4   Advanced Selection Queries

4.1   Summary

The purpose of the SELECT statement in SQL is to retrieve data from one or more tables and display the result in a required format. It is possible to select specific records from a database according to a particular condition. Also, one may use ORDER BY to sort records after they have been selected. The general form for the complete SELECT statement is given below:

```
SELECT [DISTINCT | ALL] {*| column [AS new_name]] [, …]}
FROM TableName [alias] [,…]
[WHERE conditional statement]
[GROUP BY column_list] [HAVING condition]
[ORDER BY column_list]
```

ORDER BY determines the order of the data retrieval output. The order of the clauses in a SELECT statement cannot be changed, although some of the clauses are optional (enclosed in [] in the above syntax).

4.2   Solutions to Exercises – Order As and Selection

In the following exercises, a query must be specified to produce the suggested result. There are spaces for you to write SQL query statements. Use the AS command to get correct column headings in SQL.

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1. Display the property number, street and country information ordered by country.

SQL:

```
SELECT propertyno, street, country
FROM property
ORDER BY country asc;
```

propertyno	street	country
PG16	5 Novar Dr	Antigua
PG36	2 Manor Rd	Barbados
PG4	6 Lawrence St	Barbados
PL94	6 Argyll St	Barbados
PA14	16 Holhead	Barbados
PG21	18 Dale Rd	St Kitts

2. Display the property number, street and country information ordered by country (descending) and property number (ascending).

SQL:

```
SELECT propertyno, street, country
FROM property
ORDER BY country desc, propertyno asc;
```

propertyno	street	country
PG21	18 Dale Rd	St Kitts
PA14	16 Holhead	Barbados
PG36	2 Manor Rd	Barbados
PG4	6 Lawrence St	Barbados
PL94	6 Argyll St	Barbados
PG16	5 Novar Dr	Antigua

3. Display the property information for properties that have less than 4 rooms.

SQL:

```
SELECT *
FROM property
WHERE rooms<4;
```

propertyno	street	country	type	rooms	rent	yearincome	ownerno
PG36	2 Manor Rd	Barbados	Studio	1	475	11075	CO93
PG21	18 Dale Rd	St Kitts	Apartment	3	450	9500	CO40
PG16	5 Novar Dr	Antigua	Apartment	2	400	8000	CO87

4. Display all the properties with 4 rooms and rent of over £540.

SQL:

```
SELECT *
FROM property
WHERE rooms=4 AND rent>540;
```

propertyno	street	country	type	rooms	rent	yearincome	ownerno
PL94	6 Argyll St	Barbados	Villa	4	550	15000	CO93

5. Display a list of client last names, preference type and the maximum rent figure with a preference of Villas ordered by their maximum rent figure ascending.

SQL:

```
SELECT lname, preftype, maxrent
FROM client
WHERE preftype="Villa"
ORDER BY maxrent asc;
```

lname	preftype	maxrent
Kay	Villa	500
Tregear	Villa	550

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6. Show a list of clients who have made a comment ordered by property number descending.

SQL:

```
SELECT *
FROM booking
WHERE comment is NOT NULL
ORDER BY propertyno desc;
```

clientno	propertyno	bookingdate	comment
CR76	PG4	09/07/2007	special diet
CR62	PA14	03/09/2007	allergies
CR56	PA14	16/07/2007	Non smoking required

7. Display the property numbers, type, rent and owner number of those properties who have a yearly income figure more than £11,000 and have 4 rooms, ordered by property number and type ascending.

SQL:

```
SELECT propertyno, type, rent
FROM property
WHERE yearincome>11000 and rooms=4
ORDER BY propertyno asc, type asc;
```

propertyno	type	rent
PG4	Villa	525
PL94	Villa	550