Research Review on Planning

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The first major planning system was called STRIPS. It was the planning component of SRI's Shakey robot, used for navigation [2]. Although STRIP's algorithmic approach wasn't that influential, it's representation language had a huge impact in the field of AI Planning. Representation Languages we use today are heavily influenced by it. For example the Problem Domain Description Language which has been used as the standard language for the International Planning Competition since 1998 [1].

In the 1970s Linear Programming was the most common approach used by planners. In it a problem was divided into subproblems each with a subgoal, and then combining the actions these actions to accomplish the goal. There were however some problems that this method could not solve such as the Sussman Anomaly. In this problem there are three blocks A, B and C. B and A are on the table, while C is on top of A. The goal is to have A atop B which is atop C. However since we normally broke down the problem into subgoals, wewould not be able to solve it using linear programming[3].

After this for almost 20 years Partial Order Planners dominated research. However in the late 90s people got more interested in state space searches instead with the introduction of GraphPlan developed by Blum and Furst in 1997[4]. This algorithm is based on building a planning graphs built by relaxing some of the restrictions in the problem domain.

REFERENCES:

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[3] G.J. Sussman, *A Computer Model of Skill Acquisition.* Elsevier Science Inc. New York, NY, USA *,* 1975.

[4] Avrim L. Blum and Merrick L. Furst, *Fast Planning through Planning Graph Analysis.* Artificial Intelligence, 90:281–300, 1997.