Experiment No 4

Write queries using SQL Operators (BETWEEN, AND, IN, LIKE, ISNULL and along with Negation expressions).

There are comparison keywords available in SQL which are used to enhance the search capabilities of a sql query. They are "IN", "BETWEEN...AND", "IS NULL", "LIKE".

Comparison Operators	Description
LIKE	column value is like specified character(s).
IN	column value is equal to any one of a specified set of values.
BETWEEN...AND	column value is between two values, including the end values specified in the range.
IS NULL	column value does not exist.

SQL LIKE Operator

The LIKE operator is used to list all rows in a table whose column values match a specified pattern. It is useful when you want to search rows to match a specific pattern, or when you do not know the entire value. For this purpose, we use a wildcard character '%'. For example: To select all the students whose name begins with 'S'

SELECT first_name, last_name FROM student_details WHERE first_name LIKE 'S%';

The output would be similar to:

first_name	last_name
Stephen	Fleming
Shekar	Gowda

The above select statement searches for all the rows where the first letter of the column first_name is 'S' and rest of the letters in the name can be any character.

There is another wildcard character you can use with LIKE operator. It is the underscore character, ' _ ' . In a search string, the underscore signifies a single character.

For example: to display all the names with 'a' second character,

SELECT first_name, last_name FROM student_details WHERE first_name LIKE '_a%';

The output would be similar to:

first_name	last_name	first_name	last_name	age
Rahul	Sharma	Rahul	Sharma	10
		Anajali	Bhagwat	12
		Shekar	Gowda	15

SQL BETWEEN ... AND Operator

The operator BETWEEN and AND, are used to compare data for a range of values.

For Example: to find the names of the students between age 10 to 15 years, the query would be like,

SELECT first_name, last_name, age FROM student_details WHERE age BETWEEN 10 AND 15;

The output would be similar to:

SQL IN Operator:

The IN operator is used when you want to compare a column with more than one value. It is similar to an OR condition.

For example: If you want to find the names of students who are studying either Maths or Science, the query would be like,

SELECT first_name, last_name, subject FROM student_details WHERE subject IN ('Maths', 'Science');

The output would be similar to:

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first_name       last_name       subject
-------------    -------------    ----------
Anajali          Bhagwat         Maths
Shekar           Gowda           Maths
Rahul            Sharma          Science
Stephen          Fleming         Science
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You can include more subjects in the list like ('maths','science','history')

SQL IS NULL Operator

A column value is NULL if it does not exist. The IS NULL operator is used to display all the rows for columns that do not have a value.

For Example: If you want to find the names of students who do not participate in any games, the query would be as given below

SELECT first_name, last_name FROM student_details WHERE games IS NULL

There would be no output as we have every student participate in a game in the table student_details, else the names of the students who do not participate in any games would be displayed.

1. List ename whose manager is not NULL.
   SQL>select ename from emp where mgr is not null;
2. Display all the details of all 'Mgrs'
   SQL>Select * from emp where empno in (select mgr from emp) ;
3. List ename whose commission is NULL.
   SQL>select ename from emp where comm is null;
4. List the emps whose Empno not starting with digit78.
   SQL>select * from emp where empno not like '78%';
5. List all employee names and their and their manager whose manager is 7902 or 7566 0r 7789.
   SQL>select ename from emp where mgr in(7602,7566,7789);
6. List all employees which starts with either J or T.
   SQL>select ename from emp where ename like „J%" or ename like „T%";
7. List all employee names and jobs, whose job title includes M or P.
   SQL>select ename,job from emp where job like „M%" or job like „P%";
8. List all jobs available in employee table.
   SQL>select distinct job from emp;
9. List all employees who belongs to the department 10 or 20.
   SQL>select ename from emp where deptno in (10,20);
10. List all employee names, salary and 15% rise in salary.
    SQL>select ename, sal, sal+0.15* sal from emp;
11. List minimum, maximum, average salaries of employee.
    SQL>select min(sal), max(sal), avg(sal) from emp;
12. Find how many job titles are available in employee table.
    SQL>select count (distinct job) from emp;
13. What is the difference between maximum and minimum salaries of employees in the organization?
    SQL>select max(sal)-min(sal) from emp;
14. Display all employee names and salary whose salary is greater than minimum salary of the company and job title starts with 'M'.
    SQL>select ename,sal from emp where job like „M%" and sal > (select min (sal) from emp);
15. Find how much amount the company is spending towards salaries.
    SQL>select sum (sal) from emp;