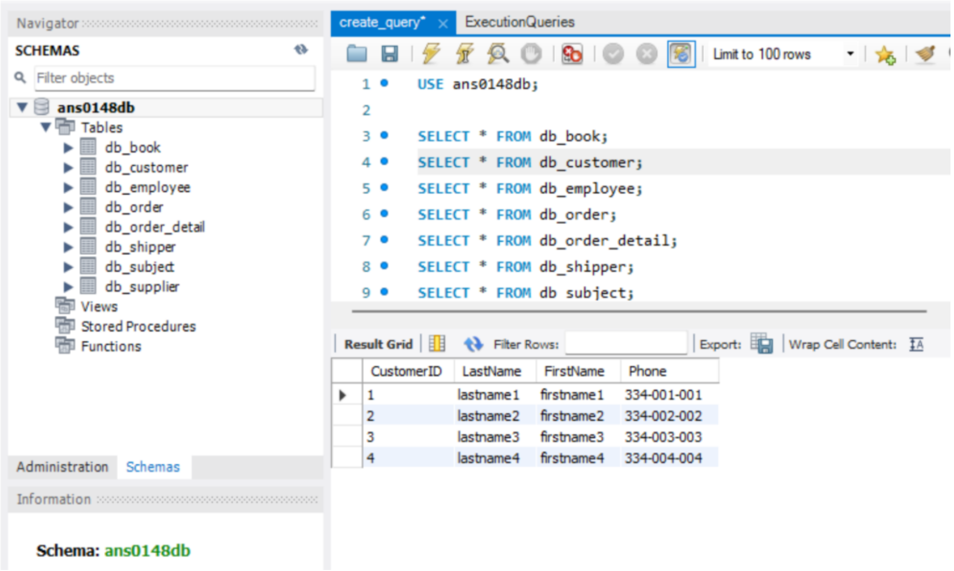
Populating the bookstore database with MySQL:



Schema: ans0148db

```
USE ans0148db;

SELECT * FROM db_book;
SELECT * FROM db_customer;
SELECT * FROM db_employee;
SELECT * FROM db_order;
SELECT * FROM db_order_detail;
SELECT * FROM db_shipper;
SELECT * FROM db subject;
```

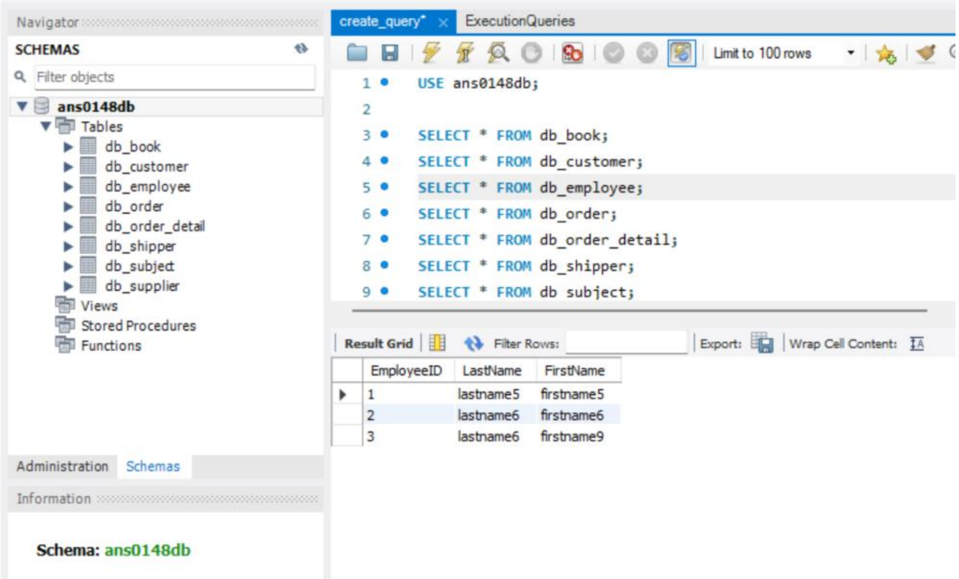
BookID	Title	UnitPrice	Author	Quantity	SupplierID	SubjectID
1	book1	12.34	author1	5	3	1
2	book2	56.78	author2	2	3	1
3	book3	90.12	author3	10	2	1
4	book4	34.56	author4	12	3	2
5	book5	78.9	author5	5	2	2
6	book6	12.34	author6	30	NULL	3
7	book7	56.9	author2	17	3	4
8	book8	33.44	author7	2	1	3



```
USE ans0148db;

SELECT * FROM db_book;
SELECT * FROM db_customer;
SELECT * FROM db_employee;
SELECT * FROM db_order;
SELECT * FROM db_order_detail;
SELECT * FROM db_shipper;
SELECT * FROM db subject;
```

CustomerID	LastName	FirstName	Phone
1	lastname1	firstname1	334-001-001
2	lastname2	firstname2	334-002-002
3	lastname3	firstname3	334-003-003
4	lastname4	firstname4	334-004-004

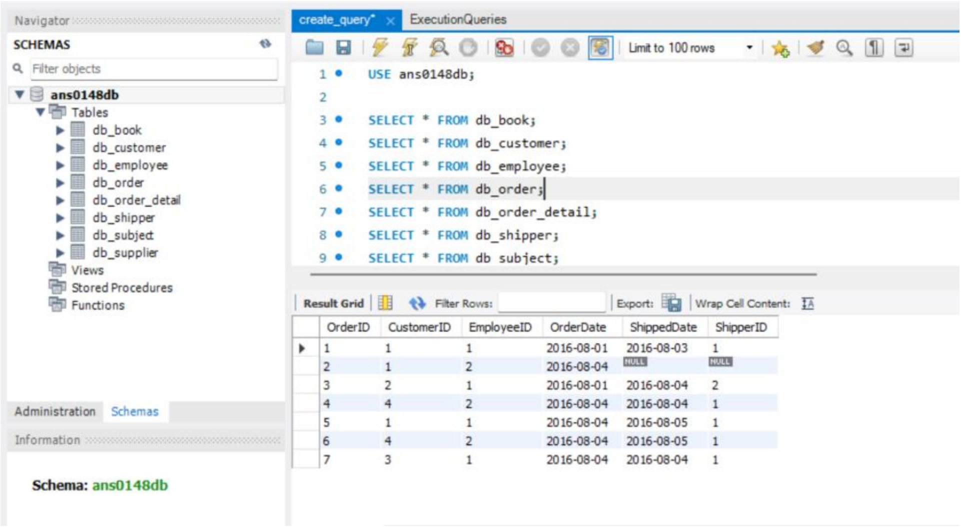
Schema: ans0148db



```
USE ans0148db;

SELECT * FROM db_book;
SELECT * FROM db_customer;
SELECT * FROM db_employee;
SELECT * FROM db_order;
SELECT * FROM db_order_detail;
SELECT * FROM db_shipper;
SELECT * FROM db subject;
```

EmployeeID	LastName	FirstName
1	lastname5	firstname5
2	lastname6	firstname6
3	lastname6	firstname9

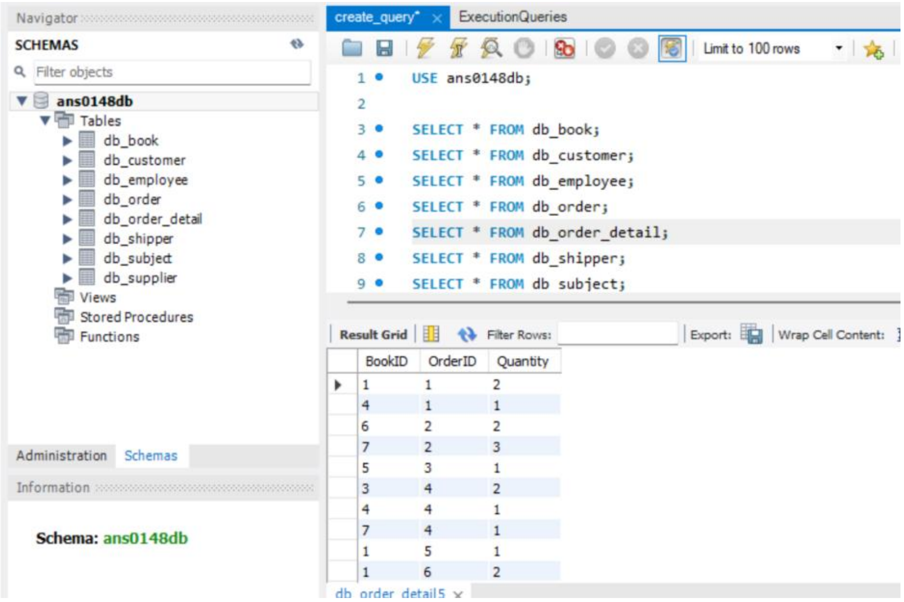
Schema: ans0148db



```
USE ans0148db;

SELECT * FROM db_book;
SELECT * FROM db_customer;
SELECT * FROM db_employee;
SELECT * FROM db_order;
SELECT * FROM db_order_detail;
SELECT * FROM db_shipper;
SELECT * FROM db subject;
```

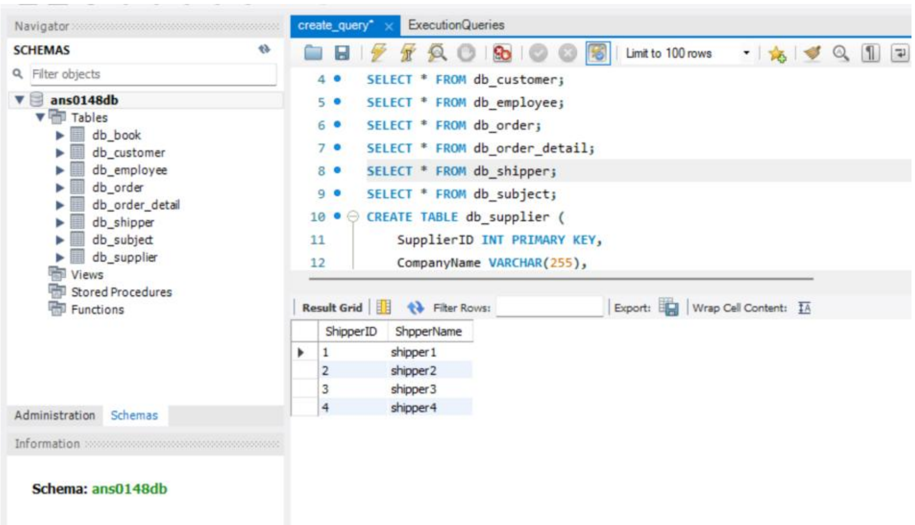
OrderID	CustomerID	EmployeeID	OrderDate	ShippedDate	ShipperID
1	1	1	2016-08-01	2016-08-03	1
2	1	2	2016-08-04	NULL	NULL
3	2	1	2016-08-01	2016-08-04	2
4	4	2	2016-08-04	2016-08-04	1
5	1	1	2016-08-04	2016-08-05	1
6	4	2	2016-08-04	2016-08-05	1
7	3	1	2016-08-04	2016-08-04	1

Schema: ans0148db



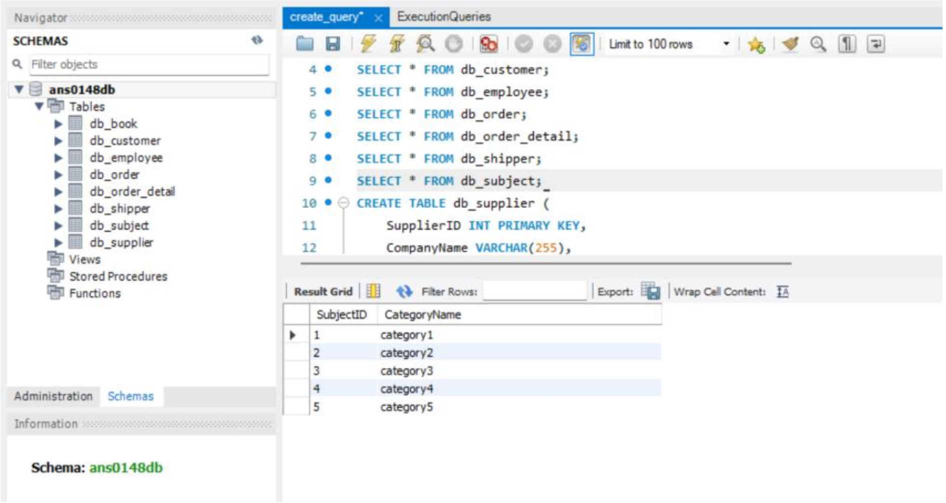
```sql
USE ans0148db;

 SELECT * FROM db_book;
 SELECT * FROM db_customer;
 SELECT * FROM db_employee;
 SELECT * FROM db_order;
 SELECT * FROM db_order_detail;
 SELECT * FROM db_shipper;
 SELECT * FROM db_subject;
```

BookID	OrderID	Quantity
1	1	2
4	1	1
6	2	2
7	2	3
5	3	1
3	4	2
4	4	1
7	4	1
1	5	1
1	6	2



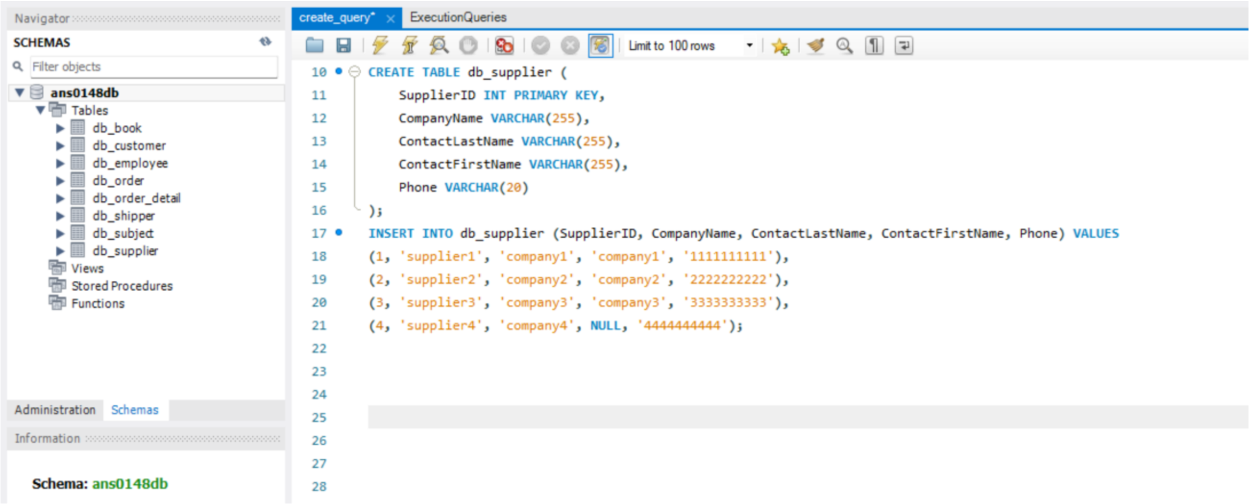
```sql
SELECT * FROM db_customer;
SELECT * FROM db_employee;
SELECT * FROM db_order;
SELECT * FROM db_order_detail;
SELECT * FROM db_shipper;
SELECT * FROM db_subject;
CREATE TABLE db_supplier (
    SupplierID INT PRIMARY KEY,
    CompanyName VARCHAR(255),
```

ShipperID	ShpperName
1	shipper1
2	shipper2
3	shipper3
4	shipper4



```sql
SELECT * FROM db_customer;
SELECT * FROM db_employee;
SELECT * FROM db_order;
SELECT * FROM db_order_detail;
SELECT * FROM db_shipper;
SELECT * FROM db_subject;
CREATE TABLE db_supplier (
    SupplierID INT PRIMARY KEY,
    CompanyName VARCHAR(255),
```

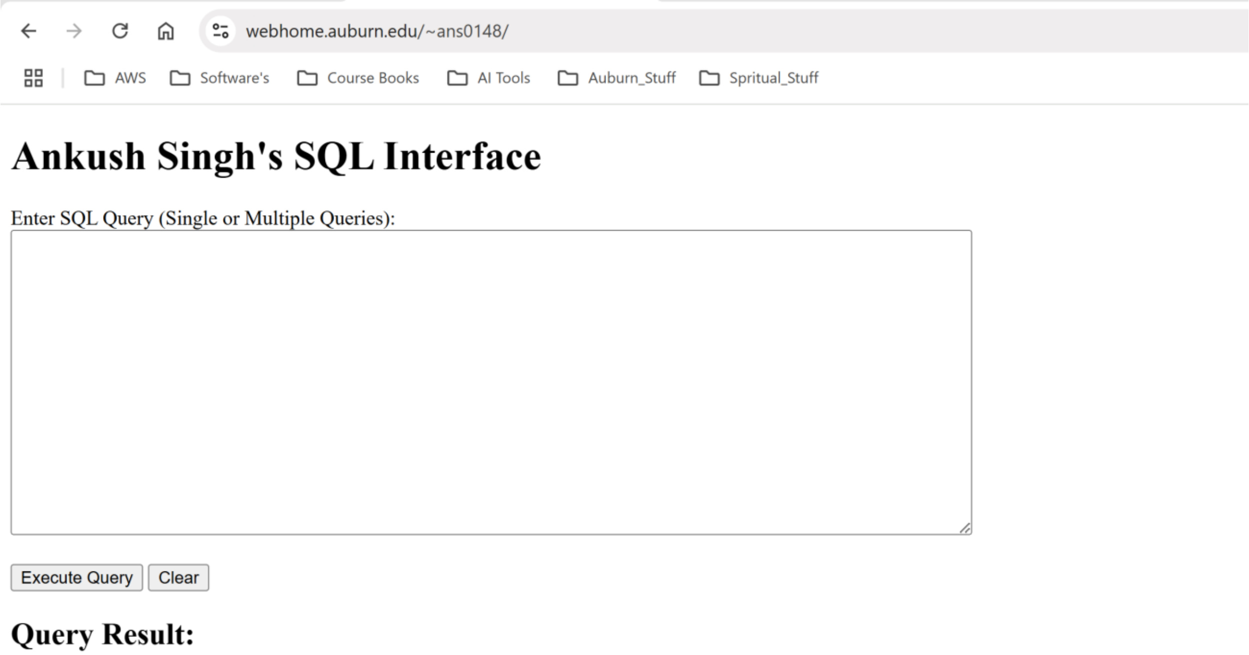
SubjectID	CategoryName
1	category1
2	category2
3	category3
4	category4
5	category5



```
CREATE TABLE db_supplier (
    SupplierID INT PRIMARY KEY,
    CompanyName VARCHAR(255),
    ContactLastName VARCHAR(255),
    ContactFirstName VARCHAR(255),
    Phone VARCHAR(20)
);
INSERT INTO db_supplier (SupplierID, CompanyName, ContactLastName, ContactFirstName, Phone) VALUES
(1, 'supplier1', 'company1', 'company1', '1111111111'),
(2, 'supplier2', 'company2', 'company2', '2222222222'),
(3, 'supplier3', 'company3', 'company3', '3333333333'),
(4, 'supplier4', 'company4', NULL, '4444444444');
```

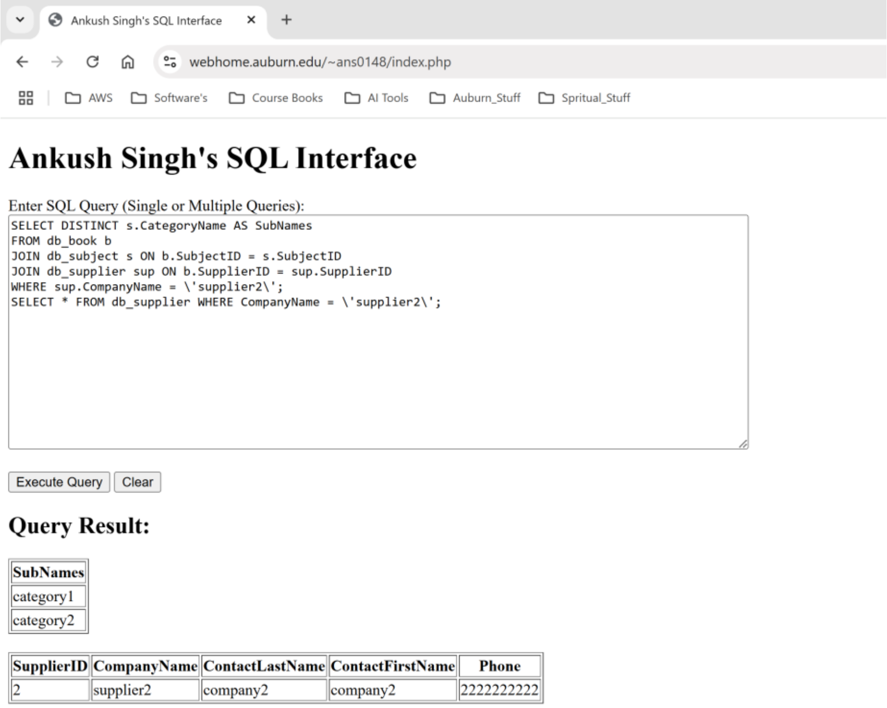
From the above screenshots we can see that, I simply created and populated a database for an online bookstore using MySQL. The schema included tables like db_supplier, which was populated with sample data using INSERT statements. To validate the data, I executed SELECT queries for all tables, confirming successful population. Additionally, I integrated .css files to enhance the user interface, ensuring a functional and visually appealing database system ready for front-end integration.

Created a simple web interface using PHP and HTML to query the data:


webhome.auburn.edu/~ans0148/
AWS
Software's
Course Books
AI Tools
Auburn_Stuff
Spritual_Stuff
Ankush Singh's SQL Interface
Enter SQL Query (Single or Multiple Queries):
Execute Query
Clear
Query Result:

SQL statements for the queries given and used them to test mine web service.

Query 1:



Ankush Singh's SQL Interface

Enter SQL Query (Single or Multiple Queries):

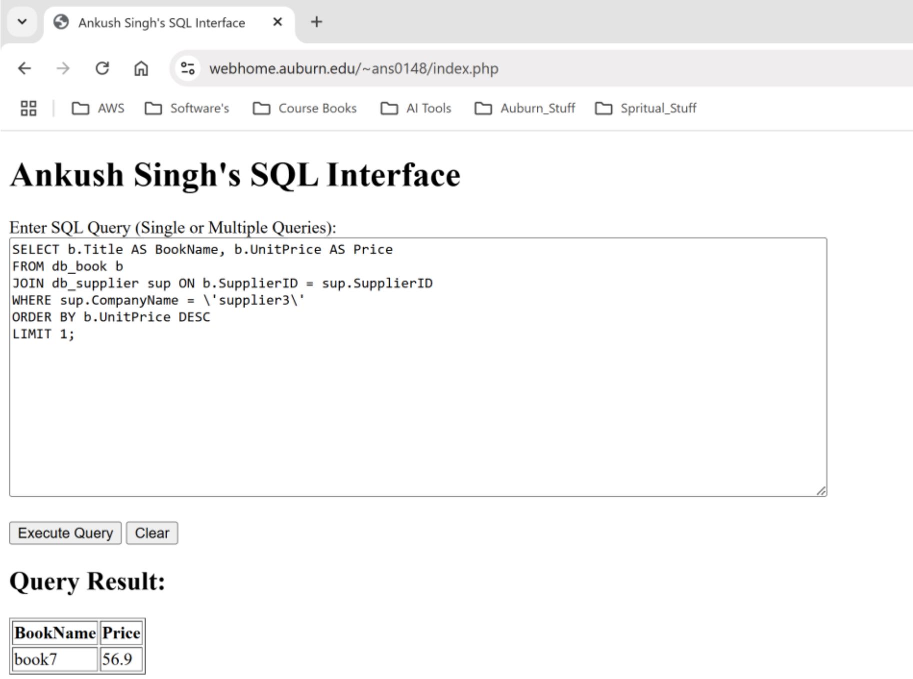
```
SELECT DISTINCT s.CategoryName AS SubNames
FROM db_book b
JOIN db_subject s ON b.SubjectID = s.SubjectID
JOIN db_supplier sup ON b.SupplierID = sup.SupplierID
WHERE sup.CompanyName = \'supplier2\';
SELECT * FROM db_supplier WHERE CompanyName = \'supplier2\';
```

Query Result:

SubNames
category1
category2

SupplierID	CompanyName	ContactLastName	ContactFirstName	Phone
2	supplier2	company2	company2	2222222222

Query 2:



Ankush Singh's SQL Interface

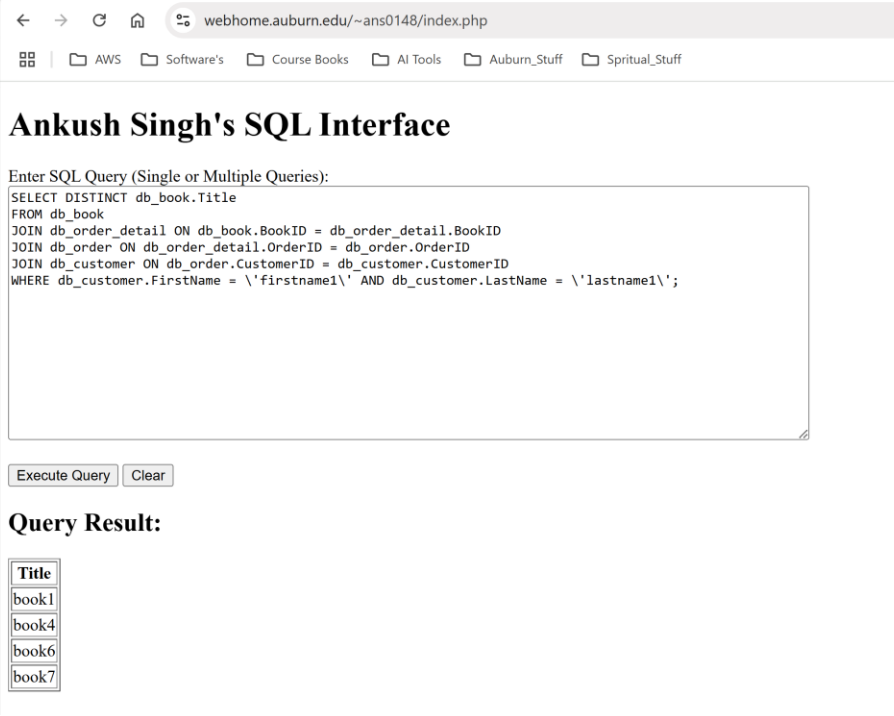
Enter SQL Query (Single or Multiple Queries):

```
SELECT b.Title AS BookName, b.UnitPrice AS Price
FROM db_book b
JOIN db_supplier sup ON b.SupplierID = sup.SupplierID
WHERE sup.CompanyName = \'supplier3\'
ORDER BY b.UnitPrice DESC
LIMIT 1;
```

Query Result:

BookName	Price
book7	56.9

Query 3:



Ankush Singh's SQL Interface

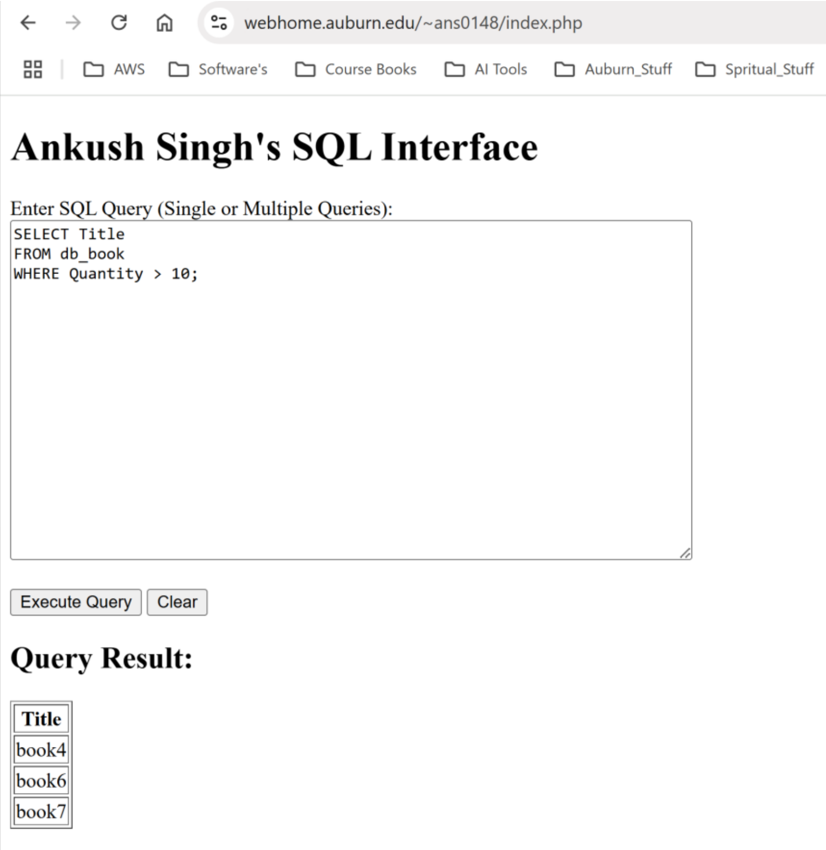
Enter SQL Query (Single or Multiple Queries):

```
SELECT DISTINCT db_book.Title
FROM db_book
JOIN db_order_detail ON db_book.BookID = db_order_detail.BookID
JOIN db_order ON db_order_detail.OrderID = db_order.OrderID
JOIN db_customer ON db_order.CustomerID = db_customer.CustomerID
WHERE db_customer.FirstName = \'firstname1\' AND db_customer.LastName = \'lastname1\';
```

Query Result:

Title
book1
book4
book6
book7

Query 4:



Ankush Singh's SQL Interface

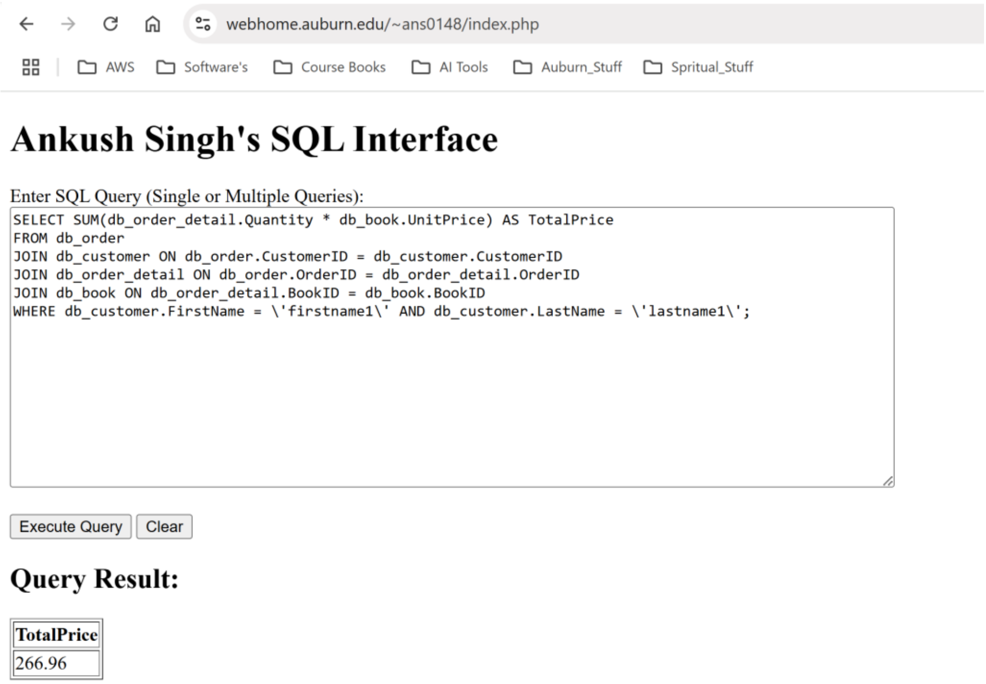
Enter SQL Query (Single or Multiple Queries):

```
SELECT Title
FROM db_book
WHERE Quantity > 10;
```

Query Result:

Title
book4
book6
book7

Query 5:



Ankush Singh's SQL Interface

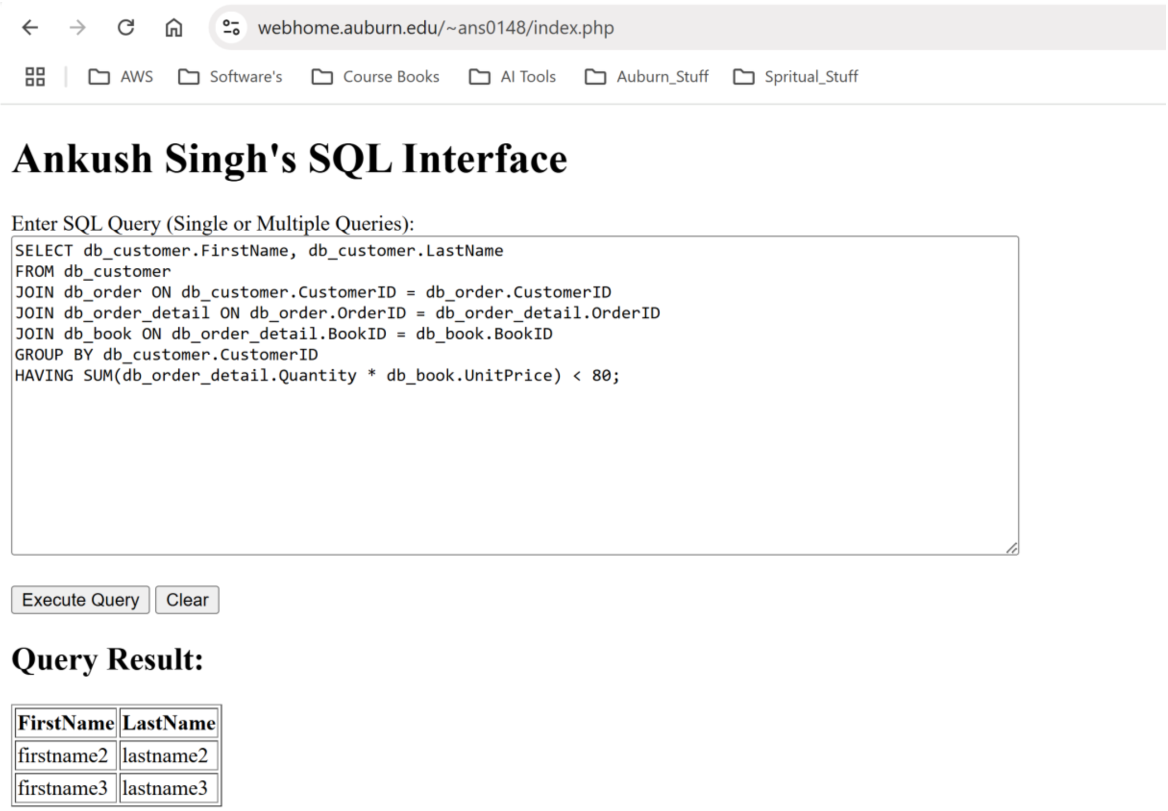
Enter SQL Query (Single or Multiple Queries):

```
SELECT SUM(db_order_detail.Quantity * db_book.UnitPrice) AS TotalPrice
FROM db_order
JOIN db_customer ON db_order.CustomerID = db_customer.CustomerID
JOIN db_order_detail ON db_order.OrderID = db_order_detail.OrderID
JOIN db_book ON db_order_detail.BookID = db_book.BookID
WHERE db_customer.FirstName = \'firstname1\' AND db_customer.LastName = \'lastname1\';
```

Query Result:

TotalPrice
266.96

Query 6:



Ankush Singh's SQL Interface

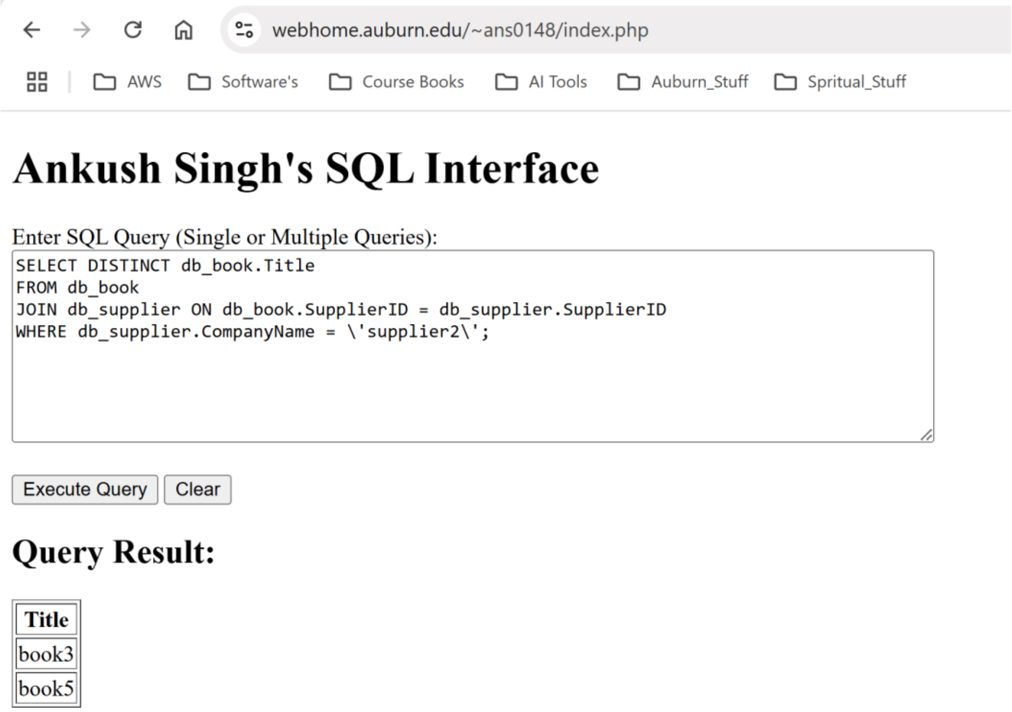
Enter SQL Query (Single or Multiple Queries):

```
SELECT db_customer.FirstName, db_customer.LastName
FROM db_customer
JOIN db_order ON db_customer.CustomerID = db_order.CustomerID
JOIN db_order_detail ON db_order.OrderID = db_order_detail.OrderID
JOIN db_book ON db_order_detail.BookID = db_book.BookID
GROUP BY db_customer.CustomerID
HAVING SUM(db_order_detail.Quantity * db_book.UnitPrice) < 80;
```

Query Result:

FirstName	LastName
firstname2	lastname2
firstname3	lastname3

Query 7:



Ankush Singh's SQL Interface

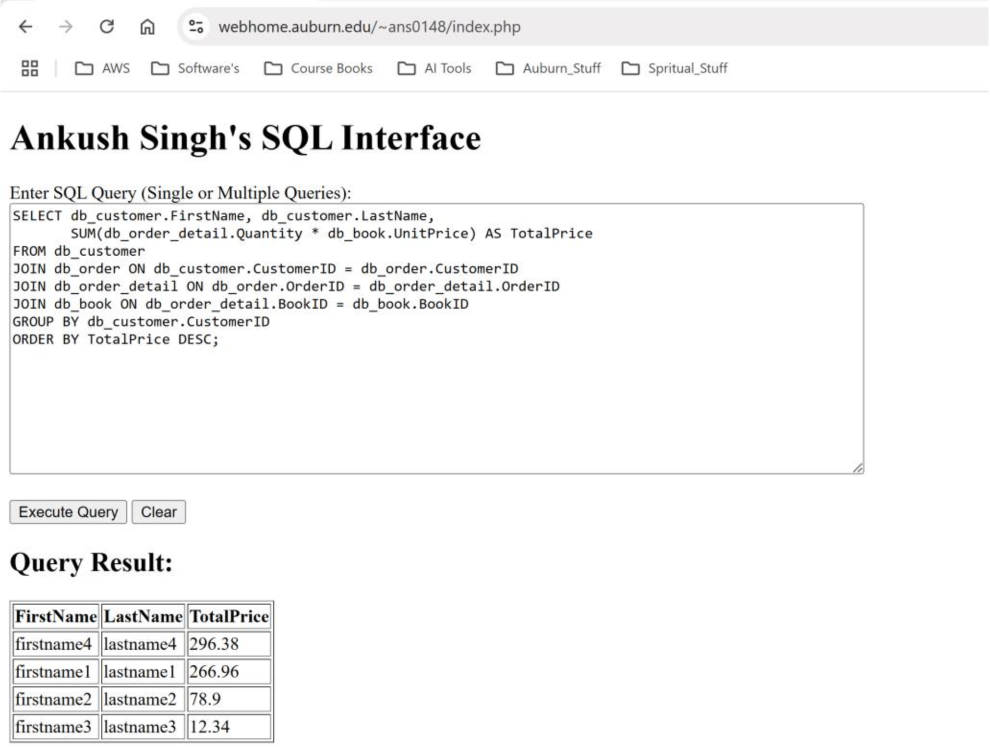
Enter SQL Query (Single or Multiple Queries):

```
SELECT DISTINCT db_book.Title
FROM db_book
JOIN db_supplier ON db_book.SupplierID = db_supplier.SupplierID
WHERE db_supplier.CompanyName = \'supplier2\';
```

Query Result:

Title
book3
book5

Query 8:



Ankush Singh's SQL Interface

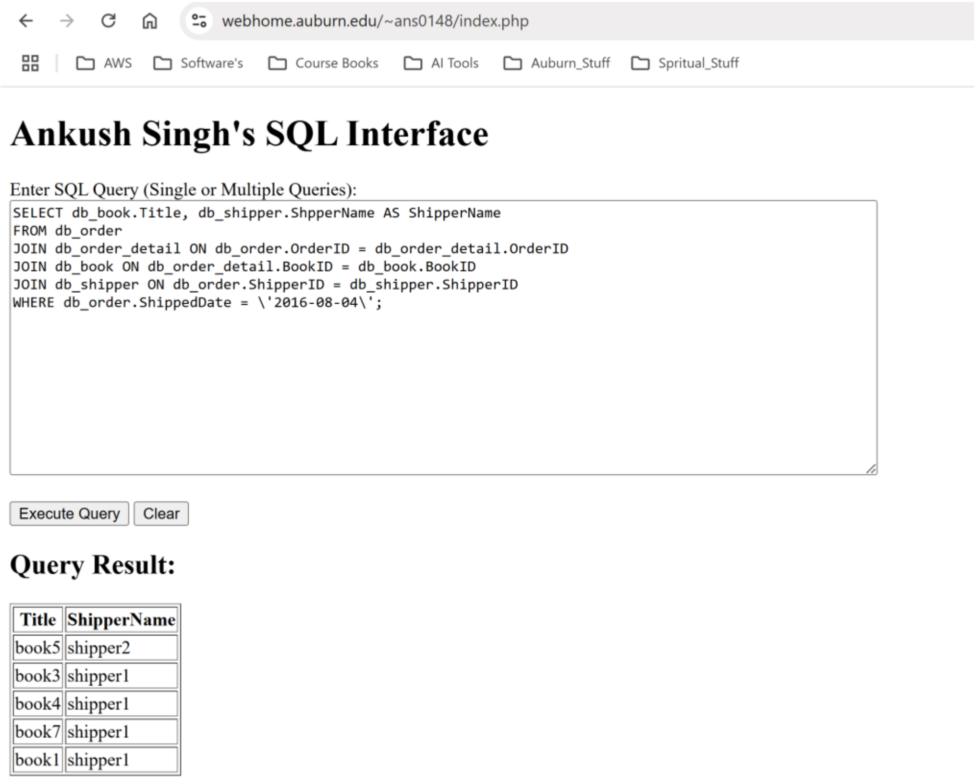
Enter SQL Query (Single or Multiple Queries):

```
SELECT db_customer.FirstName, db_customer.LastName,
       SUM(db_order_detail.Quantity * db_book.UnitPrice) AS TotalPrice
FROM db_customer
JOIN db_order ON db_customer.CustomerID = db_order.CustomerID
JOIN db_order_detail ON db_order.OrderID = db_order_detail.OrderID
JOIN db_book ON db_order_detail.BookID = db_book.BookID
GROUP BY db_customer.CustomerID
ORDER BY TotalPrice DESC;
```

Query Result:

FirstName	LastName	TotalPrice
firstname4	lastname4	296.38
firstname1	lastname1	266.96
firstname2	lastname2	78.9
firstname3	lastname3	12.34

Query 9:



Ankush Singh's SQL Interface

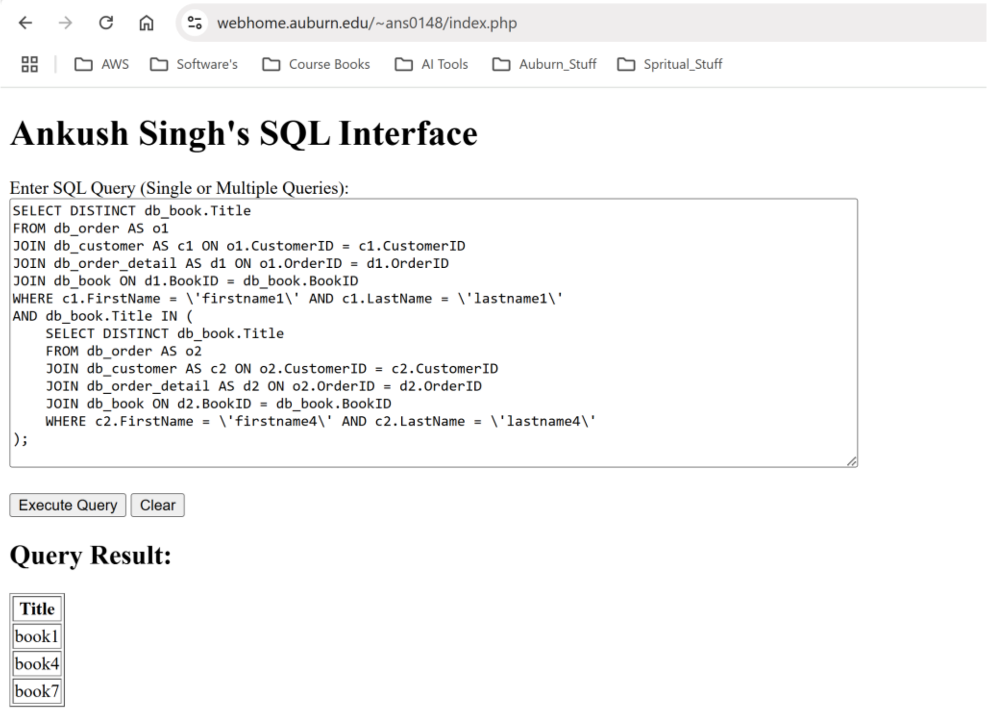
Enter SQL Query (Single or Multiple Queries):

```
SELECT db_book.Title, db_shipper.ShpperName AS ShipperName
FROM db_order
JOIN db_order_detail ON db_order.OrderID = db_order_detail.OrderID
JOIN db_book ON db_order_detail.BookID = db_book.BookID
JOIN db_shipper ON db_order.ShipperID = db_shipper.ShipperID
WHERE db_order.ShippedDate = \'2016-08-04\';
```

Query Result:

Title	ShipperName
book5	shipper2
book3	shipper1
book4	shipper1
book7	shipper1
book1	shipper1

Query 10:



Ankush Singh's SQL Interface

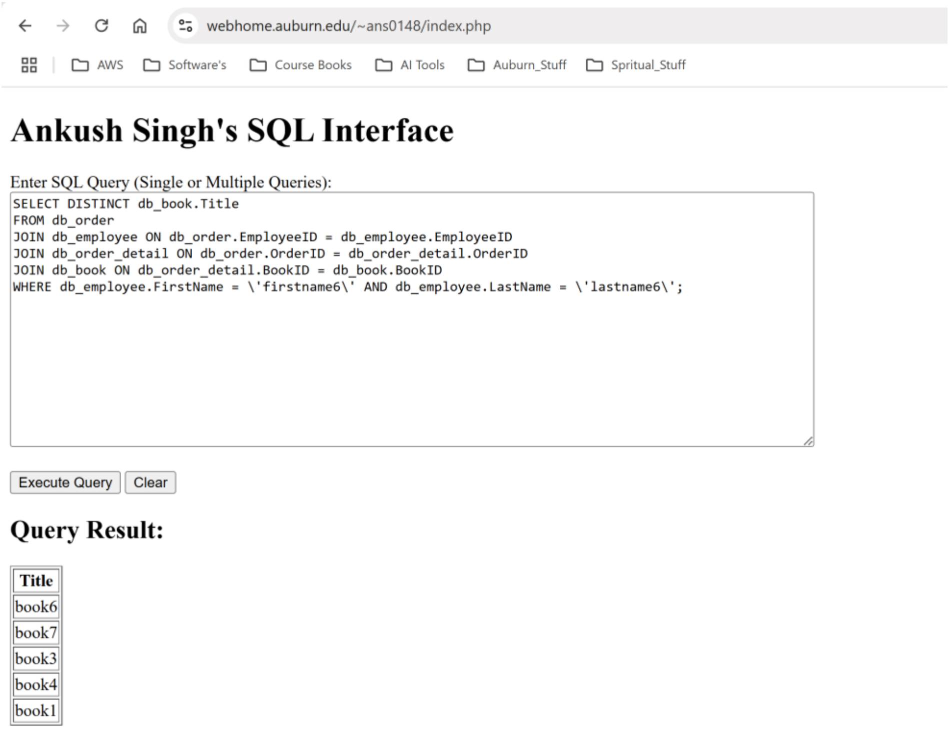
Enter SQL Query (Single or Multiple Queries):

```
SELECT DISTINCT db_book.Title
FROM db_order AS o1
JOIN db_customer AS c1 ON o1.CustomerID = c1.CustomerID
JOIN db_order_detail AS d1 ON o1.OrderID = d1.OrderID
JOIN db_book ON d1.BookID = db_book.BookID
WHERE c1.FirstName = \'firstname1\' AND c1.LastName = \'lastname1\'
AND db_book.Title IN (
    SELECT DISTINCT db_book.Title
    FROM db_order AS o2
    JOIN db_customer AS c2 ON o2.CustomerID = c2.CustomerID
    JOIN db_order_detail AS d2 ON o2.OrderID = d2.OrderID
    JOIN db_book ON d2.BookID = db_book.BookID
    WHERE c2.FirstName = \'firstname4\' AND c2.LastName = \'lastname4\'
);
```

Query Result:

Title
book1
book4
book7

Query 11:



Ankush Singh's SQL Interface

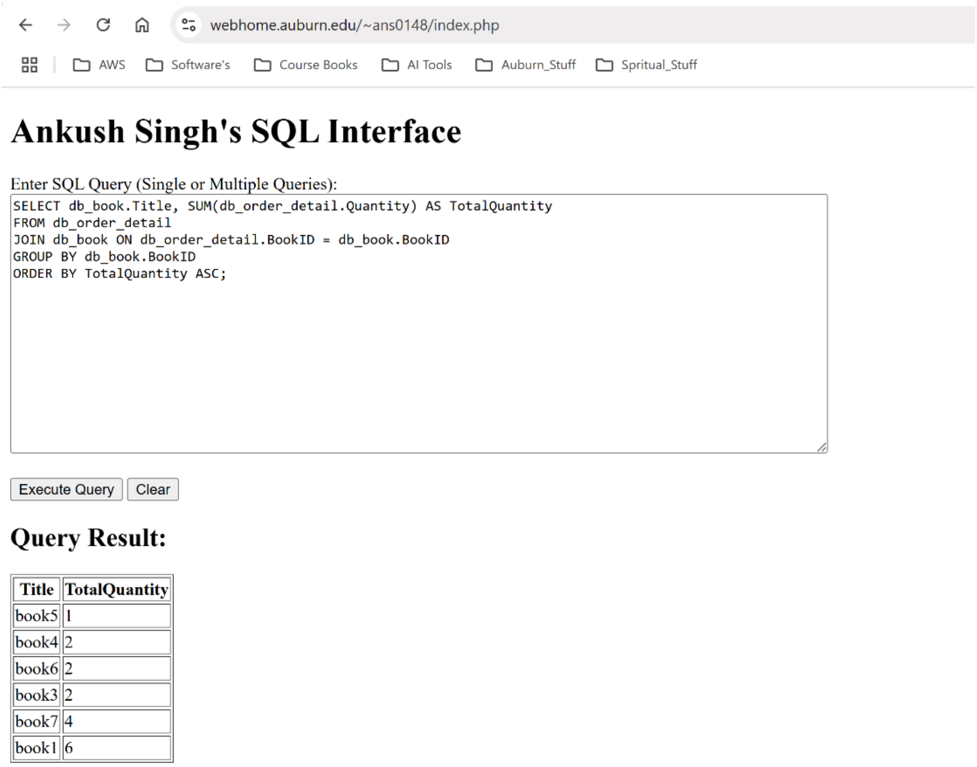
Enter SQL Query (Single or Multiple Queries):

```
SELECT DISTINCT db_book.Title
FROM db_order
JOIN db_employee ON db_order.EmployeeID = db_employee.EmployeeID
JOIN db_order_detail ON db_order.OrderID = db_order_detail.OrderID
JOIN db_book ON db_order_detail.BookID = db_book.BookID
WHERE db_employee.FirstName = \'firstname6\' AND db_employee.LastName = \'lastname6\';
```

Query Result:

Title
book6
book7
book3
book4
book1

Query 12:



Ankush Singh's SQL Interface

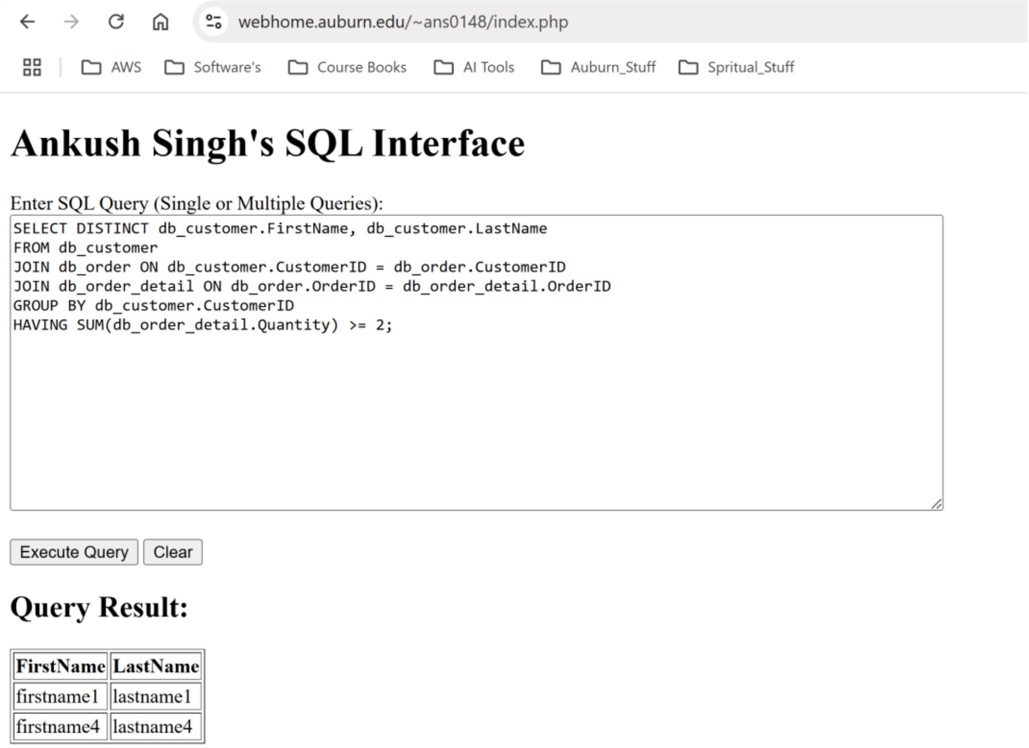
Enter SQL Query (Single or Multiple Queries):

```
SELECT db_book.Title, SUM(db_order_detail.Quantity) AS TotalQuantity
FROM db_order_detail
JOIN db_book ON db_order_detail.BookID = db_book.BookID
GROUP BY db_book.BookID
ORDER BY TotalQuantity ASC;
```

Query Result:

Title	TotalQuantity
book5	1
book4	2
book6	2
book3	2
book7	4
book1	6

Query 13:



Ankush Singh's SQL Interface

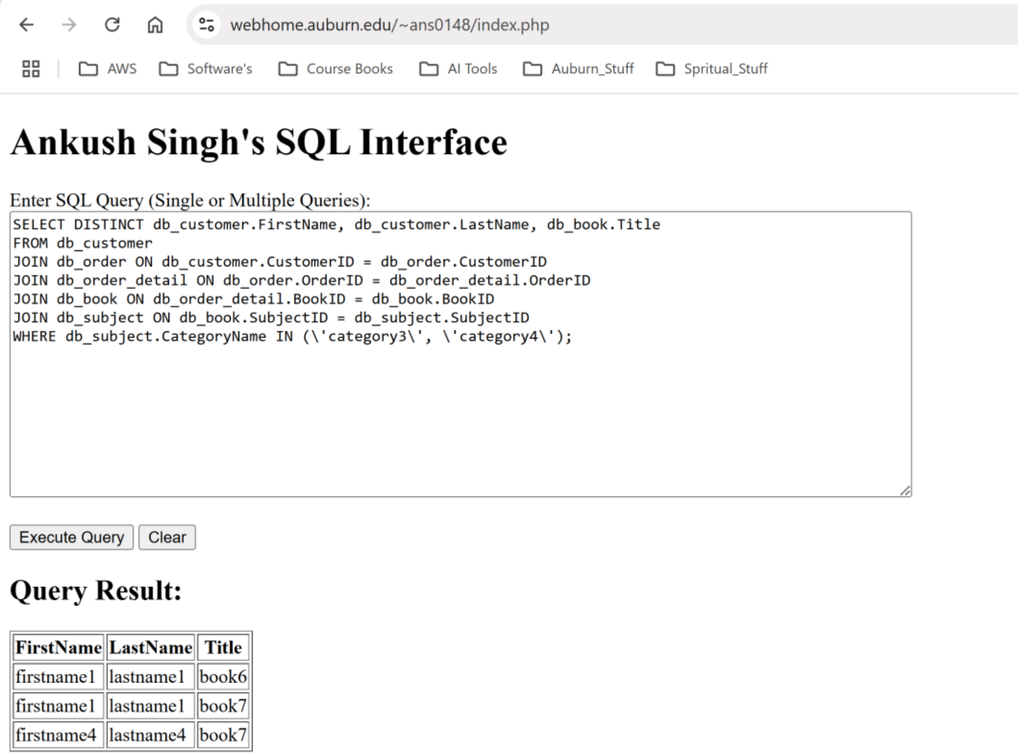
Enter SQL Query (Single or Multiple Queries):

```
SELECT DISTINCT db_customer.FirstName, db_customer.LastName
FROM db_customer
JOIN db_order ON db_customer.CustomerID = db_order.CustomerID
JOIN db_order_detail ON db_order.OrderID = db_order_detail.OrderID
GROUP BY db_customer.CustomerID
HAVING SUM(db_order_detail.Quantity) >= 2;
```

Query Result:

FirstName	LastName
firstname1	lastname1
firstname4	lastname4

Query 14:



Ankush Singh's SQL Interface

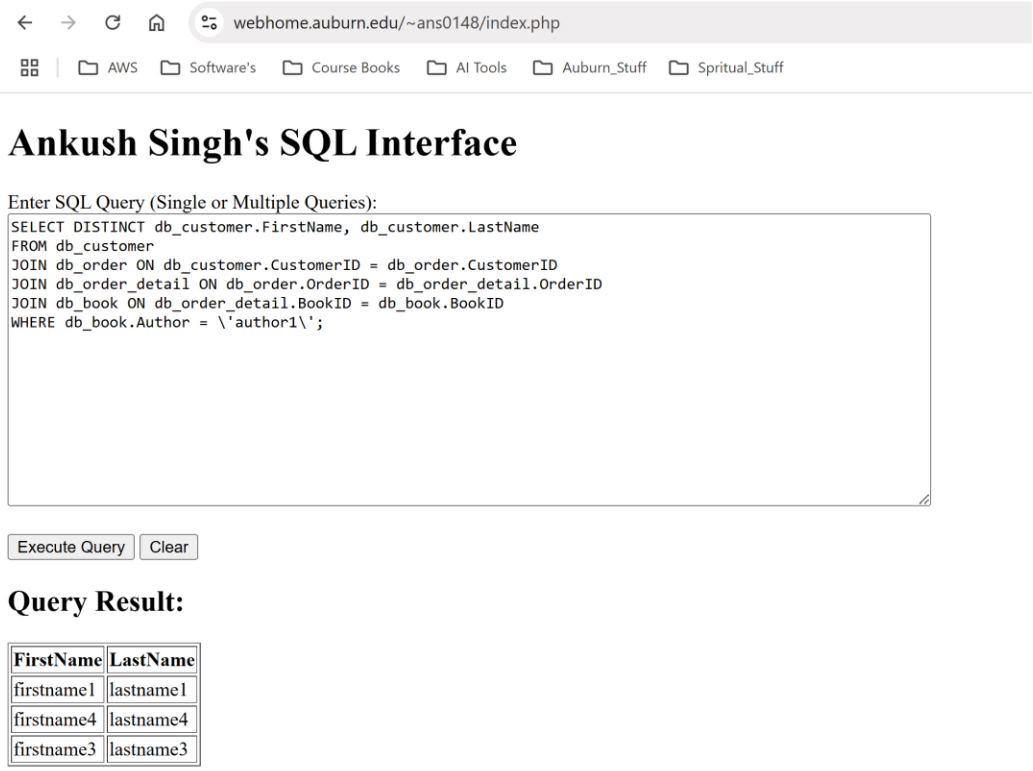
Enter SQL Query (Single or Multiple Queries):

```
SELECT DISTINCT db_customer.FirstName, db_customer.LastName, db_book.Title
FROM db_customer
JOIN db_order ON db_customer.CustomerID = db_order.CustomerID
JOIN db_order_detail ON db_order.OrderID = db_order_detail.OrderID
JOIN db_book ON db_order_detail.BookID = db_book.BookID
JOIN db_subject ON db_book.SubjectID = db_subject.SubjectID
WHERE db_subject.CategoryName IN (\'category3\', \'category4\');
```

Query Result:

FirstName	LastName	Title
firstname1	lastname1	book6
firstname1	lastname1	book7
firstname4	lastname4	book7

Query 15:



Ankush Singh's SQL Interface

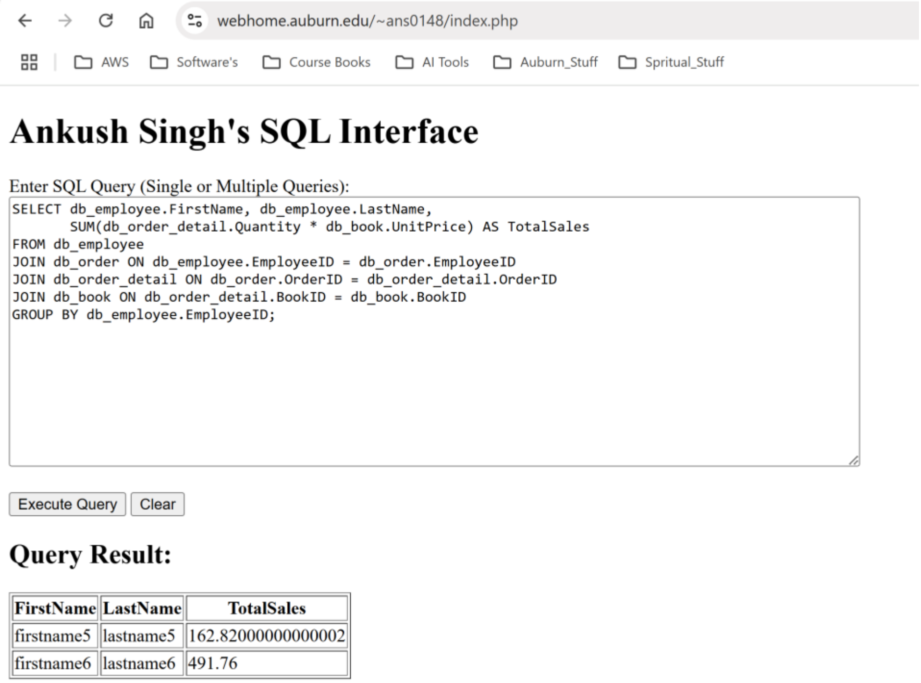
Enter SQL Query (Single or Multiple Queries):

```
SELECT DISTINCT db_customer.FirstName, db_customer.LastName
FROM db_customer
JOIN db_order ON db_customer.CustomerID = db_order.CustomerID
JOIN db_order_detail ON db_order.OrderID = db_order_detail.OrderID
JOIN db_book ON db_order_detail.BookID = db_book.BookID
WHERE db_book.Author = \'author1\';
```

Query Result:

FirstName	LastName
firstname1	lastname1
firstname4	lastname4
firstname3	lastname3

Query 16:



Ankush Singh's SQL Interface

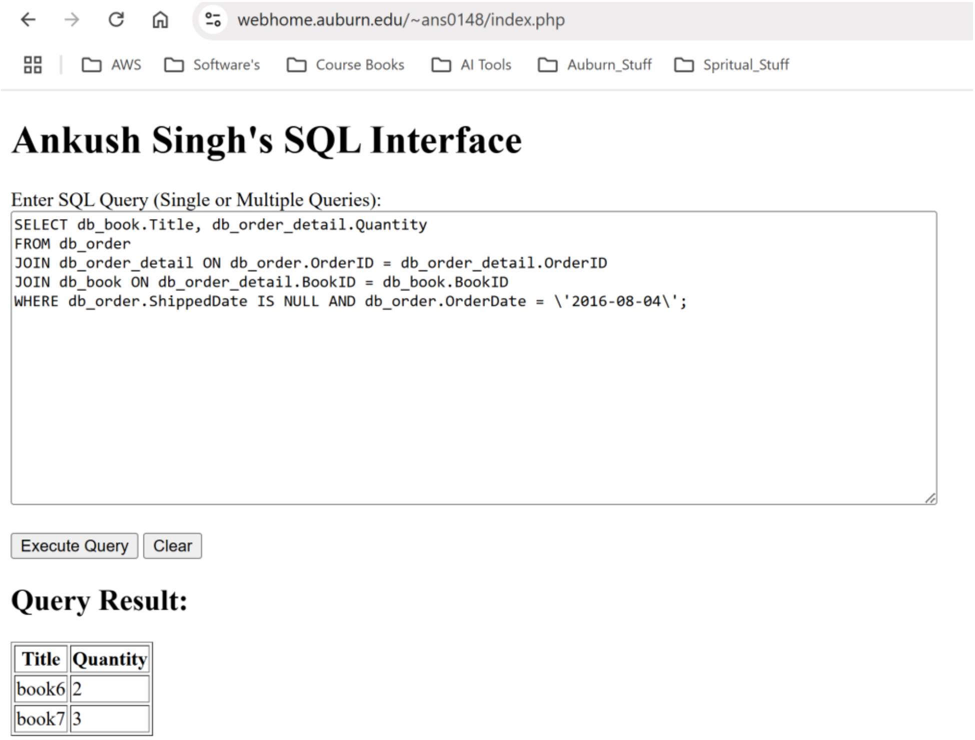
Enter SQL Query (Single or Multiple Queries):

```
SELECT db_employee.FirstName, db_employee.LastName,
       SUM(db_order_detail.Quantity * db_book.UnitPrice) AS TotalSales
FROM db_employee
JOIN db_order ON db_employee.EmployeeID = db_order.EmployeeID
JOIN db_order_detail ON db_order.OrderID = db_order_detail.OrderID
JOIN db_book ON db_order_detail.BookID = db_book.BookID
GROUP BY db_employee.EmployeeID;
```

Query Result:

FirstName	LastName	TotalSales
firstname5	lastname5	162.82000000000002
firstname6	lastname6	491.76

Query 17:



Ankush Singh's SQL Interface

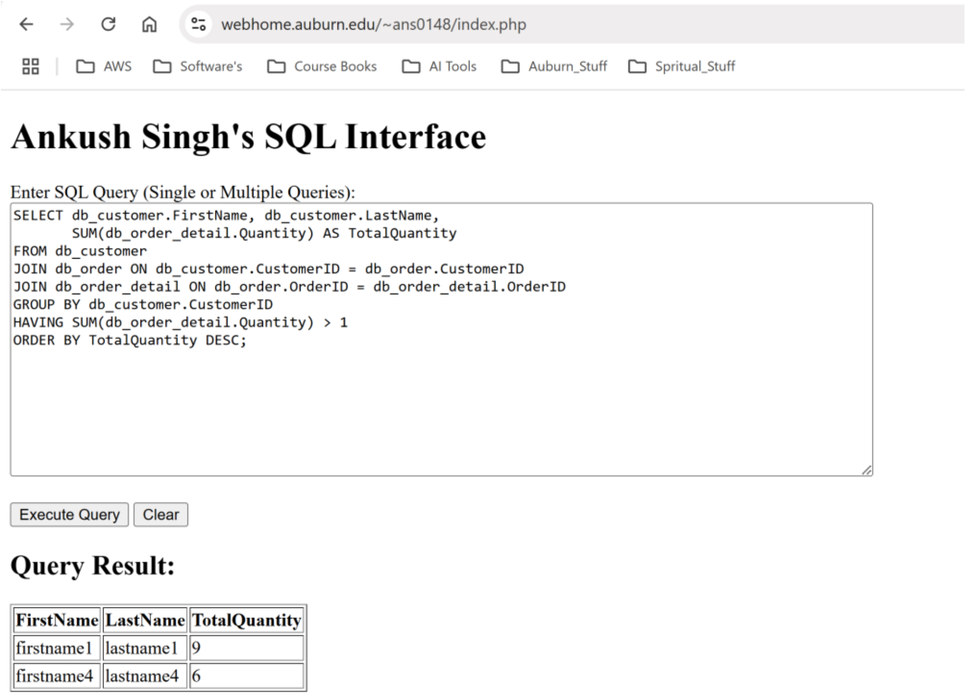
Enter SQL Query (Single or Multiple Queries):

```
SELECT db_book.Title, db_order_detail.Quantity
FROM db_order
JOIN db_order_detail ON db_order.OrderID = db_order_detail.OrderID
JOIN db_book ON db_order_detail.BookID = db_book.BookID
WHERE db_order.ShippedDate IS NULL AND db_order.OrderDate = \'2016-08-04\';
```

Query Result:

Title	Quantity
book6	2
book7	3

Query 18:



Ankush Singh's SQL Interface

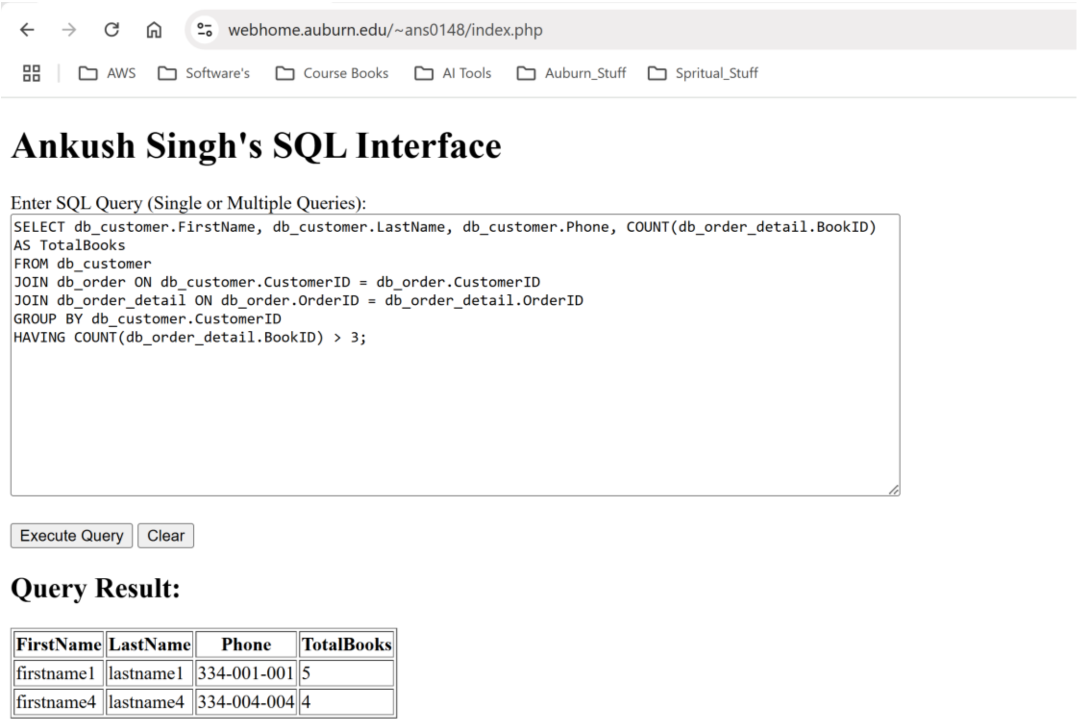
Enter SQL Query (Single or Multiple Queries):

```
SELECT db_customer.FirstName, db_customer.LastName,
       SUM(db_order_detail.Quantity) AS TotalQuantity
FROM db_customer
JOIN db_order ON db_customer.CustomerID = db_order.CustomerID
JOIN db_order_detail ON db_order.OrderID = db_order_detail.OrderID
GROUP BY db_customer.CustomerID
HAVING SUM(db_order_detail.Quantity) > 1
ORDER BY TotalQuantity DESC;
```

Query Result:

FirstName	LastName	TotalQuantity
firstname1	lastname1	9
firstname4	lastname4	6

Query 19:



Ankush Singh's SQL Interface

Enter SQL Query (Single or Multiple Queries):

```
SELECT db_customer.FirstName, db_customer.LastName, db_customer.Phone, COUNT(db_order_detail.BookID)
AS TotalBooks
FROM db_customer
JOIN db_order ON db_customer.CustomerID = db_order.CustomerID
JOIN db_order_detail ON db_order.OrderID = db_order_detail.OrderID
GROUP BY db_customer.CustomerID
HAVING COUNT(db_order_detail.BookID) > 3;
```

Query Result:

FirstName	LastName	Phone	TotalBooks
firstname1	lastname1	334-001-001	5
firstname4	lastname4	334-004-004	4

The above screenshots display that successfully executed 19 queries from the sql.txt file using the custom web interface, validating the database's functionality. The queries, covering filtering, joins and sorting were run to retrieve specific outputs as it was required in the prompt.