

Fundamentals of Artificial Intelligence and Knowledge Representation – Module 4

Prof. Federico Chesani – 25th of January, 2021

Available time: 25 min. + 10 min. for submitting the essay

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FamilyNameFirstName.date.pdf/.docx

For example, if you are John Smith, the file will be named:

SmithJohn.20210125.pdf

Exercise

- 1) The candidate is invited to shortly introduce rule-based forward reasoning and the RETE algorithm.
- 2) The candidate is invited to write a meta-interpreter **verbose(Goal)** that is evaluated to true if **Goal** can be proved; moreover, **after** having solved any sub-goal, the meta-interpreter must print (at the standard output) the sub-goal itself. Hence, only goals that have been proved will be printed at the output.

For example, given the program:

```
p(X) :- q(X), r(X).  
p(X) :- s(X).  
q(X) :- t(X).  
r(1).  
r(2).  
r(3).  
t(1).  
t(2).
```

and the query `?- verbose(p(X))`, the following outcomes are expected:

```
?- verbose(p(X)).  
Solved: t(1)  
Solved: q(1)  
Solved: r(1)  
Solved: p(1)  
X = 1 ;  
Solved: t(2)  
Solved: q(2)  
Solved: r(2)  
Solved: p(2)  
X = 2 ;  
false.
```