

# 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('ui0', '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 the Oracle SQL Developer interface. The top part displays the SQL command:

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

The bottom part shows the results of the query:

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 the Oracle SQL Developer interface. The top part displays the SQL command:

```
a.author_name.fname || ' ' || a.author_name.lname AS author_name
```

The bottom part shows the results of the query:

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;

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;

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 the Oracle SQL Developer interface. The title bar says "Welcome Page - BTC19". The main area has tabs for "Worksheet" and "Query Builder". Below the tabs, there are four tabs labeled "Query Result 1", "Query Result 2", "Query Result 3", and "Query Result 4". The "Query Result 1" tab is active. It contains the SQL query and its execution details: "All Rows Fetched: 3 in 0.009 seconds". Below this, a table is displayed with the following data:

AUTHOR_FIRST_NAME	BOOKS SOLD
1 Kim	2
2 qwe	2
3 uio	1