Research Review on Planning

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STRIPS is the first automated planning system brought up by Fikes and Nilsson in 1971.[1] The method employs means-ends analysis to solve the problem.[2] It first identifies the differences between the present model and goal. Then it starts to search for applicable operators that could reduce the differences and moves forward to the next operation until all goals are met.
STRIPS is originally designed as the planning component of the software for the Shakey robot project at SRI.[1] The key impact of STRIPS is the way of representation a problem using action language, which consists of initial states, goals and set of actions (includes pre and post conditions).

Action Description Language (ADL)

ADL is brought up by Edwin Pednault in 1986, considered as an advancement of STRIPS as it relaxes some restrictions and modifies certain definitions from STRIPS to meet the need for solving more realistic world problems. [3][4]
ADL is designed particular for robot and its major contribution is its application to many real-world problems.

Planning Domain Definition Language (PDDL)

PDDL is later introduced as a standardized AI planning language after STRIPS and ADL. It was first introduced by Ghallab *et al.* in 1998.[1] Several extensions were developed afterwards and the recent version PDDL 3.0 was brought up by Gerevini and Long in 2005.[1] The essence of PDDL is to adopt pre and post condition syntax to describe the problem and the effect of actions.
The initial impact of PDDL is its application to classical planning problems and later PDDL has led to the development of the standard benchmark problem sets. The most lasting impact and version of PDDL is the timed/temporal extension, known as PDDL 2.1 by Fox and Long in 2003.[5]

[1] Russell, Stuart J.; Norvig, Peter (2003), Artificial Intelligence: A Modern Approach (2nd ed.), Upper Saddle River, New Jersey: Prentice Hall, ISBN 0-13-790395-2
[2] Richard E. Fikes, Nils J. Nilsson (Winter 1971). "STRIPS: A New Approach to the Application of Theorem Proving to Problem Solving". Artificial Intelligence. 2 (3–4): 189–208. doi:10.1016/0004-3702(71)90010-5.
[3] Edwin Pednault. "IBM Research Website: Pednault". Retrieved 29 March 2013.l
[4] Pednault. Formulating multi-agent dynamic-world problems in the classical planning framework. In Michael Georgeff and Amy Lansky, editors, Reasoning about actions and plans pages 47-82. Morgan Kaufmann, San Mateo, CA, 1987.
[5] Rintanen, Jussi. "Impact of Modeling Languages on the Theory and Practice in Planning Research." Twenty-Ninth AAAI Conference on Artificial Intelligence. 2015.