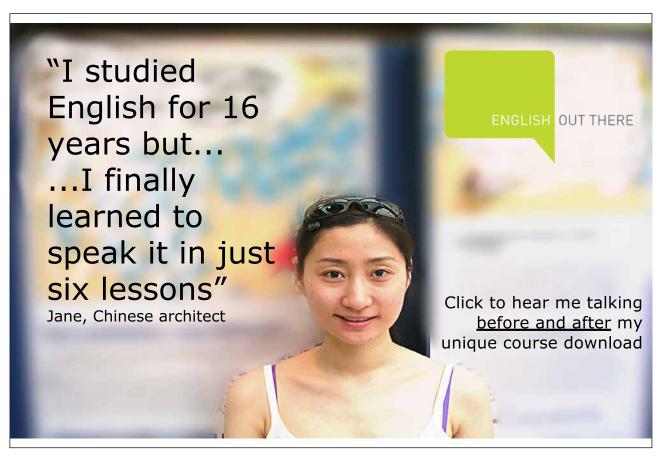# 3   Data Definition in SQL

3.1   Summary

The SQL language has facilities to create, manipulate and delete (drop) tables. Often these command line activities are duplicated through a GUI (such as the one in Access), however there are advantages to performing these operations through text. The SQL create table syntax is of the form:

```
CREATE TABLE tablename
      (column_name type [NULL/NOT NULL],
      column_name  type [NULL/NOT NULL],
      column_name  type [NULL/NOT NULL] ..)
```

To permanently delete a table (to 'drop' a table), use the drop command:

```
DROP table tablename;
```

To change a table structure use the `alter table` command:

```
ALTER table tablename
    (
        [MODIFY columnname type |
        ADD columnname type ]
    );
```

Most SQL queries allow views on the original data, without manipulating the original data set. Actual changes to rows in a table (or Data Manipulation) are done through the `Insert, Update` or `Delete` statements. The `INSERT` statement adds records (rows) to a table and has two forms:

```
INSERT into table [(columnname, columnname, …)]
values (value, value,…)
```

This will insert a record using a supplied column list the supplied values. If no column list is supplied the record will be inserted as is, which may generate errors if the columns don't match up.

```
INSERT into table [(columnname, columnname, …)]
    select select-list from table(s) … etc.
```

This form allows an insert to be based on the results of a `select` query.

3.2   Solutions to Exercises – DDL and DML activities

Write SQL commands to perform the following activities:

1. Create a specialised property table called propertyBarbados, which has the same field names as the property table.

SQL:

```
CREATE TABLE propertyBarbados
(
propertyno char(15),
street char(15),
country char(15),
type char(15),
rooms number,
rent number,
yearincome number,
ownerno char(15)
);
```

2. Write an appropriate SQL query to insert a new property into propertyBarbados with the
following details:

propertyno – BD67
street – Sunrise St
country – Barbados
type – Villa
rooms – 7
rent – 600
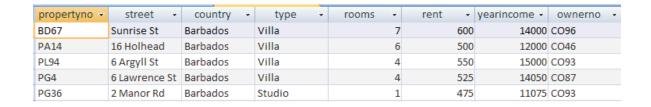**year income – 14000**
ownerno – CO96

SQL:

```
INSERT INTO propertyBarbados (propertyno, street, country, type, rooms,
rent, yearincome, ownerno)
VALUES ("BD67", "Sunrise St", "Barbados", "Villa", 7, 600, 14000,
"CO96");
```

3. Write a query that will insert the details of other properties in Barbados into the table

SQL:

```
INSERT  INTO  propertyBarbados  (propertyno,  street,  country,  type,
rooms, rent,
yearincome, ownerno)
SELECT propertyno, street, country, type, rooms, rent, yearincome,
ownerno
FROM property
WHERE country="Barbados";
```

propertyno	street	country	type	rooms	rent	yearincome	ownerno
BD67	Sunrise St	Barbados	Villa	7	600	14000	CO96
PA14	16 Holhead	Barbados	Villa	6	500	12000	CO46
PL94	6 Argyll St	Barbados	Villa	4	550	15000	CO93
PG4	6 Lawrence St	Barbados	Villa	4	525	14050	CO87
PG36	2 Manor Rd	Barbados	Studio	1	475	11075	CO93

4. Write an SQL statement to drop the propertyBarbados table

SQL:

```
DROP TABLE propertyBarbados;
```