

Automated planning plays an important role in many fields of human interest, where complex and changing tasks involve demanding efficiency and error-avoidance requirements. Research in planning is also motivated by capturing the computational aspects of Artificial Intelligence, where planning, being a reasoning side of acting, is one of the key elements. Introduction of time and resources into planning is an important step towards modelling problems from the real world, however planning is generally hard and introduction of time and resources makes it even harder. In this thesis we explore theoretical aspects of planning, temporal reasoning and resource reasoning. Based on these studies we develop our own suboptimal domain-independent planning system that focuses on planning, where time plays a major role and resources are constrained. We test the developed planning system on the planning problems with time and resources from the International Planning Competition 2008 and compare our results with the competition participants.