# EXPERIMENT - 4

AIM: Implementation of various set operator in SQL.

THEORY: SPL provides set aperators to compare row from two or more tables as to combine the roults obtained from two or more queries to obtain the final result. These operators are used to join the results of two (or more) SFIFCT statements. The set operators are UNJON) UNTON ALL, INTERSECT, INTERSECT, ALL, and EXCEPT/MINUS.

a) UNION: 9t combines the result of two as more SEIFCT statements. To successfully execute the operation of UNION, the number of columns and the data type must be some in both tables. After performing the UNION operation, the duplicate power with be climinated from the results.

Syntax: SFIFCT expl, exp2...exp n
FROM table 1

WHERE condition

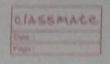
UNION

SFIECT expl, exp e...exp n

FROM table 2

WHERE condition;

Example: SELECT \* from compl\_ implyees
UNION



# SELECT \* FROM Comple employees;

b) TATERFECT : 9t allows to find would that exist in both queries. The pumber of columns and data type must be some in both tables. After performing the INTERFECT aperation, the data/records which are common in both the SELECT statements are returned.

Syntax: SELECTEXP1, exp2, exp3... expn From table 1

WHERE condition

THTERSECT

SELECT exp1, exp2, exp3... expn From table 2

WHERE condition;

Frample: SFLECT \* FROM comple implayers

INTERSECT

SELECT \* FROM comple - employers;

Minus Except: 9t about to filter out the results
which are present in the birst query but absent
in the second query. The number of columns and
data types must be same in both tables. After
performing the Except operation, the data I moved which
are not present in the second JELECT statement
or query are displayed.

Syntax: SELECT expl, expl ... expn From table 1 HHERE cendition FXCEPT

SELECT expl. expl. expn From table 2 HHERE condition;

Except

SELECT \* FROM compl- employees;

SELECT \* FROM compl- employees;

#### **INPUT:**

```
DROP TABLE IF EXISTS Sailors;
DROP TABLE IF EXISTS Boats;
DROP TABLE IF EXISTS Reserves;
CREATE TABLE Sailors (SID number(5), sname varchar2(10), rating
number(1.1),age number(3));
CREATE TABLE Boats (BID number(5), bname varchar2(10), color varchar2(10));
CREATE TABLE Reserves (SID number(5),BID number(5),day DATE);
INSERT INTO Sailors
VALUES(1, 'Amar', 4.9, 41), (2, 'Vinay', 4.7, 34), (3, 'Rohit', 4.5, 35), (4, 'Sachin',
4.8,49);
INSERT INTO Boats VALUES
(1007, 'Boat1', 'Green'), (1018, 'Boat2', 'Red'), (1045, 'Boat3', 'Blue'), (1010, 'B
oat4', 'Green'), (1035, 'Boat5', 'Red');
INSERT INTO Reserves VALUES (1,1007,'7-July-2022'),(4,1010,'5-November-
2022'),(2,1045,'30-April-2022'),(1,1018,'24-April-2022'),(3,1035,'14-
March-2022');
SELECT * FROM Sailors;
SELECT * FROM Boats;
SELECT * FROM Reserves;
```

#### **DATABASES:** Reserves

SID	BID	day
1	1007	7-July-2022
4	1010	5-November-2022
2	1045	30-April-2022
1	1018	24-April-2022
3	1035	14-March-2022

#### **Boats**

BID	bname	color
1007	Boat1	Green
1018	Boat2	Red
1045	Boat3	Blue
1010	Boat4	Green
1035	Boat5	Red

# <u>Sailors</u>

SID	sname	rating	age
1	Amar	4.9	41
2	Vinay	4.7	34
3	Rohit	4.5	35
4	Sachin	4.8	49

### **Query 1:** Find Sailor ID's who have reserved red boats or green boats.

#### Code:

```
SELECT s.SID

FROM Sailors s

WHERE s.SID IN (SELECT r.SID FROM Reserves r,Boats b WHERE b.color='Red' and b.BID=r.BID

UNION

SELECT r.SID FROM Reserves r,Boats b WHERE b.color='Green' and b.BID=r.BID);
```

### **Output:**

SID	
1	
3	
4	

Query 2: Find Sailor names who have reserved both red and green boats.

#### Code:

```
SELECT s.sname
FROM Sailors s
WHERE s.SID IN (SELECT r.SID FROM Reserves r,Boats b WHERE b.color='Red'
and b.BID=r.BID
INTERSECT
SELECT r.SID FROM Reserves r,Boats b WHERE b.color='Green' and
b.BID=r.BID);
```

## **Output:**



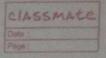
# Query 3: Find Sailor names who have reserved red boats but not green boats.

### Code:

```
SELECT s.sname
FROM Sailors s
WHERE s.SID IN (SELECT r.SID FROM Reserves r,Boats b WHERE b.color='Red'
and b.BID=r.BID
EXCEPT
SELECT r.SID FROM Reserves r,Boats b WHERE b.color='Green' and
b.BID=r.BID);
```

## **Output:**

sname Rohit



	CONCLUSION: Various SFT Operators (UNION, INTERSECT,  EXCEPT) in Sql has been understood  and executed in the queries.
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0	