

## **Tutorial 8 (Solution)**

### **SQL**

#### **Question 1**

```
SELECT E.eid
FROM   Employees E
WHERE  E.salary = (SELECT MAX (E2.salary)
                  FROM   Employees E2
                  WHERE   E2.salary ≠ (SELECT MAX (E3.salary)
                                      FROM   Employees E3 ))
```

#### **Question 2**

(i)

```
UPDATE employee
SET    city = 'Newtown' AND street = 'Newstreet'
WHERE  person-name = 'Mark';
```

(ii)

```
UPDATE works
SET    salary = salary*1.1
WHERE  company-name = 'FaceMatch';
```

(iii)

```
UPDATE works
SET    salary = salary*1.1
WHERE  person-name IN (SELECT manager-name
                       FROM   manages)
AND    company-name = 'FaceMatch';
```

### Question 3

(i)

Allowed. Insert ('X', 123, 'CMSC', null) into student. This will be disallowed if "gpa" is not allowed to be null however.

(ii)

Not allowed. It is not clear how to change the base tuples in response to a change in the average.

### Question 4

The view shows the average rental by location of long-term rentals (i.e. more than seven days in duration).

The view is not updatable for the following three reasons:

- It is defined on multiple tables (CHALET and RENTAL). The primary keys of both these tables are not available through this view.
- It is defined using the grouping function (GROUPBY LOCATION). The individual tuples are not accessible as the result groups the tuples based on the attribute LOCATION.
- It is defined using the aggregate functions (AVG). Modifying 'average' price does not make any sense since this value is based on a function of individual prices in the tuples.