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.

=,!= or<>, >,<,>=,<=

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Ex:

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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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.

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