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Davis, Martin, Putnam, Hilary. "A Computing Procedure for Quantification Theory". J. ACM 7 201–215 (1960).

The authors describe an algorithm that yields a proof for logically valid formulas, and which runs indefinitely for logically invalid ones. The algorithm is as follows:

1. The formula is inputted in its prenex normal form and all quantifiers are eliminated.
2. Generate all possible ground instances fir the propositions in the formula one at a time.
3. Check if the instance can be satisfied.
4. If satisfied return proof else move to next instance.

Richard E. Fikes, Nils J. Nilsson. "STRIPS: A New Approach to the Application of Theorem Proving to Problem Solving", (Winter 1971)

In STRIPS, the world or state is represented using first order logic predicates. An operator is executed to change the world, and a combination of operators is to be found so that when executed it produces a world that satisfies certain goals. Each operator is defined by its effects and the conditions under which it is applicable.

A theorem solver (as the one from the above Davis-Putnam paper) is employed to check if a state is the goal state. If it is not, then the "difference" between the current state and goal state is identified, the relevant operator that reduces the difference is identified, and the sub-problem of getting to the state where the preconditions of that operator is solved. This repeated till all goals are achieved. The theorem solver is especially important is testing whether preconditions of operators are satisfied in a given state.

A. Blum and M. Furst, "Fast Planning Through Planning Graph Analysis", Artificial Intelligence, 90:281--300 (1997).

In this paper, the authors introduce a new planner, Graphplan, which plans in STRIPS-like domains. It is uses a planning graph to find solution plans. In the planning graph, there are alternate levels of proposition levels and actions levels. The first level is a proposition level consisting of a node for each proposition that is true in the initial state. The edges from these nodes connect them to action nodes that have their preconditions satisfied. Importantly, mutual exclusion (interference or competing needs) relations between nodes are kept track off and propagated so as to reduce the number of nodes to be searched. The algorithm is as follows:

1. At time step i, extend the proposition level i-1 to action and proposition level i.
2. Search for proposition level i for node that satisfies all goals.
3. If goals are satisfied, return.
4. Else, repeat.
5. If graph levels off, solution does not exist.