

Solution 7

Solution 7a

a) Find the total number of Managers and the sum of their salaries.

```
SELECT COUNT(*) AS manager_count, SUM(salary) AS total_salary
FROM Staff
WHERE oPosition = 'Manager';
```

Primary Keys: none

Foreign Keys: none

Degree of Resulting View: 2

Cardinality of the Resulting View: 1

Content Overview based on the attributes required:

	manager_count	total_salary
1	2	54000

Solution 7b

b) Find the minimum, maximum, and average staff salary.

```
SELECT MIN(salary) as minimum_salary, MAX(salary) as maximum_salary, AVG(salary)
as average_salary
FROM Staff;
```

Primary Keys: none

Foreign Keys: none

Degree of Resulting View: 3

Cardinality of the Resulting View: 1

Content Overview based on the attributes required:

	minimum_salary	maximum_salary	average_salary
1	9000	30000	17000.0

Solution 7c

c) For each branch office with more than one member of staff, find the number of staff working in each branch and the sum of their salaries.

```
SELECT Branch.branchNo, COUNT(*) AS staff_count, SUM(Staff.salary) AS total_salary
FROM Staff
JOIN Branch ON Branch.branchNo = Staff.branchNo
GROUP BY Branch.branchNo
HAVING COUNT(*) > 1;
```

Primary Keys: Branch table- branchNo (branch.branchNo)

Foreign Keys: staff.branchNo references branch.branchNo

Degree of Resulting View: 3

Cardinality of the Resulting View: 2

Content Overview based on the attributes required:

	branchNo	staff_count	total_salary
1	B003	3	54000
2	B005	2	39000

Solution 7d

d) Construct a list of all cities where there is either a branch office or a property.

```
SELECT city
FROM Branch
UNION
SELECT city
FROM PropertyForRent;
```

Primary Keys: none

Foreign Keys: none

Degree of Resulting View: 1

Cardinality of the Resulting View: 4

Content Overview based on the attributes required:

	city
1	Aberdeen
2	Bristol
3	Glasgow
4	London

Solution 7e

e) Construct a list of all cities where there is both a branch office or a property.

```
SELECT city
FROM Branch
INTERSECT
SELECT city
FROM PropertyForRent;
```

Primary Keys: none

Foreign Keys: none

Degree of Resulting View: 1

Cardinality of the Resulting View: 3

Content Overview based on the attributes required:

	city
1	Aberdeen
2	Glasgow
3	London

Solution 7f

f) Find the total number of Assistants, and the sum and average of their salaries.

```
SELECT COUNT(*) AS number_of_assistants, SUM(salary) AS total_salary, AVG(salary)
AS average_salry
```

```
FROM Staff
```

```
WHERE oPosition = 'Assistant';
```

Primary Keys: none

Foreign Keys: none

Degree of Resulting View: 3

Cardinality of the Resulting View: 1

Content Overview based on the attributes required:

	number_of_assistants	total_salary	average_salry
1	3	30000	10000.0

Solution 7g

g) For each branch office, list the staff numbers and names of staff who manage properties alongside the properties they manage.

```
SELECT
```

```
    Branch.branchNo,
```

```
    COALESCE(COUNT(DISTINCT Staff.staffNo), 0) AS staff_count,
```

```
    MAX(CASE WHEN Staff.oPosition = 'Manager' THEN Staff.fName || ' ' || Staff.lName
END) AS manager_name,
```

```
    GROUP_CONCAT(DISTINCT PropertyForRent.propertyNo) AS properties_managed
```

```
FROM Branch
```

```
LEFT JOIN Staff ON Branch.branchNo = Staff.branchNo
```

```
LEFT JOIN PropertyForRent
```

```
    ON Staff.staffNo = PropertyForRent.staffNo
```

```
    AND PropertyForRent.branchNo = Branch.branchNo
```

```
GROUP BY Branch.branchNo;
```

Primary Keys: branch.branchNo, staff.staffNo

Foreign Keys: staff.branchNo references (branch.branchNo) , propertyForRent.staffNo
(references staff.staffNo), propertyForRent.branchNo (references branch.branchNo)

Degree of Resulting View: 4

Cardinality of the Resulting View: 5

	branchNo	staff_count	manager_name	properties_managed
1	B002	0	<i>NULL</i>	<i>NULL</i>
2	B003	3	Susan Brand	PG16, PG21, PG36
3	B004	0	<i>NULL</i>	<i>NULL</i>
4	B005	2	John White	PL94
5	B007	1	<i>NULL</i>	PA14