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Principles of AI Planning

Exercise Sheet 7

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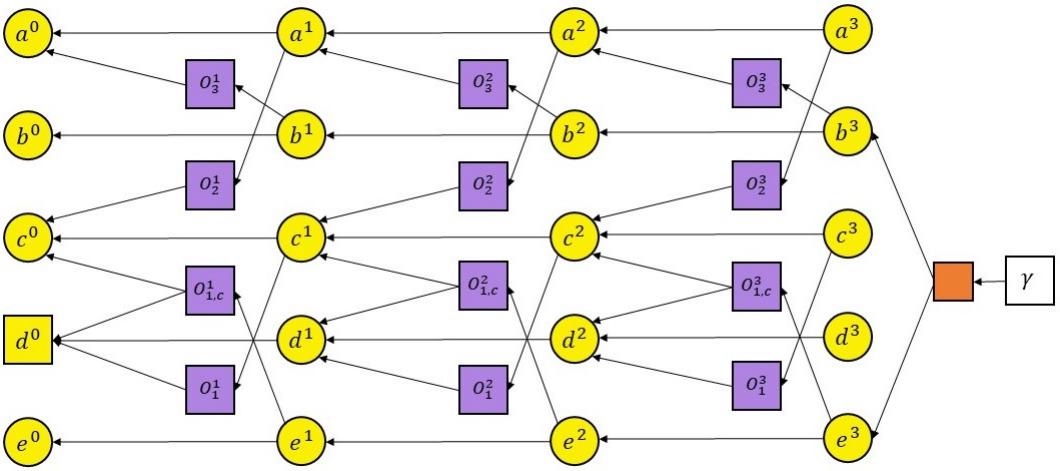
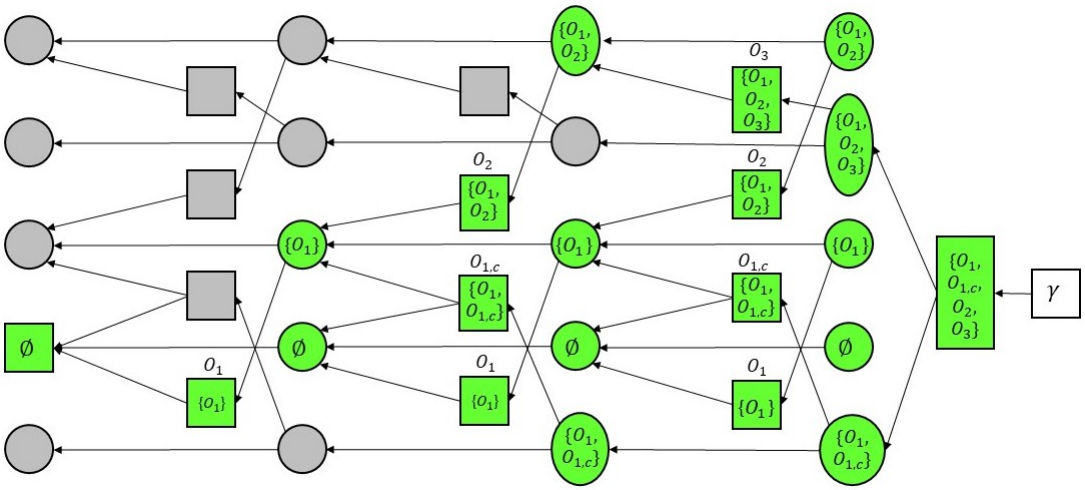
Exercise 8.1 - Relaxed planning graph and heuristics

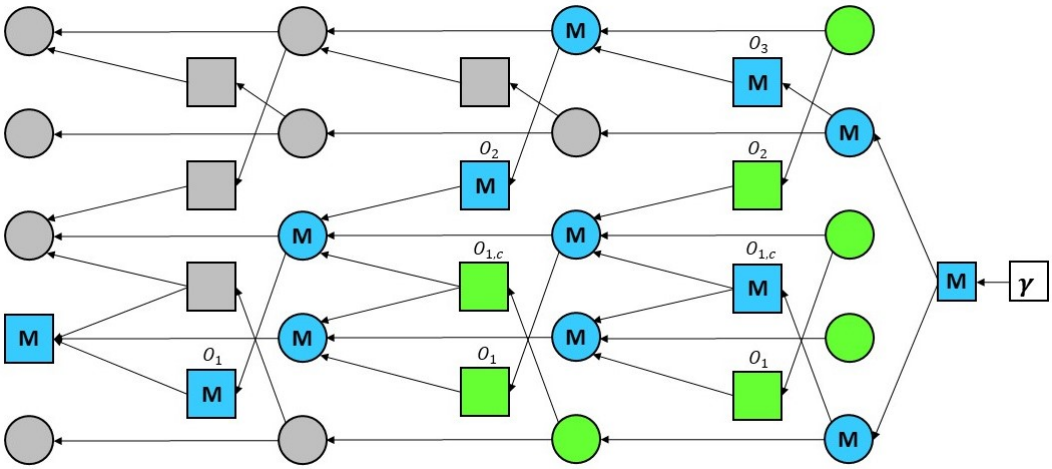
Consider the relaxed planning task Π^+ with variables $A = \{a, b, c, d, e\}$, operators $O = \{o_1, o_2, o_3\}$, $o_1 = \langle d, c \wedge (c \triangleright e)\rangle$, $o_2 = \langle c, a\rangle$, $o_3 = \langle a, b\rangle$, goal $\gamma = b \wedge e$ and initial states $s = \{a \mapsto 0, b \mapsto 0, c \mapsto 0, d \mapsto 1, e \mapsto 0\}$. Solve the following by drawing the relaxed planning graph for the lowest depth k that is necessary to extract a solution



(a) **Calculate $h_{sa}(s)$ for Π^+**
The heuristic value for the initial state is 4.



(b) **Calculate $h_{FF}(s)$ for Π^+**
The heuristic value for the initial state is 4.



Exercise 8.1 - Finite domain representation