SQL Course

Introduction to Data Manipulation Language

- To describe the functions and capabilities that **DML** provides.
- To show which statements are included in **DML.**

As a relational database is a collection of tables with associated data it can be seen to be made up of two parts. The first part is the structure of the tables and their columns and the second part is the data that will be stored in these columns to form the database. SQL provides language facilities that enable the definition of the structure of the tables and their columns and language facilities for the maintenance and manipulation of the data that will be stored in the tables. In this module we are concerned with the manipulation and maintenance of the data that is stored in the database. The part of the SQL language that covers this area is know as the Data Manipulation Language or **DML** for short.
The **DML** is the subset of the SQL language which invoke actions from the DBMS to manipulate data in the database. The actions in the database are guaranteed by the DBMS to maintain the integrity of the data in the database. The application programs issue **DML** commands to change the contents of the database to reflect changes in the real world data. Using **DML** statements you can:

- Select data from a table, which can be specified precisely using clauses in the SQL statement.
- Insert data values into tables as rows.
- Update existing data values in rows.
- Delete certain rows from certain tables.

The **DML** statements all begin with one of the following verbs:

- **INSERT** - for adding rows.
- **UPDATE** - for changing existing values.
- **DELETE** - for deleting rows within the database.
- **SELECT** - for querying the database.

Note: The first three statements are concerned with populating the database, and will be covered in this section of the course. The fourth statement (Select) is concerned with manipulating the database, and will be covered in a later section of the course, **Database Retrieval**.

Because of 'Relational Closure' several of these commands can be nested together to form a single query or operation. You can modify data (**INSERT**, **UPDATE** or **DELETE**) in only one table per statement. However, in some systems, the modifications you make can be based on data in other tables, even those in other databases. You can actually pull values from one table into another, using a SQL **SELECT** statement within one of the three data modification commands given above. The data modification commands work on views as well as on tables, with some added restrictions.