The aim of the thesis is to design and implement an efficient tool for research and testing of algorithms of the combinatorial optimization. The domain of the planning research will be explained and the steps of design and implementation of such program will be covered. The framework will support two primary formalisms for the description of optimization problems (PDDL, SAS$^+$). The inputs processing will be provided, suitable data structures and efficient implementations of search algorithms will also be included. The emphasis will be on a proper object design and easy extensibility for the future development. To achieve this goal, proven principles of software engineering will be used.