

Experiment No 1

- **Author table :-**

```
CREATE TYPE names1 AS OBJECT (  
    fname VARCHAR2(20),  
    lname VARCHAR2(20)  
);
```

```
CREATE TYPE phone_no AS VARRAY(10) OF VARCHAR2(10);
```

```
CREATE TABLE Author (  
    author_id VARCHAR2(10) PRIMARY KEY,  
    author_name names1,  
    phone phone_no  
);
```

```
INSERT INTO Author VALUES ('C1', names1('Kim', 'ABC'),  
phone_no('9425904645'));
```

```
INSERT INTO Author VALUES ('C2', names1('qwe', 'rty'),  
phone_no('9425905235'));
```

```
INSERT INTO Author VALUES ('C3', names1('uio', 'opa'),  
phone_no('942014645'));
```

- **Book table :-**

```
CREATE TYPE publisher1 AS OBJECT (
```

```
    pub_id INTEGER,
```

```
    pub_name VARCHAR2(20),
```

```
    branch VARCHAR2(20)
```

```
);
```

```
CREATE TYPE keywords1 AS VARRAY(20) OF VARCHAR2(20);
```

```
CREATE TABLE Book (
```

```
    ISBN INTEGER PRIMARY KEY,
```

```
    title VARCHAR2(30),
```

```
    author_id1 VARCHAR2(10),
```

```
    category VARCHAR2(20),
```

```
    publisher1 publisher1,
```

```
    keywords1 keywords1,
```

```
    price NUMBER(10,2)
```

```
);
```

```
INSERT INTO Book VALUES (2, 'Book Two', 'C1', 'History', publisher1(102, 'Tata MacGraw Hill', 'UK'), keywords1('history', 'non-fiction'), 25.50);
```

```
INSERT INTO Book VALUES (5, 'Book Five', 'C2', 'Philosophy', publisher1(105, 'Tata MacGraw Hill', 'US'), keywords1('philosophy', 'classic'), 15.00);
```

```
INSERT INTO Book VALUES (6, 'Book Six', 'C3', 'Art', publisher1(106, 'Tata MacGraw Hill', 'Paris Branch'), keywords1('painting', 'modern'), 22.50);
```

```
INSERT INTO Book VALUES (7, 'Book Seven', 'C1', 'Travel', publisher1(107, 'GlobeTrotters', 'Sydney Branch'), keywords1('adventure', 'guide'), 18.75);
```

```
INSERT INTO Book VALUES (8, 'Book Eight', 'C2', 'Science', publisher1(108, 'SciencePress', 'Berlin Branch'), keywords1('science', 'research'), 30.00);
```

- **Customer table :-**

```
CREATE TABLE Customer (  
    customer_id VARCHAR2(20) PRIMARY KEY,  
    name names1,  
    phone_no phone_no  
);
```

```
INSERT INTO Customer VALUES ('C001', names1('Alice', 'Smith'),  
phone_no('1234567890'));
```

```
INSERT INTO Customer VALUES ('C002', names1('Bob', 'Jones'),  
phone_no('1112223333'));
```

```
INSERT INTO Customer VALUES ('C003', names1('Charlie', 'Brown'),  
phone_no('5556667777'));
```

```
INSERT INTO Customer VALUES ('C004', names1('Diana', 'Prince'),  
phone_no('2223334444'));
```

```
INSERT INTO Customer VALUES ('C005', names1('Eve', 'Adams'),  
phone_no('7778889999'));
```

- **Book sale table :-**

```
CREATE TABLE Book_sale (  
    sale_id VARCHAR2(20) PRIMARY KEY,  
    customer_id VARCHAR2(20),  
    ISBN INTEGER  
);
```

```
INSERT INTO Book_sale VALUES ('S001', 'C001', 2);
```

```
INSERT INTO Book_sale VALUES ('S002', 'C002', 5);
```

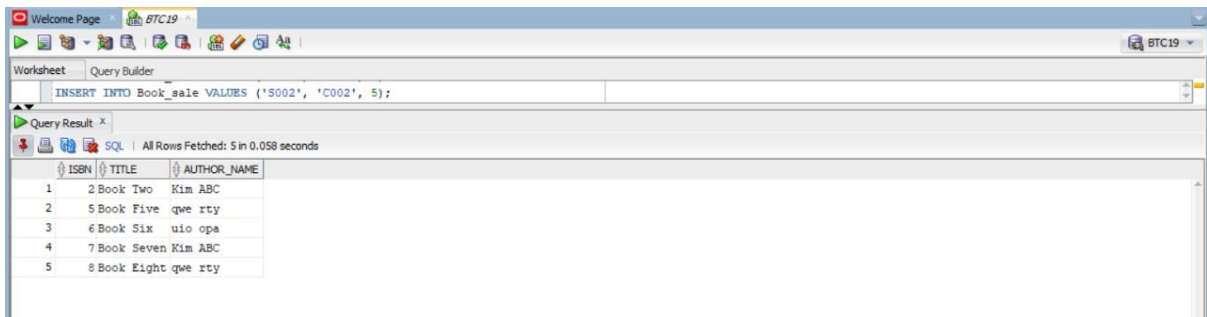
```
INSERT INTO Book_sale VALUES ('S003', 'C003', 6);
```

```
INSERT INTO Book_sale VALUES ('S004', 'C004', 7);
```

```
INSERT INTO Book_sale VALUES ('S005', 'C005', 8);
```

- **Query 1 :-**

```
SELECT b.ISBN,  
       b.title,  
       a.author_name.fname || ' ' || a.author_name.lname AS author_name  
FROM Book b  
JOIN Author a ON b.author_id1 = a.author_id;
```



The screenshot shows a database application window with a 'Query Result' tab. The query executed is 'INSERT INTO Book_sale VALUES ('S002', 'C002', 5);'. The result set displays 5 rows of data from a join between the 'Book' and 'Author' tables. The columns are ISBN, TITLE, and AUTHOR_NAME.

| | ISBN | TITLE | AUTHOR_NAME |
|---|------|------------|-------------|
| 1 | 2 | Book Two | Kim ABC |
| 2 | 5 | Book Five | qwe rty |
| 3 | 6 | Book Six | uio opa |
| 4 | 7 | Book Seven | Kim ABC |
| 5 | 8 | Book Eight | qwe rty |

- **Query 2 :-**

```
SELECT DISTINCT c.customer_id,  
               c.name.fname || ' ' || c.name.lname AS customer_name  
FROM Customer c  
JOIN Book_sale bs ON c.customer_id = bs.customer_id  
JOIN Book b ON bs.ISBN = b.ISBN  
WHERE b.publisher1.pub_name = 'Tata MacGraw Hill';
```



The screenshot shows a database application window with a 'Query Result' tab. The query executed is 'a.author_name.fname || ' ' || a.author_name.lname AS author_name'. The result set displays 3 rows of data from a join between the 'Customer', 'Book_sale', and 'Book' tables. The columns are CUSTOMER_ID and CUSTOMER_NAME.

| | CUSTOMER_ID | CUSTOMER_NAME |
|---|-------------|---------------|
| 1 | C001 | Alice Smith |
| 2 | C002 | Bob Jones |
| 3 | C003 | Charlie Brown |

- **Query 3:-**

SELECT

c.name.fname || ' ' || c.name.lname AS customer_name,

b.title,

b.publisher1.pub_name

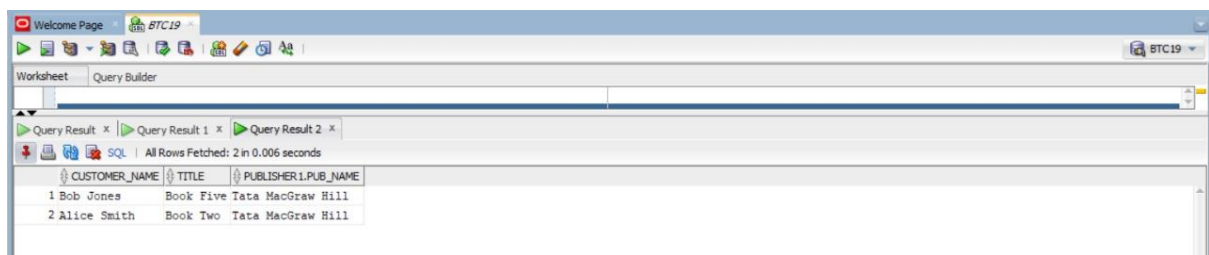
FROM Customer c

JOIN Book_sale bs ON c.customer_id = bs.customer_id

JOIN Book b ON bs.ISBN = b.ISBN

WHERE b.publisher1.branch IN ('UK', 'US')

ORDER BY c.name.lname;



The screenshot shows a database query result in a software interface. The result is displayed in a table with three columns: CUSTOMER_NAME, TITLE, and PUBLISHER1.PUB_NAME. There are two rows of data.

| | CUSTOMER_NAME | TITLE | PUBLISHER1.PUB_NAME |
|---|---------------|-----------|---------------------|
| 1 | Bob Jones | Book Five | Tata MacGraw Hill |
| 2 | Alice Smith | Book Two | Tata MacGraw Hill |

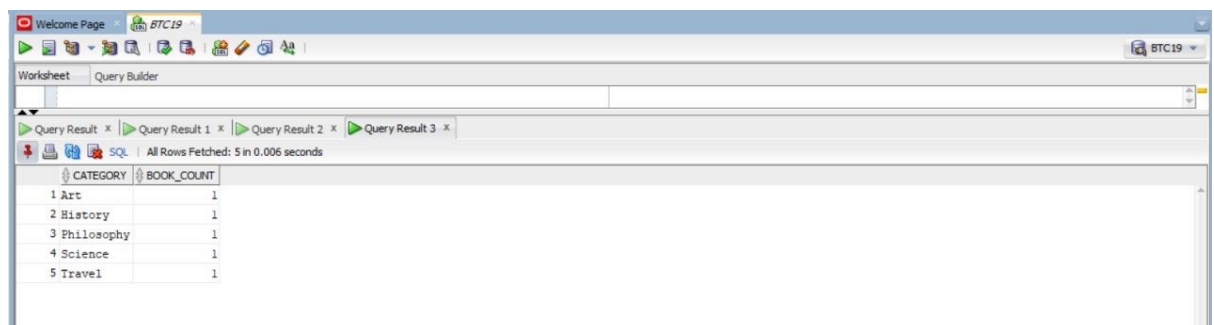
- **Query 4:-**

SELECT category, COUNT(*) AS book_count

FROM Book

GROUP BY category

ORDER BY category;



The screenshot shows a database query result in a software interface. The result is displayed in a table with two columns: CATEGORY and BOOK_COUNT. There are five rows of data.

| CATEGORY | BOOK_COUNT |
|--------------|------------|
| 1 Art | 1 |
| 2 History | 1 |
| 3 Philosophy | 1 |
| 4 Science | 1 |
| 5 Travel | 1 |

- **Query 5 :-**

SELECT

a.author_name.fname AS author_first_name,

COUNT(*) AS books_sold

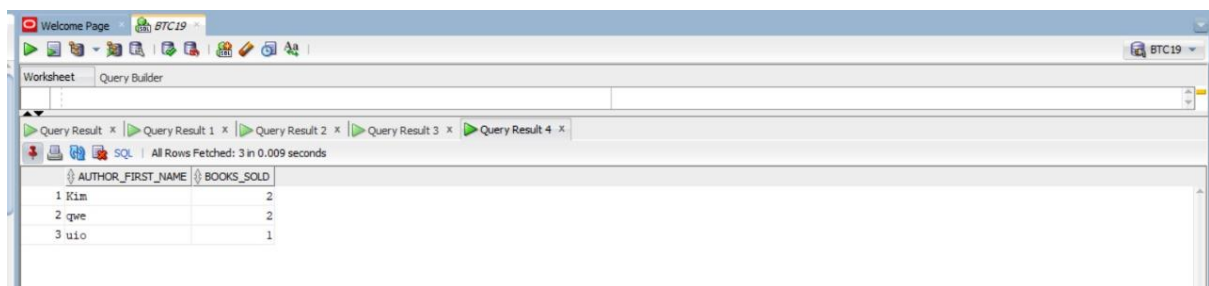
FROM Book_sale bs

JOIN Book b ON bs.ISBN = b.ISBN

JOIN Author a ON b.author_id1 = a.author_id

GROUP BY a.author_name.fname

ORDER BY a.author_name.fname;



The screenshot shows a database management system interface with a 'Query Builder' tab. Below the query builder, there are tabs for 'Query Result 1' through 'Query Result 4'. The first tab, 'Query Result 1', is active and displays the results of the query. The results are shown in a table with two columns: 'AUTHOR_FIRST_NAME' and 'BOOKS_SOLD'. The table contains three rows of data.

| | AUTHOR_FIRST_NAME | BOOKS_SOLD |
|---|-------------------|------------|
| 1 | Kim | 2 |
| 2 | que | 2 |
| 3 | uio | 1 |