

Fundamentals of Artificial Intelligence and Knowledge Representation – Module 4

Prof. Federico Chesani – 16th of June, 2020

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.20200616.pdf

Exercise

The candidate is invited to present the Prolog “vanilla” meta-interpreter, and to shortly comment (in natural language) the meaning of the clauses.

After that, the candidate is invited to write a meta-interpreter **solve(Goal, ListOfSubGoals)** that is evaluated to true if **Goal** can be proved; moreover, in the parameter **ListOfSubGoals** the meta interpreter will return the list of the subgoals used to prove the **Goal**.

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).  
s(12).
```

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

```
?- solve(p(X), Result).  
X = 1,  
Result = [p(1), q(1), t(1), r(1)] ;  
X = 2,  
Result = [p(2), q(2), t(2), r(2)] ;  
X = 12,  
Result = [p(12), s(12)].
```