

# Active Databases (1)

## Exercices

Consider the following relational schema:

**Employee** (Name, Salary, Department)

**Department** (DeptNo, Manager)

1. Define the following triggers in *Starburst*, *Oracle*, and *DB2*:
  - a. A rule that, whenever a department is deleted from the database, sets to **NULL** the value of the **Department** attribute for those tuples in relation **Employee** having the number of the deleted department.
  - b. A rule that whenever a department is deleted from the database, deletes all employees in the deleted department.
  - c. A rule that, whenever the salary of an employee exceeds the salary of its manager, sets the salary of the employee to the salary of the manager.
2. Define in *Starburst* or *Chimera* a deferred **trigger** R1 that, whenever an employee who is manager is deleted, also deletes all employees in the department managed by the deleted employee, along with the department itself.

Define another deferred **trigger** R2 that, whenever salaries are updated, checks the average of the updated salaries; if it exceeds 50'000 then it deletes all employees whose salary was updated and now exceeds 80'000.

Consider next a database containing 6 employees: Jane, Mary, Bill, Jim, Sam and Sue, with the following management structure:

- Jane manages Mary and Jim
- Mary manages Bill
- Jim manages Sam and Sue.

Suppose now that a user transaction deletes employee Jane and updates salaries in a way such that the average updated salary exceeds 50'000 and Mary's updated salary exceeds 80'000. Describe the trigger processing started at the end of this transaction.