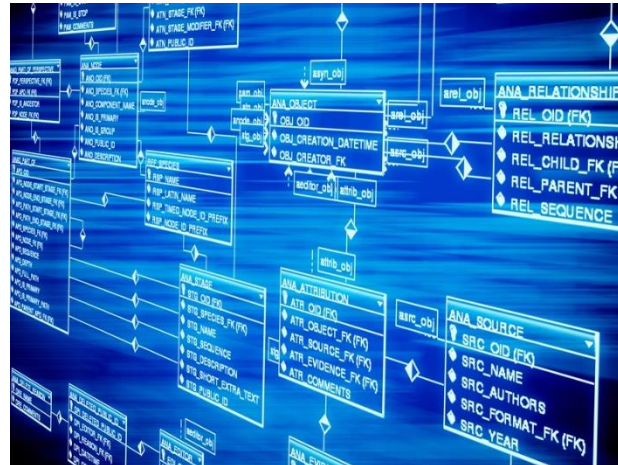


Politecnico di Milano - AA 2018-2019

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Exercises 22 October 2018



EXERCISE

Consider the following database:

EMPLOYEE(id, name, role, department)

TRIP(code, employee, destination, date, km, reg_plates)

CAR(reg_plates, model, cost_km)

DESTINATION(name, country)

and the following view:

TRIPS(employee, km_tot, total_cost)

Write two active rules that calculate the value of the view as a result of insertion of new trips:

a) **in incremental way**

b) **recalculating the entire view**

Incremental way

CREATE TRIGGER CalculateIncrementalView

AFTER INSERT ON Trip

FOR EACH ROW

BEGIN

UPDATE Trips

SET km_tot = km_tot + new.km,

total_cost = total_cost + new.km * (**SELECT** cost_km

FROM Car

WHERE reg_plates = new.reg_plates)

WHERE employee = new.employee

END

Recalculating the view

```
CREATE TRIGGER CalculateViewEntirely
AFTER INSERT ON Trip
FOR EACH STATEMENT
BEGIN
  DELETE FROM Trips;
  INSERT INTO Trips
    SELECT employee, sum(km), sum(km*cost_km)
    FROM Trip T JOIN Car C ON T.reg_plates = C.reg_plates
    GROUP BY employee
END
```

EXERCISE

A database supports a song contest, voted by a technical jury and using also a televote system. Specify a set of triggers for the automatic management of voting, taking into account the following rules. The system keeps track of the phone voting received in a certain time interval (managed by transactions): **from the same telephone number only the first 10 votes can be accepted, which will contribute to the total number of televotes of the corresponding songs.** In parallel, **the jury expresses a score between 1 and 10 for each song: each vote will update the total number of jury votes and the total score of the corresponding song in table VOTE.** **The voting process ends when all the members of the jury have voted all the songs; at this point, the winning song (ties are allowed) is identified, by assigning a weight of 50% to the total number of televotes and the total score of the two voting systems.** Assume that the VOTE table is initialized with all the songs and that all the scores are set to 0 and CompositeVote= NULL.

EXERCISE

JURYMEMBER (IDmember, Lastname, Name)

SONG (IDsong, Title, Author, Singer)

JURYVOTE (IDmember, IDsong, Score)

TELEVOTE (TelephoneNumber, Time, IDsong)

VOTE (IDsong, #Televotes, #JuryVotes, TotJuryScore, CompositeVote, Winner)