

BSc (Hons) in Information Technology - Year 1

Lab Sheet 2

IT1090 - Information Systems and Data Modeling

Semester 2

Objective: At the end of this lab session you should be able to write the SELECT command with the WHERE clause and ORDER BY clause for single table queries.

Section 1

SELECT command is used to retrieve data from the database tables. The syntax of the basic SELECT command is given below.

Syntax:

```
SELECT column1, column2,
FROM table_name;
```

WHERE clause is used to filter out the results according to our requirements and different conditions. The syntax of a query with the WHERE clause included is given below.

Syntax:

```
SELECT column1, column2,
FROM table_name
WHERE condition;
```

We can use the following Relational operators to define the conditions in the WHERE clause.



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Select sname from Student where CID ='IT';

Select cname from Course where fees > 100000;

Also, we can use the following keywords in the WHERE clause.

AND, OR, BTWEEN, NOT BETWEEN, IN, NOT IN, IS NULL, IS NOT NULL, LIKE, NOT LIKE

Ex:

Select SID, sname from Student where CID = 'IT' OR DOB < '3/5/1999';

Select * from Student where address IS NULL;

Table 1 given below defines the operators and keywords that can be used in the WHERE clause

Operator	Description
=	Equal
>	Greater than
<	Less than
>=	Greater than or equal
<=	Less than or equal
⇔	Not equal. Note: In some versions of SQL this
	operator may be written as !=
BETWEEN	Between a certain range



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Lab Sheet 2

IT1090 - Information Systems and Data Modeling

Semester 2

LIKE	Search for a pattern
IN	To specify multiple possible values for a column
AND	displays a record if all the conditions separated by AND are TRUE
OR	displays a record if any of the conditions separated by OR is TRUE
NOT	NOT operator displays a record if the condition(s) is NOT TRUE

Table 1: Operators and keywords in WHERE clause

Exercise

- a. Find all information about the students.
- b. Find the module name and the no of credits for a module.
- c. Find students whose name start with letter 'A'.
- d. Find the names of the students who were born before 1996/01/01.
- e. Find name and NIC of students who are from 'Colombo' District.
- f. Find the students whose names are starting from 'K' and following 'DS' course.
- g. Select the students who are following either 'DS' or 'IT' courses.



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Section 2

The ORDER BY clause in SQL is used to sort the results of a query. It sorts the result in ascending order by default. To sort the records in descending order, we use the DESC keyword.

Syntax:

```
SELECT column1, column2, ...
FROM table_name
ORDER BY column1, column2, ... ASC|DESC;
```

Exercises

- a. Select all the students sorted by the sname column.
- b. Select all students from the "Student" table, sorted DESCENDING by the"NIC" column.
- c. Select all students from the "Student" table, sorted ASCENDING by the "sname" column and descending by the "CID" column