

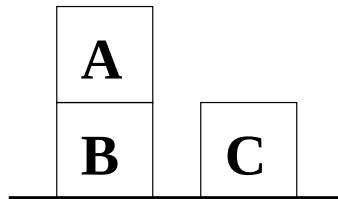
Prodigy

- A classical STRIPS-style planner
 - Domain Representation: objects, operators
 - Problem Representation: initial state, goal state
- Operators have preconditions and effects

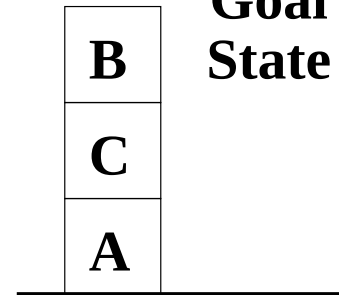
Example – Blocksworld

(On A B)
(On B Table)
(On C Table)
(Clear A)
(Clear C)
(Clear Table)
(Arm–empty)

Initial State



Goal State



(On C A)
(On B C)

[+ whatever]

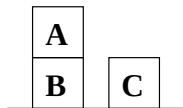
Operators: (Pickup x)

preconds: (Clear x)
(Arm–empty)
adds: (Holding x)
if (On x y), (Clear y)
dels: (Arm–empty)
if (On x y), (On x y)

(Putdown x y)

preconds: (Holding x)
(Clear y)
adds: (On x y)
(Arm–empty)
dels: (Holding x)
if (y != Table), (Clear y)

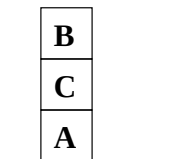
Prodigy/Blocksworld (cont.)



Putdown C A
(Holding C)
(Clear A)

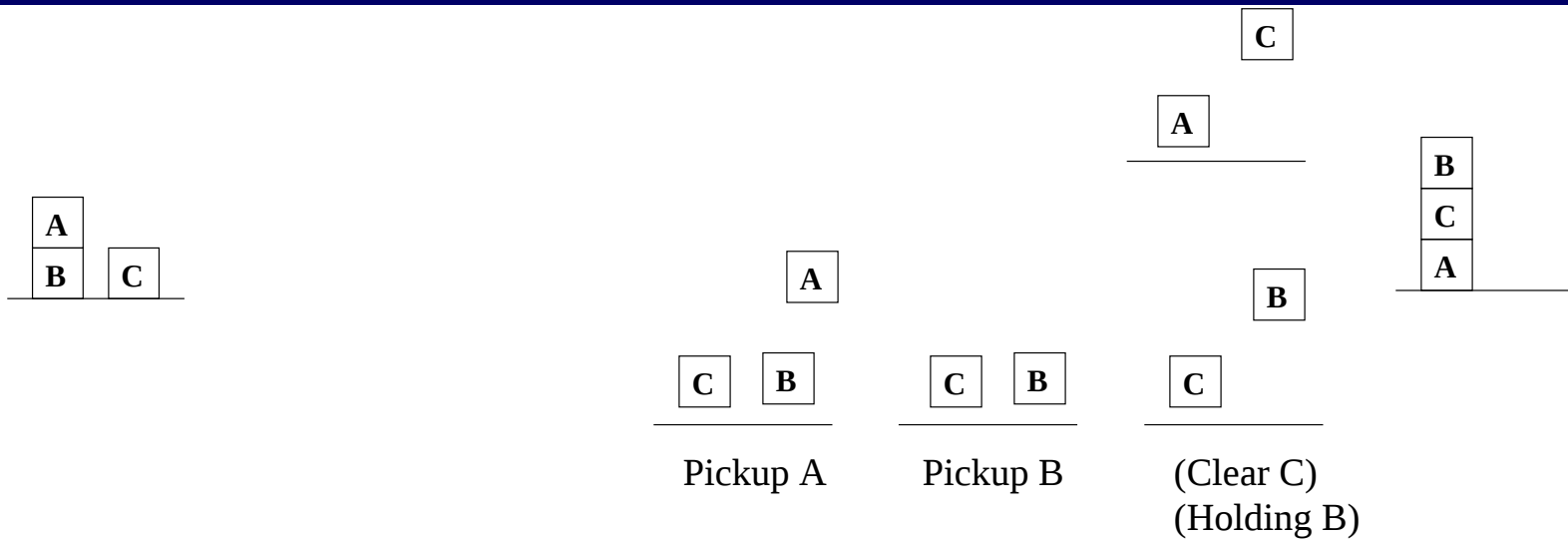
C

A

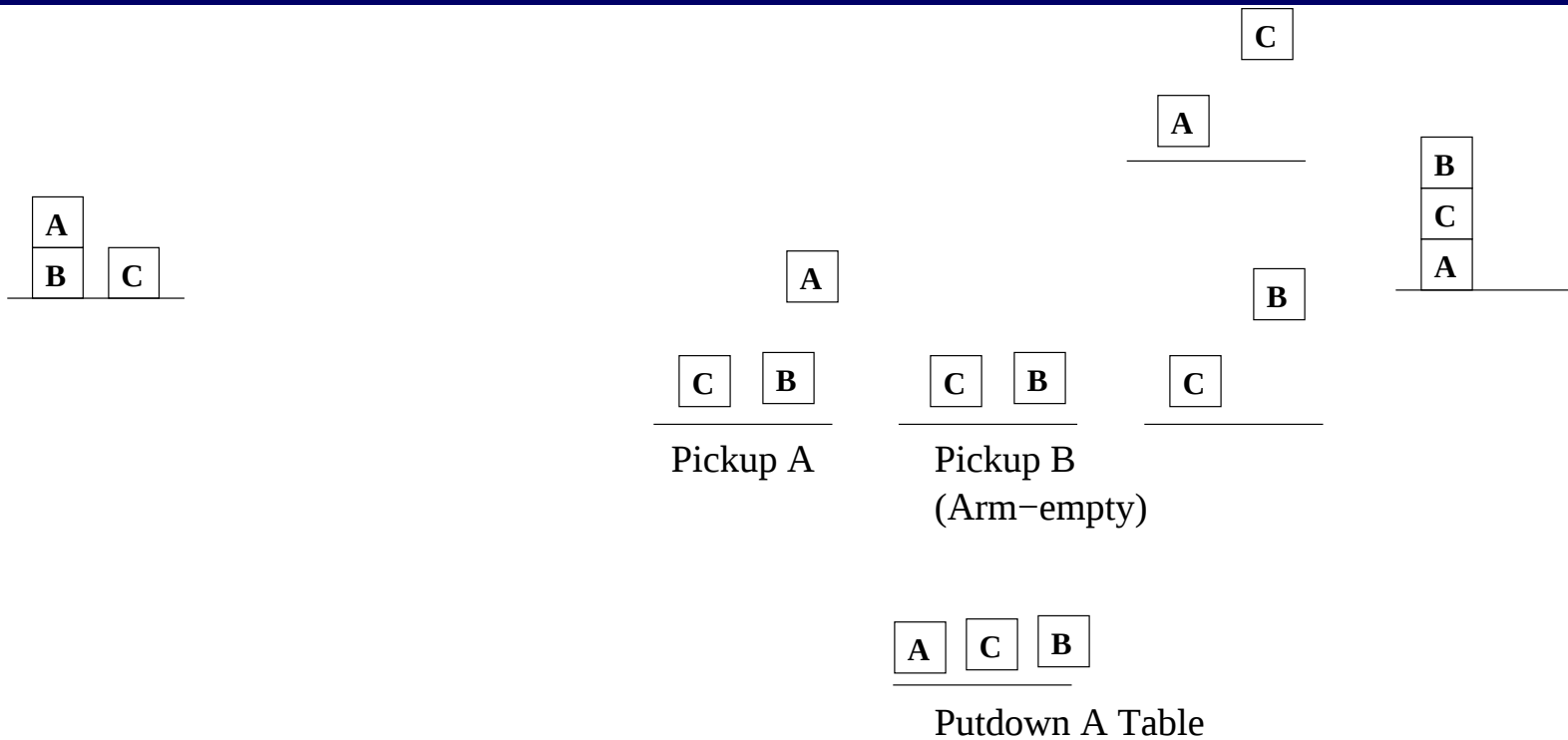


(On C A)
(On B C)

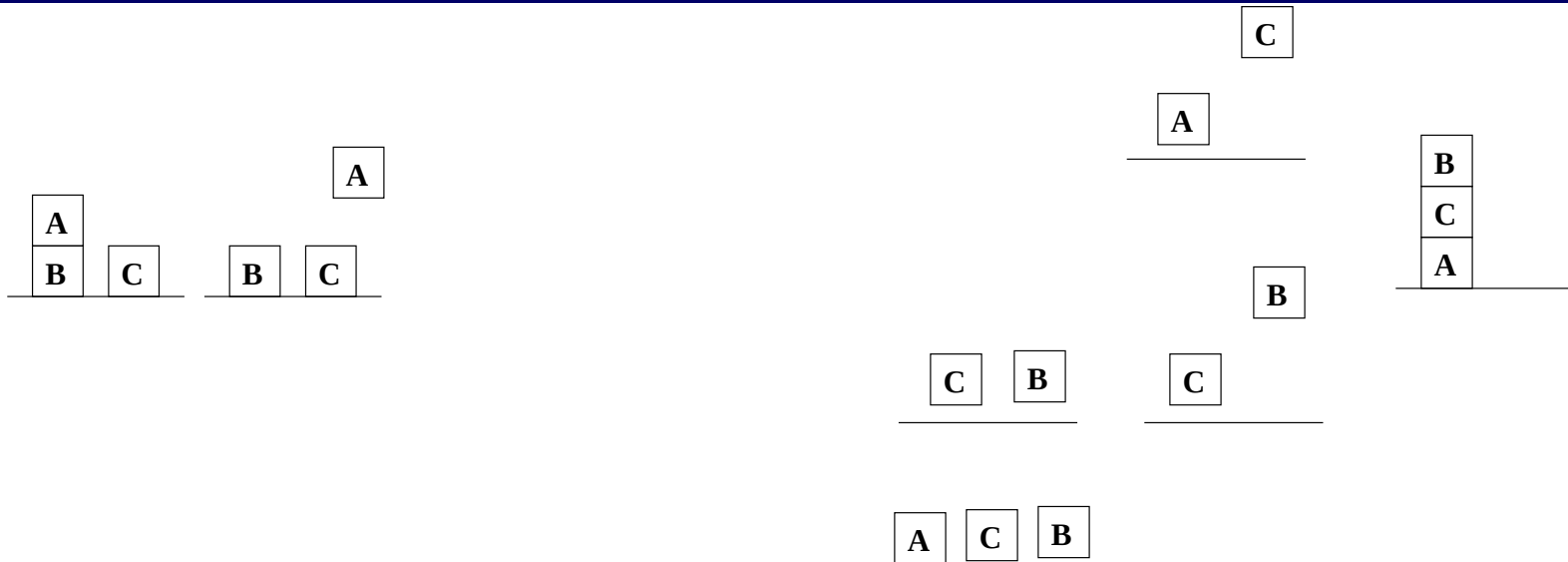
Prodigy/Blocksworld (cont.)



Prodigy/Blocksworld (cont.)

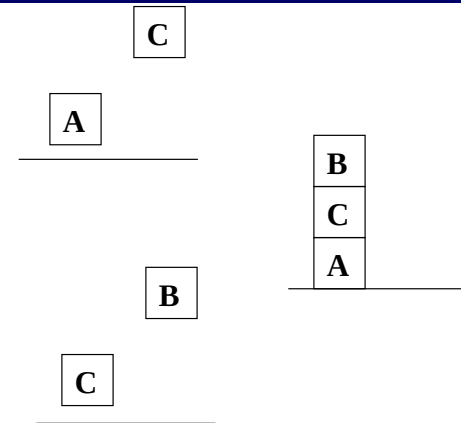
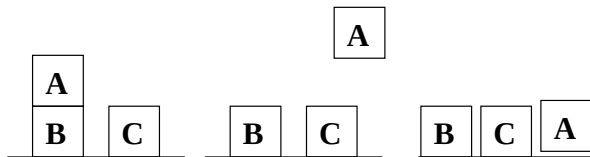


Prodigy/Blocksworld (cont.)



Putdown A Table

Prodigy/Blocksworld (cont.)



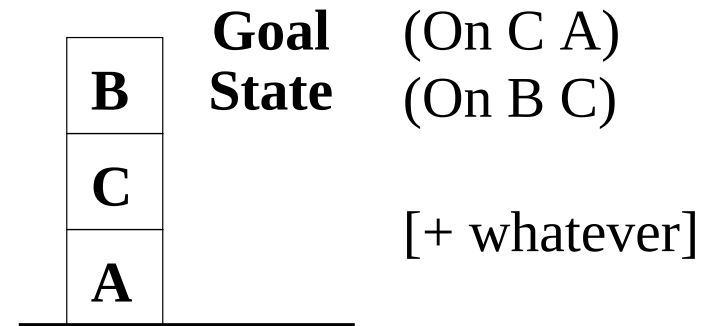
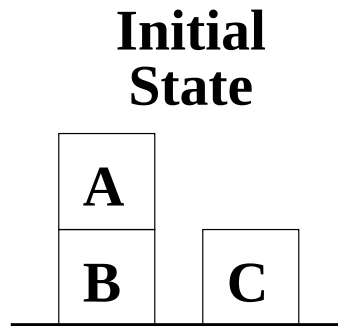
Issues in Planning

- Representations
- Algorithms
- Conditional effects
- Dynamic worlds
- Mixing planning and execution
- Learning
- Large-scale applications

Fairly mature field

Example – Blocksworld

(On A B)
(On B Table)
(On C Table)
(Clear A)
(Clear C)
(Clear Table)
(Arm–empty)



Operators: (Pickup x)

preconds: (Clear x)
(Arm–empty)
adds: (Holding x)
if (On x y), (Clear y)
dels: (Arm–empty)
if (On x y), (On x y)

(Putdown x y)

preconds: (Holding x)
(Clear y)
adds: (On x y)
(Arm–empty)
dels: (Holding x)
if (y != Table), (Clear y)