Systems and Solving Techniques for Knowledge Representation

– Datalog Part II –

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EXERCISES

Exercise (I) [was due on 19.10.2015]

Given the following relational database schema (* indicates primary keys):

- *employee*(*code*$*$, *name*, *age*, *salary*)
- *supervision*(*boss*$*$, *employee*$*$)

Write the following in Datalog:

1. find code, name and salary of the employees whose age is more than 30
2. find the code of all boss s.t. at least one of his/her employees earns more than 40
3. find name and age of all boss s.t. at least one of his/her employee earns more than 40
4. for each employee, find all other employees that are higher in the chain of responsability

Exercise (II) [was due on 19.10.2015]

Given the following relational database schema:

- *film*(*filmCode*$*$, *title*, *director*, *year*, *rentCost*)
- *actor*(*actorCode*$*$, *surname*, *name*, *sex*, *bornDate*)
- *performance*(*filmCode*$*$, *actorCode*$*$, *role*$*$)

Write the following in Datalog:

1. find the film titles in which Henry Fonda was performer (actor)
2. find the film titles in which the director also was a performer

What you are requested to do

What you are requested to do is:

1. sending by email at mmaratea@dbai.tuwien.ac.at before 24:00 (resp. 12:00) of the day before (resp. same day) if lecture is done in the morning (resp. in the afternoon), your solutions (*dl) you would like to present, and *db files, and [at least related to FOUR queries, at least TWO from Ex (III) and at least two from Ex (IV).]
2. for the queries related to Ex (III), trying such queries using a grounder and a solver.
3. coming to the black-board! (if time/space allow :)

Exercise (III) [due by 22.10.2015]

Given the following relational database schema

- *beers*(*name*$*$, *manufacturer*)
- *sells*(*bar*$*$, *beer*$*$, *price*)
- *associate*(*bar_s*$*$, *bar_d*$*$)

1. find the manufacturers of the beers "John's bar" sells
2. find the number of beers that "John's bar" sells at a price higher than "Anns's bar"
3. find the bars that sell exactly two beers
4. find the bars that sell more than three beers
5. find the bars that are associated, directly or indirect trough a chain of bar associations to "John's bar"
6. find the most expensive beer
7. find the bars that sell more beers

Exercise (IV) [due by 22.10.2015]

Apply the T_p operator to the program (.dl + .db) of Exercize (I) and (II).

This can be sent as doc or pdf file.