Programming Assignment 4

Aditya Gupta
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1 Planners for Block World

1.1 Introduction

The goal of this lab was to implement a planning agent for solving Block World Problem wherein given N blocks and actions to "pick a block from table", "unstack a block from another block", "release a holding block" and "stack a holding block onto another block" we were required to reach a goal state configuration from an initial state using three different planners, "forward search planner" with BFS and A*; "goal stack planning". The initial and final state is composed of propositions such as `(on 1 2)` and `(ontable 3)`. Each action is a transformation of these propositions which has some `preconditions`, which when true allows us to perform that action and the `effects` of that actions are unified with the current state and the negative literals removed. States are represented in PDDL.

2 Forward Search using BFS

In this search the states are maintained in a queue (initially containing only the initial state) and then every time a element is taken from the queue and checked for satisfying the goals. If it does not satisfy the goals then all actions which are applicable on the current state are taken (after instantiation) and applied on the current state all resulting states pushed onto the queue, in this way we only see states which require equal number of actions from the starting state and we get the optimal solution (minimum number of steps).

Observations

- `1.txt`