Database Definition Language

Database definition language (DDL) is used to create and destroy databases and database objects such as tables and constraints. The commands are primarily used by database administrators when a database is being built initially, when a database is being modified for a new application or when a database is being removed from a system. The commands are the first ones to be used when creating a database, and must be used before data manipulation language or select statements are applied to the database.

DDL statements can be run directly against the database using command-line tools, or through GUI-based database design tools such as Oracle Enterprise Manager. DDL statements modify the database structure, and are executed immediately they are typed into the system.

Three basic commands exist in DDL as follows:

CREATE
This command allows the database administrator to add elements to the database. These could be tables, constraints, primary keys, foreign keys or sequences. (The CREATE statement can also be used to create a schema to hold the tables in the database).

The following statement will create a table called *rooms* into a schema called *ucfscde*. The table has attributes

- NI_Number
- Name
- Surname
- Department
- Grade
- Salary

```
create table ucfscde.employees (
        NI_Number character varying(25),
        Name character varying(50),
        Surname character varying(50),
        Department character varying(50),
        Grade character varying(15),
        Salary integer);
```

Alter

Once an object such as a table has been created in a database, any modifications to this object can be made in two ways:

1. Delete the object and recreate it as a new version.
2. Use the Alter statement to modify the object.

The first option (delete and recreate) is obviously fine as long as no-one has started adding data to the database, but will cause an issue once data has been entered, as all the data will be lost when the table is deleted.

The following statement adds a field called DATE_OF_BIRTH to the EMPLOYEES table:

```
ALTER TABLE ucfscde.EMPLOYEES
ADD (DATE_OF_BIRTH DATE);
```

Drop

This statement is used to remove unwanted tables, constraints, keys and other objects from the database. This command should be used with great care, as most databases do not offer you the option to cancel the process once it has been started.


```
DROP TABLE ucfscde.EMPLOYEES;
```

will delete the EMPLOYEES table from the *ucfscde* schema in the database. Note that ALL DATA will also be deleted.

In a similar manner, the DROP COLUMN statement can be used to remove the DATE_OF_BIRTH column from the EMPLOYEES table – this usage combines the ALTER and the DROP commands:

```
ALTER TABLE ucfscde.EMPLOYEES
DROP COLULMN DATE_OF_BIRTH;
```

Once again, all data in the column will be deleted. There will often be no warning before this happens.