

LAB-1

SQL Operators (AND, OR & NOT) AND KEYWORDS

Theory: The **WHERE** clause can be combined with **AND**, **OR**, and **NOT** operators.

The **AND** and **OR** operators are used to filter records based on more than one condition:

- The **AND** operator displays a record if all the conditions separated by **AND** are TRUE.
- The **OR** operator displays a record if any of the conditions separated by **OR** is TRUE.

The **NOT** operator displays a record if the condition(s) is NOT TRUE.

Example:

- Given: Create a Table Student
- StudentID, StudentName, Course, Program, Credits
- Add 10 record in Student table
- Display Student data whose credits lies in range of 8-9
- Display student Data whose Program in B.Tech
- Display Student Names starts from Letter : "A and S"
- Alter table and add column as 'Dept'
- Display Altered table
- Drop Table

Implementation:

-Table creation

> Input

```
CREATE TABLE Student (
    StudentID INT PRIMARY KEY,
    StudentName VARCHAR(255),
    Course VARCHAR(255),
    Program VARCHAR(255),
    Credits DECIMAL(5, 2)
);
```

-Value insertion

> Input

```
INSERT INTO Student (StudentID, StudentName, Course, Program, Credits)
VALUES
(1, 'John Doe', 'Mathematics', 'B.Tech', 8.5),
(2, 'Alice Smith', 'Physics', 'B.Tech', 9.0),
(3, 'Bob Johnson', 'Computer Science', 'M.Sc', 7.5),
(4, 'Sarah Brown', 'Engineering', 'B.Tech', 8.0),
(5, 'Michael Clark', 'Biology', 'B.Sc', 6.5),
(6, 'Samantha White', 'Chemistry', 'B.Tech', 9.5),
(7, 'Alex Turner', 'History', 'B.A', 7.0),
(8, 'Emily Davis', 'Electrical Engineering', 'B.Tech', 8.8),
(9, 'Steven Wilson', 'Mechanical Engineering', 'B.Tech', 7.2),
(10, 'Linda Harris', 'Psychology', 'B.A', 9.3);
```

Student

StudentID	StudentName	Course	Program	Credits
1	John Doe	Mathematics	B.Tech	8.5
2	Alice Smith	Physics	B.Tech	9
3	Bob Johnson	Computer Science	M.Sc	7.5
4	Sarah Brown	Engineering	B.Tech	8
5	Michael Clark	Biology	B.Sc	6.5
6	Samantha White	Chemistry	B.Tech	9.5
7	Alex Turner	History	B.A	7
8	Emily Davis	Electrical Engineering	B.Tech	8.8
9	Steven Wilson	Mechanical Engineering	B.Tech	7.2
10	Linda Harris	Psychology	B.A	9.3

-Student data whose credits lies in range of 8-9

>

Input

Run SQL

```
SELECT * FROM Student WHERE Credits BETWEEN 8.0 AND 9.0;
```

Output

StudentID	StudentName	Course	Program	Credits
1	John Doe	Mathematics	B.Tech	8.5
2	Alice Smith	Physics	B.Tech	9
4	Sarah Brown	Engineering	B.Tech	8
8	Emily Davis	Electrical Engineering	B.Tech	8.8

-student Data whose Program in B.Tech

>

Input

Run SQL

```
SELECT * FROM Student WHERE Program = 'B.Tech';
```

Output

StudentID	StudentName	Course	Program	Credits
1	John Doe	Mathematics	B.Tech	8.5
2	Alice Smith	Physics	B.Tech	9
4	Sarah Brown	Engineering	B.Tech	8
6	Samantha White	Chemistry	B.Tech	9.5
8	Emily Davis	Electrical Engineering	B.Tech	8.8
9	Steven Wilson	Mechanical Engineering	B.Tech	7.2

-Student Names starts from Letter :”A and S’

>

Input

Run SQL

```
SELECT * FROM Student WHERE StudentName LIKE 'A%' OR StudentName LIKE 'S%';
```

Output

StudentID	StudentName	Course	Program	Credits
2	Alice Smith	Physics	B.Tech	9
4	Sarah Brown	Engineering	B.Tech	8
6	Samantha White	Chemistry	B.Tech	9.5
7	Alex Turner	History	B.A	7
9	Steven Wilson	Mechanical Engineering	B.Tech	7.2

- Alter table and column as 'Dept' added

> **Input**

```
ALTER TABLE Student  
ADD Dept VARCHAR(255);
```

Student

	StudentName	Course	Program	Credits	Dept
1	John Doe	Mathematics	B.Tech	8.5	
	Alice Smith	Physics	B.Tech	9	
2	Bob Johnson	Computer Science	M.Sc	7.5	
	Sarah Brown	Engineering	B.Tech	8	
3	Michael Clark	Biology	B.Sc	6.5	
	Samantha White	Chemistry	B.Tech	9.5	
4	Alex Turner	History	B.A	7	

-Table drop

>

Input

Run SQL

DROP TABLE Student;

Output

SQL query successfully executed. However, the result set is empty.