

Question 2 state snapshot

Part3

BFS:

Goal found
(Location: battery
Sample Extracted?: False
Holding Sample?: False
Charged? False, 'move_to_battery')
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
None
Total number of states generated: 3
(Location: battery
Sample Extracted?: False
Holding Sample?: False
Charged? False, 'move_to_battery')
Total number of states generated: 3
None
Total number of states generated: 3
None

Ran 1 test in 0.006s

OK

DFS:

Goal found
(Location: battery
Sample Extracted?: False
Holding Sample?: False
Charged? False, 'move_to_battery')
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
None
Total number of states generated: 2
(Location: battery
Sample Extracted?: False
Holding Sample?: False
Charged? False, 'move_to_battery')
Total number of states generated: 3
None
Total number of states generated: 3

None

Process finished with exit code 0

OK

Part4

BFS:

Goal found

(Location: battery

Sample Extracted?: False

Holding Sample?: False

Charged? False, 'move_to_battery')

Location: station

Sample Extracted?: False

Holding Sample?: False

Charged? False

None

Total number of states generated: 3

(Location: battery

Sample Extracted?: False

Holding Sample?: False

Charged? False, 'move_to_battery')

Total number of states generated: 3

None

Total number of states generated: 3

None

Ran 1 test in 0.006s

OK

DFS:

Goal found

(Location: battery

Sample Extracted?: False

Holding Sample?: False

Charged? False, 'move_to_battery', 1)

Location: station

Sample Extracted?: False

Holding Sample?: False

Charged? False

None

Total number of states generated: 2

Depth-limited search to battery (limit=2): (Location: battery

Sample Extracted?: False

Holding Sample?: False
Charged? False, 'move_to_battery', 1)
Total number of states generated: 3
Depth-limited search to extract sample (limit=4): None
Total number of states generated: 3
Depth-limited search to charge and extract sample (limit=6): None

Ran 1 test in 0.006s

OK

Part5

BFS:

Goal found
(Location: battery
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? False, 'move_to_battery')
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? False
None
Total number of states generated: 3
(Location: battery
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? False, 'move_to_battery')
Goal found
(Location: sample
Sample Extracted?: True
Holding Sample?: False
Charged? False
Holding Tool? True, 'use_tool')
Location: sample
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? True
Location: station
Sample Extracted?: False
Holding Sample?: False

Charged? False
Holding Tool? True
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? False
None
Total number of states generated: 7
(Location: sample
Sample Extracted?: True
Holding Sample?: False
Charged? False
Holding Tool? True, 'use_tool')
Goal found
(Location: battery
Sample Extracted?: True
Holding Sample?: False
Charged? True
Holding Tool? True, 'charge')
Location: battery
Sample Extracted?: True
Holding Sample?: False
Charged? False
Holding Tool? True
Location: sample
Sample Extracted?: True
Holding Sample?: False
Charged? False
Holding Tool? True
Location: sample
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? True
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? True
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False

Holding Tool? False
None
Total number of states generated: 15

(Location: battery
Sample Extracted?: True
Holding Sample?: False
Charged? True
Holding Tool? True, 'charge')

Ran 1 test in 0.018s
OK

DFS:

Goal found
(Location: battery
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? True, 'move_to_battery', 2)
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? True
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? False
None
Total number of states generated: 3
(Location: battery
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? True, 'move_to_battery', 2)
Goal found
(Location: sample
Sample Extracted?: True
Holding Sample?: False
Charged? False
Holding Tool? True, 'use_tool', 3)
Location: sample

Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? True
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? True
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? False
None
Total number of states generated: 5
(Location: sample
Sample Extracted?: True
Holding Sample?: False
Charged? False
Holding Tool? True, 'use_tool', 3)
Goal found
(Location: battery
Sample Extracted?: True
Holding Sample?: False
Charged? True
Holding Tool? False, 'charge', 6)
Location: battery
Sample Extracted?: True
Holding Sample?: False
Charged? False
Holding Tool? False
Location: sample
Sample Extracted?: True
Holding Sample?: False
Charged? False
Holding Tool? False
Location: sample
Sample Extracted?: True
Holding Sample?: False
Charged? False
Holding Tool? True
Location: sample
Sample Extracted?: False

Holding Sample?: False
Charged? False
Holding Tool? True
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? True
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? False
None
Total number of states generated: 9
(Location: battery
Sample Extracted?: True
Holding Sample?: False
Charged? True
Holding Tool? False, 'charge', 6)

Ran 1 test in 0.011s
OK

Part6

Solving Subproblem 1: Move to Sample
Goal found
(Location: sample
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? False, 'move_to_sample')
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? False
None
Total number of states generated: 2
Subproblem 1 solved, number of states generated: (Location: sample
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? False, 'move_to_sample')

Solving Subproblem 2: Extract Sample

Goal found

(Location: sample

Sample Extracted?: True

Holding Sample?: False

Charged? False

Holding Tool? True, 'use_tool')

Location: sample

Sample Extracted?: False

Holding Sample?: False

Charged? False

Holding Tool? True

Location: station

Sample Extracted?: False

Holding Sample?: False

Charged? False

Holding Tool? True

Location: station

Sample Extracted?: False

Holding Sample?: False

Charged? False

Holding Tool? False

Location: sample

Sample Extracted?: False

Holding Sample?: False

Charged? False

Holding Tool? False

Location: station

Sample Extracted?: False

Holding Sample?: False

Charged? False

Holding Tool? False

None

Total number of states generated: 7

Subproblem 2 solved, states generated: (Location: sample

Sample Extracted?: True

Holding Sample?: False

Charged? False

Holding Tool? True, 'use_tool')

Solving Subproblem 3: Return to Charger

Goal found

(Location: battery

Sample Extracted?: True
Holding Sample?: False
Charged? True
Holding Tool? True, 'charge')
Location: battery
Sample Extracted?: True
Holding Sample?: False
Charged? False
Holding Tool? True
Location: sample
Sample Extracted?: True
Holding Sample?: False
Charged? False
Holding Tool? True
Location: sample
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? True
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? True
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? False
Location: sample
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? False
Location: station
Sample Extracted?: False
Holding Sample?: False
Charged? False
Holding Tool? False
None
Total number of states generated: 9
Subproblem 3 solved, states generated: (Location: battery
Sample Extracted?: True
Holding Sample?: False

Charged? True
Holding Tool? True, 'charge')
Decomposition test completed.

Ran 1 test in 0.021s
OK