

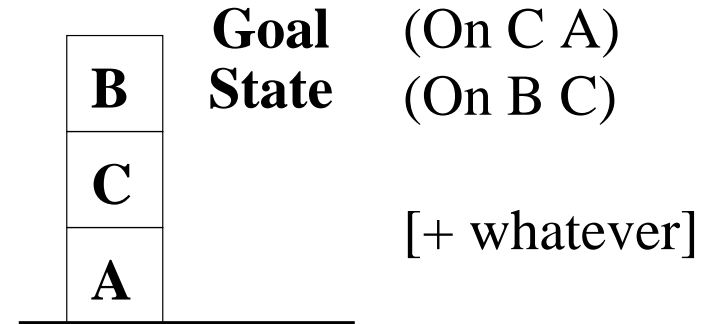
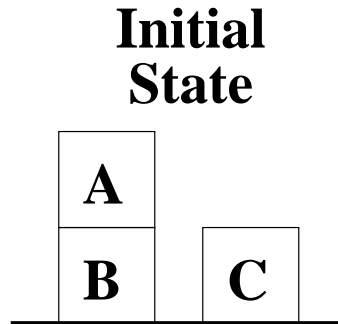
# Prodigy

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- 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)



## Operators: (Pickup x)

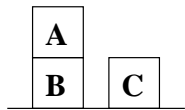
preconds: (Clear x)  
(Arm–empty)  
adds: (Holding x)  
if (On x y), (Clear y)  
dels: (Arm–empty)  
if (On x y), (On x y)

## (Putdown x y)

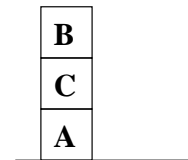
preconds: (Holding x)  
(Clear y)  
adds: (On x y)  
(Arm–empty)  
dels: (Holding x)  
if (y != Table), (Clear y)

# Prodigy/Blocksworld (cont.)

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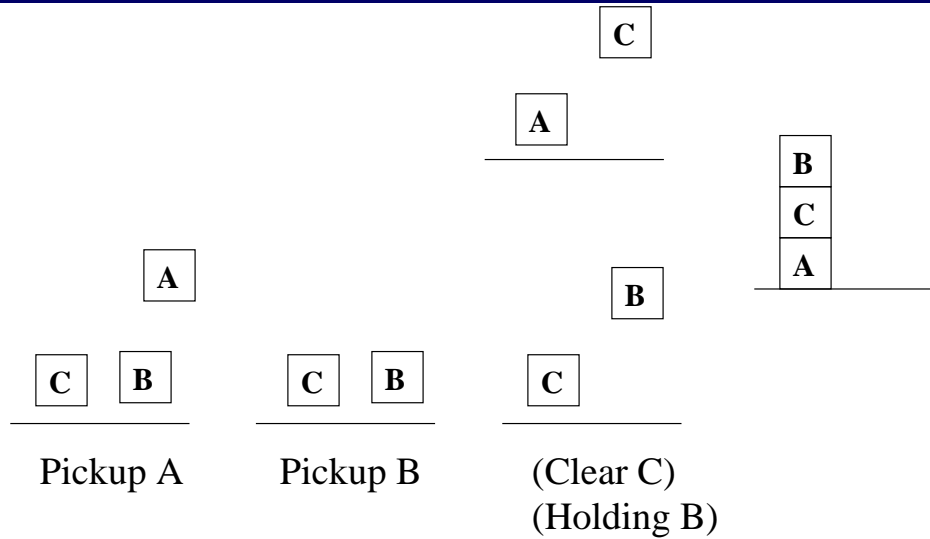
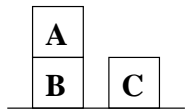
Putdown C A  
(Holding C)  
(Clear A)



(On C A)  
(On B C)

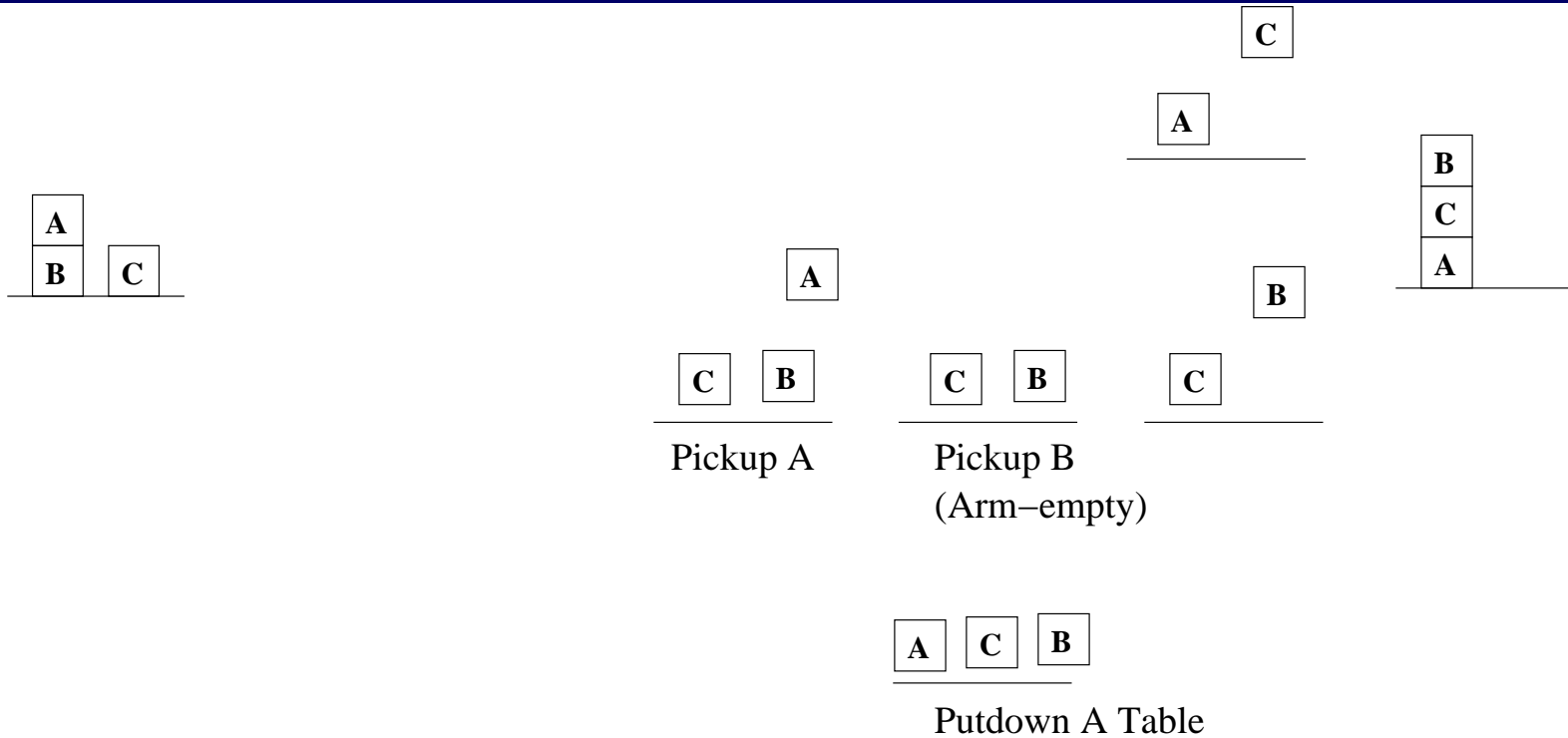
# Prodigy/Blocksworld (cont.)

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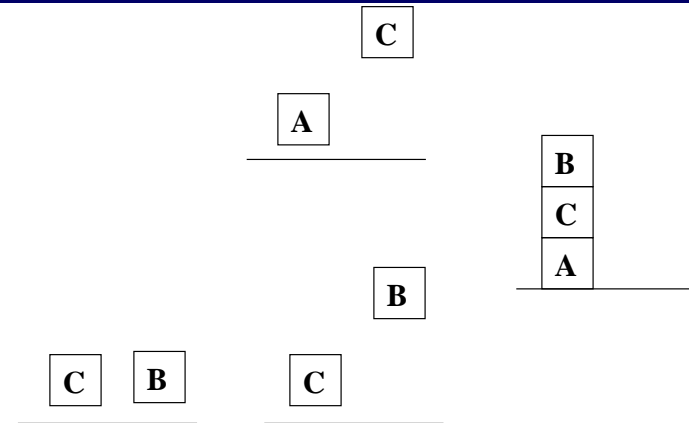
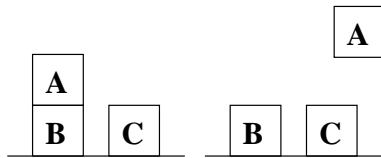
# Prodigy/Blocksworld (cont.)

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# Prodigy/Blocksworld (cont.)

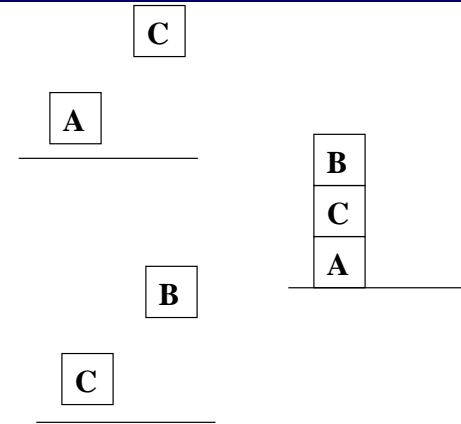
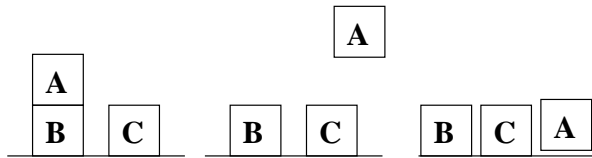
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Putdown A Table

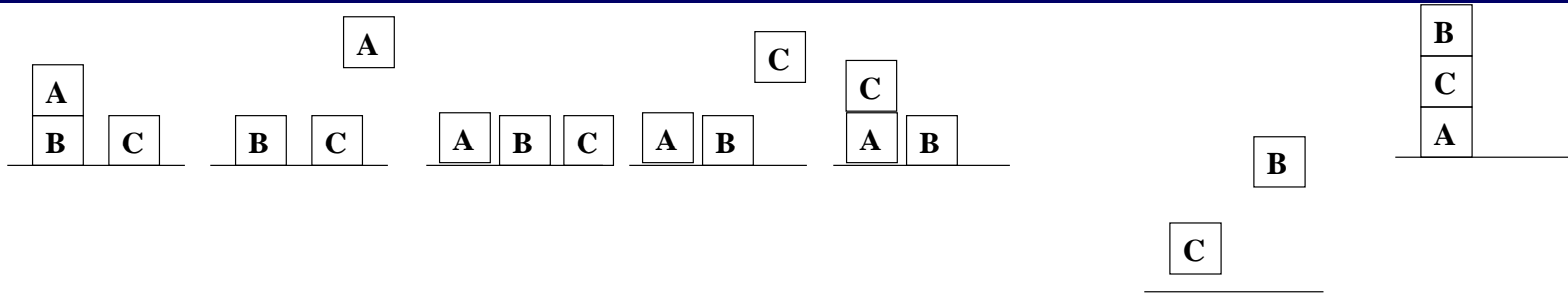
# Prodigy/Blocksworld (cont.)

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# Prodigy/Blocksworld (cont.)

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# Issues in Planning

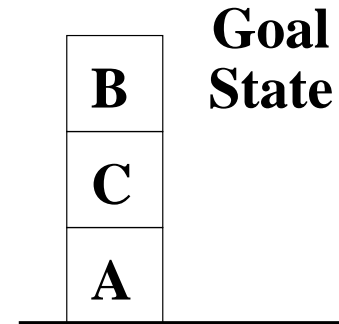
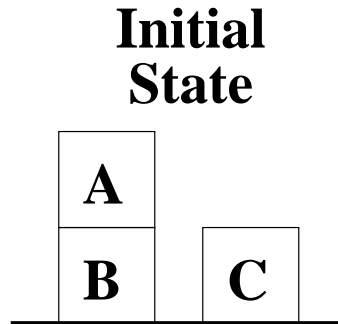
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- Representations
- Algorithms
- Conditional effects
- Dynamic worlds
- Mixing planning and execution
- Learning
- Large-scale applications

Fairly mature field

# Example – Blocksworld

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



(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)