

LAB 4

S is a finite set of propositional clauses, written in CNF in the format $[[w, s, n(p)], [a, n(w), r, t], [q]]$. With $n(p)$ the negation of p is noted.

Implement the Davis-Putnam SAT procedure. For the input data S, the procedure will display YES, respectively NOT, as S is satisfiable or not. In the case of YES, the procedure will also display the truth values assigned to the literals (i.e. the solution $\{w/\text{true}; s/\text{false}; p/\text{false} \dots\}$). Choose two strategies of selection of the atom to perform the \bullet operation and compare the results.

The input data will be read from a file and the results will be displayed in a file.

The procedure will be implemented in the version presented at the course (from Ronald Brachman, Hector Levesque. Knowledge representation and reasoning, Morgan Kaufmann 2004).

Suggestion for implementation:

`dp([],[]).`

`dp(L,_):-member([],L),!,fail.`

`dp(L,[C/A|S]):- ... choose the atom C, perform the \bullet operation for C; respectively for $n(C)$... in both cases, for the resulting list of clauses, L1... dp(L1,S).`