

Übungen zur Vorlesung: Wissensbasierte Systeme

Blatt 4

Exercise 4.1:

Modify the depth-bound meta-interpreter (below) so that

- the bound is on the total length of the proof, where the length is the total number of instances of base-level atoms that appear in the proof.
- different base-level atoms can incur different costs on the bound. For example, most atoms could have zero cost, and some atoms could incur a positive cost.

Depth-bounded meta-interpreter:

bprove(true, D).

bprove((A & B), D) <- bprove(A, D) \wedge bprove(B, D).

bprove(H, D) <- $D \geq 0 \wedge D1$ is D-1 $\wedge (H \leq B) \wedge$ bprove(B, D1)

Exercise 4.2:

The following rules are designed to determine whether a person P has achieved a score S of at least 50 in at least two exercises E.

scored-high-twice(P) <= $E1 \neq E2 \wedge$ scored-high(P, E1) \wedge scored-high(P, E2).

scored-high(P, E) <= score(P, E, S) $\wedge S \geq 50$.

These are the facts about Anton:

score(anton, exercise1, 63).

score(anton, exercise2, 47).

score(anton, exercise3, 73).

Determine the derivation tree using the top-down procedure for the Unique Name Assumption for the query

?scored-high-twice(anton).

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