

In this chapter, we introduce the basic ideas involved in planning systems. We begin by specifying a simple **planning agent** that is very similar to a problem-solving agent (Chapter 3) in that it constructs plans that achieve its goals, and then executes them. Section 11.2 explains the limitations of the problem-solving approach, and motivates the design of planning systems. The planning agent differs from a problem-solving agent in its representations of goals, states, and actions, as described in Section 11.4. The use of explicit, logical representations enables the planner to direct its deliberations much more sensibly. The planning agent also differs in the way it represents and searches for solutions. The remainder of the chapter describes in detail the basic **partial-order planning** algorithm, which searches through the space of plans to find one that is guaranteed to succeed. The additional flexibility gained from the partially ordered plan representation allows a planning agent to handle quite complicated domains.