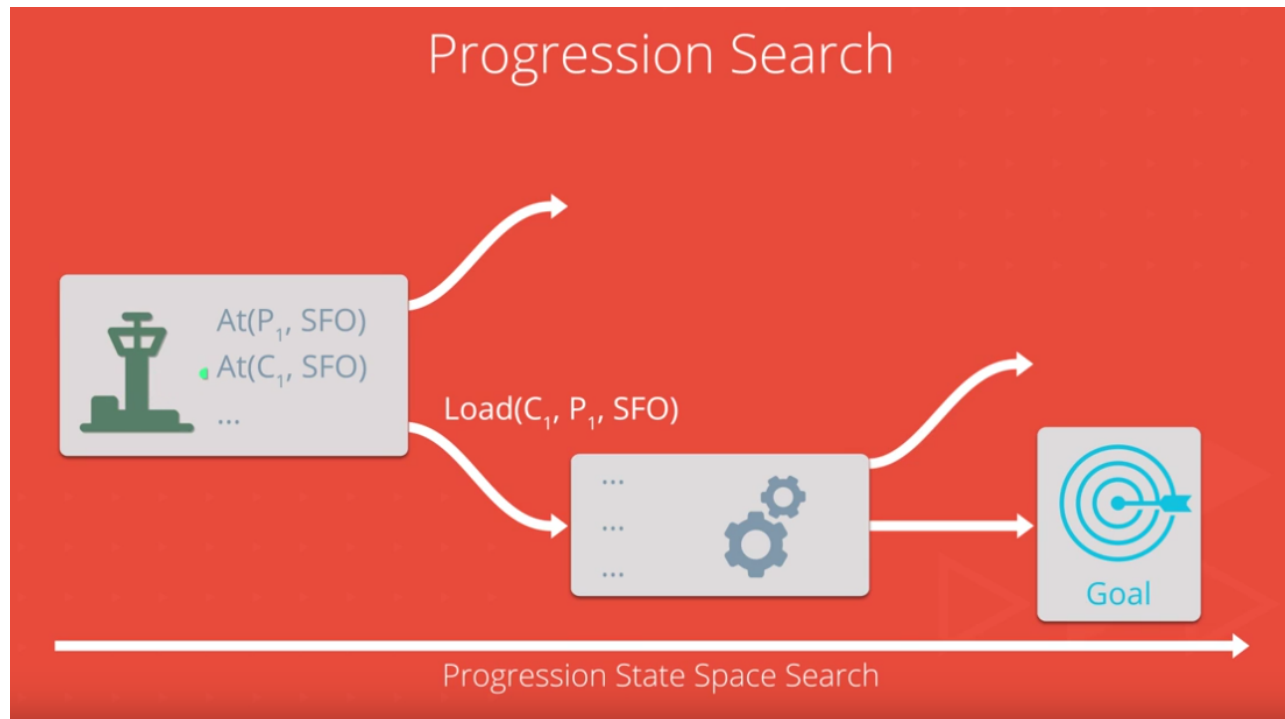


Review of AI Planning

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AI Planning is a branch of Artificial Intelligence, and is booming due to the development of machine learning. But it's not like other field, it's about making decision which we should make an agent help people solve complex problem and settle it efficiently.

STRIPS (Stanford Research Institute Problem Solver) is an automated planner developed by Richard Fikes and Nils Nilsson in 1971 at SRI International. This language is the base for most of the languages for expressing automated planning problem instances in use today. This language is named action language, which means that we should define the problem and give the conditions, operators, initial states and goal state by formal language.

PDDL (Planning Domain Definition Language) is an attempt to standardize Artificial Intelligence (AI) planning languages, which was first developed by Drew McDermott and his colleagues in

1998. It was inspired by STRIPS and ADL, which mainly to make the 1998/2000 International Planning Competition (IPC) possible, and then evolved with each competition. At its core is a simple standardization of the syntax for expressing this familiar semantics of actions, using pre- and post-conditions to describe the applicability and effects of actions.

HTN (Hierarchical task network) is an approach to automated planning in which the dependency among actions can be given in the form of network. In HTN, planning problems are solved by providing a set of tasks including primitive tasks, compound tasks and goal tasks. There are some best-known domain-independent HTN-planning, such as SIPE-2, O-Plan and UMCP.

[1] Stuart Russell, Peter Norvig, "Artificial Intelligence: A Modern Approach" 3rd edition chapter 10 or 2nd edition Chapter 11

[2] <https://en.wikipedia.org/wiki/STRIPS>

[3] https://en.wikipedia.org/wiki/Planning_Domain_Definition_Language

[4] https://en.wikipedia.org/wiki/Hierarchical_task_network