CLASSMATE
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EXPERIMENT-3

AIM: Implementation of IN clause and EXISTS clause in SQL

THEORY: A clause in SQL is a built-in function that helps to fetch the required records in database table. A clause reciers a conditional expression, ie a column name or some terms involving the columns. The clause calculates the result based on the given statements in the expression. When a large amount of data is stored in the database, clauses are helpful to filter and analyze the queries.

The WHERE clause in SQL is used to reciere the specific data from database that specifies the conditions exactly that are given in the UPDATE, DELETE, etc statements.

The FORM clause in SQL is used to select the database tables, which are manipulated using the SELECT, DELETE and UPDATE statements

The AND clause is used when multiple conditions are specified in a query and returns a dataset when all the conditions given in the AND clause meet the requirements

The OR clause is used when multiple conditions are specified in a query and returns a dataset when any of the condition gets satisfied.

An operator is a reserved keyword or special symbol which can be used to perform some specific logical and mathematical computation on operands. SQL operators are used with the SQL WHERE clause for retrieving results based on some specific logical or mathematical computation.

a) IN Operator: It allows to easily test if the expression matches any value in the list of values, it is used to remove the need for multiple OR conditions in SELECT, INSERT, UPDATE or DELETE. It is used to retrieve records that matches the set of separated by commas.

Syntax: SELECT col-name FROM table_name WHERE col_name IN (list-of-values);

Example: SELECT Name From Emp WHERE salary IN (30000, 40000, 50000);

b) EXISTS operator: The EXISTS operator is used to check if the specific value exists in the result of the inner sub query or not. The result of EXISTS is a boolean value TRUE OR FALSE. It can be used in a SELECT, UPDATE, INSERT or DELETE statement.

Syntax: SELECT col_name FROM table_name WHERE EXISTS (SELECT col_name
FROM table_name
WHERE condition);

Example: SELECT fname, lname FROM Customers
WHERE EXISTS (SELECT *
FROM Orders
WHERE
Customers.customer_id = Orders.c_id);

INPUT:

```
DROP TABLE IF EXISTS Employee;
DROP TABLE IF EXISTS Emp_Company;
DROP TABLE IF EXISTS Company;
DROP TABLE IF EXISTS Manager;
DROP TABLE IF EXISTS Emp_Shift;

CREATE TABLE Employee(ename varchar2(10),city varchar2(10));
CREATE TABLE Emp_Company(ename varchar2(10),cname varchar2(10),salary
number(7,2),jdate date);
CREATE TABLE Company(cname varchar2(10),city varchar2(10));
CREATE TABLE Manager(ename varchar2(10),mname varchar2(10));
CREATE TABLE Emp_Shift(ename varchar2(10),shift varchar2(10));

INSERT INTO Employee values
('Sunil','Madras'),('Vijay','Madras'),('Amar','Bombay'),('Atharva','Delhi'
);
INSERT INTO Emp_Company values ('Sunil','ACC',5000,'01-SEP-
2027'),('Vijay','ACC',40000,'01-SEP-2027'),('Amar','Microsoft',6000,'01-
SEP-2027'),('Atharva','Google',60000,'01-SEP-2027');
INSERT INTO Company
values('ACC','Madras'),('TATA','Bengaluru'),('Microsoft','Bombay'),('Googl
e','Delhi');
INSERT INTO Manager values
('Sunil','Sharvari'),('Vijay','Sunil'),('Amar','Mahi'),('Atharva','Rucha')
;
INSERT INTO Emp_Shift
values('Sunil','A'),('Vijay','A'),('Amar','B'),('Atharva','C');

SELECT * FROM Employee;
SELECT * FROM Emp_Company;
SELECT * FROM Company;
SELECT * FROM Manager;
SELECT * FROM Emp_Shift;
```

DATABASES :

Employee

ename	city
Sunil	Madras
Vijay	Madras
Amar	Bombay
Atharva	Delhi

Company

cname	city
ACC	Madras
TATA	Bengaluru
Microsoft	Delhi
Google	Delhi

Emp_Company

ename	cname	salary	jdate
Sunil	ACC	5000	01-SEP-2027
Vijay	ACC	40000	01-SEP-2027
Amar	Microsoft	6000	01-SEP-2027
Atharva	Google	60000	01-SEP-2027

Manager

ename	mname
Sunil	Sharvari
Vijay	Sunil
Amar	Mahi
Atharva	Rucha

Emp_Shift

ename	shift
Sunil	A
Vijay	A
Amar	B
Atharva	C

Query 1 : Find the employee names and cities they live in for the employee working in company ‘ACC’.

Code :

```
SELECT e.ename,e.city FROM Employee e WHERE e.ename IN(SELECT
ec.ename FROM Emp_Company ec WHERE ec.cname = "ACC");
```

Output:

ename	city
Sunil	Madras
Vijay	Madras

Query 2 : List the employee living in city ‘Bombay’ and those having company located in ‘Delhi’.

Code :

```
SELECT e.ename FROM Employee e WHERE e.city='Bombay' and EXISTS
(SELECT c.city FROM Company c WHERE c.city='Delhi');
```

Output:

ename
Amar

Query 3 : List the names of employees living in same city where ‘Sunil’ is living.

Code :

```
SELECT e.ename FROM Employee e WHERE e.city IN (SELECT e1.city FROM
Employee e1 WHERE e1.ename='Sunil');
Output :
```

ename
Sunil
Vijay

CONCLUSION: IN clause and EXISTS clause are being understood and implemented / executed in the queries.