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Group 407

SLD Resolution

For this subject I chose the following rules, goal, and questions.

Rules:

If a person is a student and has a grade greater than five, then the person passes the exam.

If a person passes the exam, then the person receives a diploma.

If a person receives a diploma and has a CV, then the person can apply for a job.

Goal:

The person can apply for a job.

Questions:

Is the person a student? (yes/no)

What grade did the person get? (number)

Does the patient have a CV? (yes/no)

These can be represented as:

KB = {[¬Student, ¬Grade, PassedExam],

[¬PassedExam, Diploma],

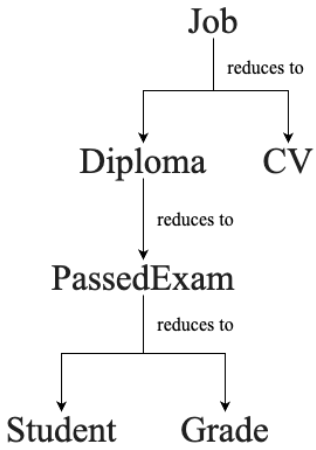
[¬Diploma, ¬CV, Job]}

Goal = [Job]

The answers determine whether the predicates Student, Grade, and CV are true or false.

Two methods to perform resolution on Horn Clauses are backward chaining and forward chaining. **Backward chaining** starts from the final goal and reduces it to subgoals that compose it. The process continues recursively until either all subgoals are satisfied, or no further derivations can be made.
Forward chaining iterates through the clauses, and if all negative literals in a clause are marked as true, the positive literal is also marked as true. The process repeats until either the goal is reached or no new facts can be derived.

For the given example starting from the goal Job we can observe the subgoals that compose it:



If Student, Grade and CV are true, then the answer is YES, otherwise the answer is NO.

Applying forward chaining, and considering the given predicates as positive, we derive the following sequence of facts:

[Student], [Grade], [CV] – Student, Grade, and CV are marked

[¬Student, ¬Grade, PassedExam] – PassedExam is marked

[¬PassedExam, Diploma] – Diploma is marked

[¬Diploma, ¬CV, Job] – Job is marked